

PRODUCT CATALOG
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Okabe Product Catalog



Okabe Co., Ltd.

Okabe Product Catalog

◆ Corporate Philosophy

"Contribution to society by providing safety and security"

◆ Corporate Profile

Corporate Name : Okabe Co., Ltd.
(Tokyo Stock Exchange: 1st Section)

Foundation : April 14th, 1917

◆ Upon catalog usage

Please note that listed products, details, and specifications are as of March 2015, and these will be changed, modified, or no longer in production without notice.

Do Not duplicate the catalog without permission.

Please immediately notify us if defectives are found.

Make sure to read "Cautions" before using products.

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φ 48.6 Clamp

For φ 48.6 steel pipe

Product No. A10-0010

Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Fixed φ 48.6	0.73	30	22	Case
Swivel φ 48.6	0.72	30	21	



Allowable load

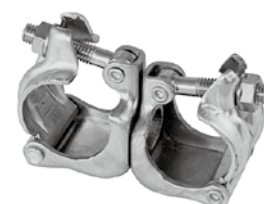
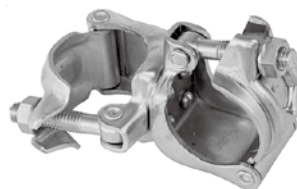
- Fixed φ48.6 4.90kN (500kgf)
- Swivel φ48.6 3.43kN (350kgf)

φ 42.7 - φ 48.6 Compatible Clamp

For φ 42.7 or φ 48.6 steel pipe

Product No. A10-0020

Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Fixed φ 48.6	0.71	30	21	Case
Swivel φ 48.6	0.70	30	21	



Allowable load

- Fixed φ48.6 4.90kN (500kgf)
- Swivel φ48.6 3.43kN (350kgf)

Triple Clamp

For φ 48.6 steel pipe

Product No. A10-0030

Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Fixed φ 48.6	1.14	20	23	Case
Swivel φ 48.6	1.15	20	23	



Beam Clamp

Product No. A10-0040

For H-beam & $\phi 42.7$ or $\phi 48.6$ steel pipe

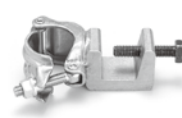
Type A-1
For the Lateral side of H-beam
Fixed / Swivel



Type A-2



Type B-1



Type B-2

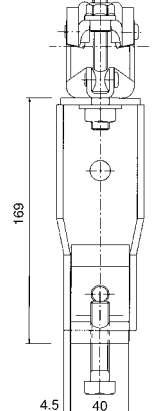
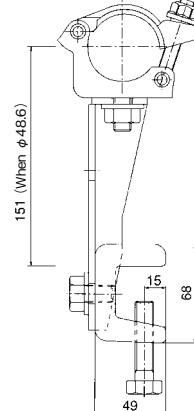
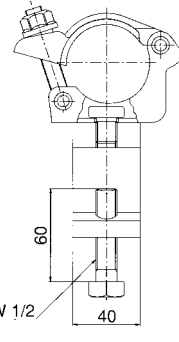
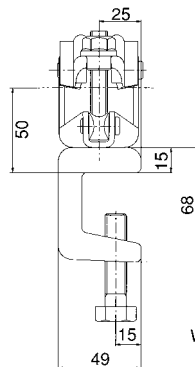
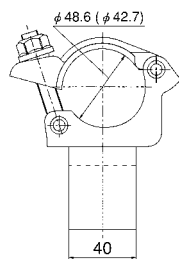
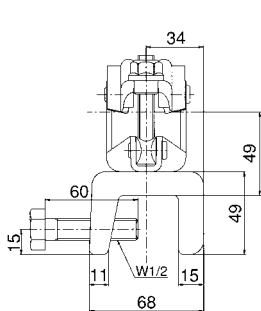


Type C
Detachable 2-way



Lateral side

Top or Bottom side
(Factory Preset)



Product	Weight (kg/pc)	Quantity (pc/bag)	Weight (kg/bag)	Packing
A-1 (Fixed)	1.04	20	20	PP bag
A-2 (Swivel)	1.04	20	20	
B-1 (Fixed)	1.04	20	20	
B-2 (Swivel)	1.04	20	20	
C (Preset Lateral)	1.80	15	22	
C (Preset Top or Under)	1.80	15	22	

Features

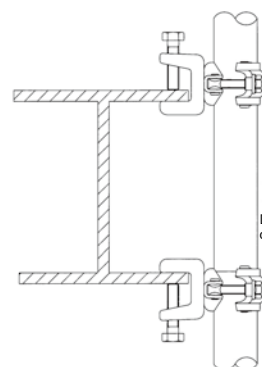
- Specially designed hot rolled material is used for the U-shaped part.
- The wide U-shaped part provides excellent stability.
- Compact design.
- The clamp can be securely fastened to a steel frame because of the use of high tensile cup point bolts as lock bolts.

Cautions

- Tightening torque for both U-shaped hardware and single clamp is 3.43~4.41kN·cm (350~450kgf·cm).
- Two beam clamps must be installed for clamping.
- Regarding the common type clamp, check the tightening of the clamp attaching bolt before using the clamp. [Tightening torque: 2.45kN·cm (250kgf·cm)]
- Do not use the clamp in such a direction as to cause slipping or falling from the H-beam, etc.
- Fit the U-shaped hardware to the H-beam etc., until fully inserted, and tighten the U-shaped hardware.
- H-beam etc., to which the clamp is attached must be 6mm or more in thickness.
- The applicable flange thickness is up to 32mm.
- The clamp must be used within the allowable load.

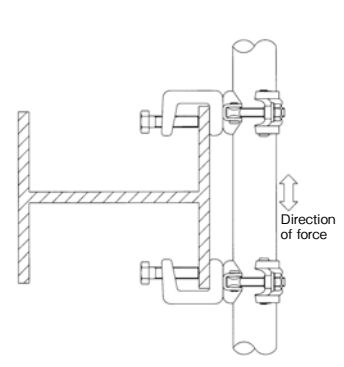
◆Allowable load

Type A-1 / A-2 Lateral side of H-beam



Parallel to push bolts
Allowable load: 4.41kN (450kgf)

Type B-1 / B-2 Top/ Bottom side of H-beam



orthogonal to push bolts
Allowable load: 3.08kN (315kgf)

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

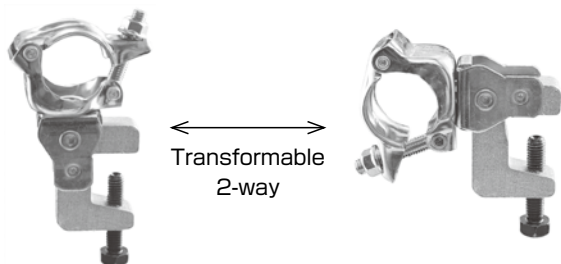
Civil Engineering

Beam Clamp Multipurpose

For H-beam & $\phi 42.7$ or $\phi 48.6$ steel pipe

Product No. A10-0050

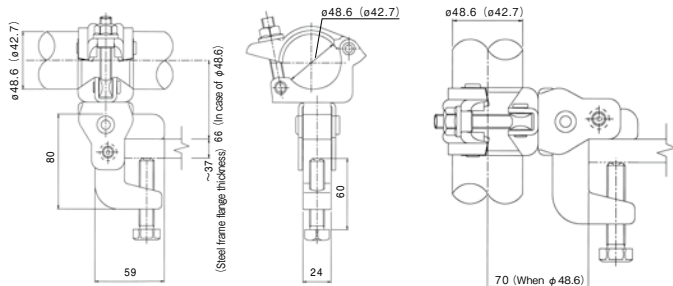
D1: Fixed / D2: Swivel



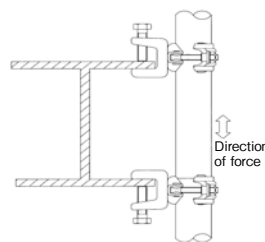
Transformable
2-way

For the Lateral side of H-beam

For the Top/Under side of H-beam



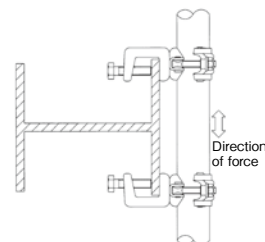
◆ Allowable load



Lateral side of H-beam

Parallel to push bolts

Allowable load: 4.41kN (450kgf)



Top/Bottom side of H-beam

orthogonal to push bolts

Allowable load: 3.08kN (315kgf)

Features

- One clamp serves as two types (orthogonal and parallel types):
Beam clamp fixed & diagonal types ☐ ▶ Beam Clamp Multipurpose D1
Beam clamp fixed & parallel types ☐ ▶ Beam Clamp Multipurpose D2
Beam clamp swivel & diagonal types ☐ ▶ Beam Clamp Multipurpose D2
Beam clamp swivel & parallel types ☐ ▶ Beam Clamp Multipurpose D2
- Grip thickness for H-beam, etc., is a maximum of 37mm and it can be used across a wide range.

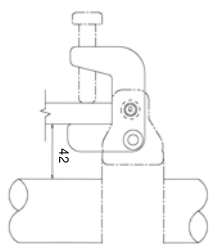
Cautions

- Do not use the product with a standard beam clamp at the same location. The clearance from the steel frame to the pipe will be as shown in the figure below.
- Applicable flange thickness is up to 37mm.
- Be sure to use the product within the allowable load.

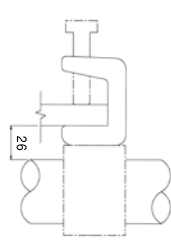
Product	Weight (kg/pc)	Quantity (pc/bag)	Weight (kg/bag)	Packing
D1 (Fixed)	1.15	20	23	PP bag
D2 (Swivel)	1.15	20	23	

Lateral Side Use: 16mm difference

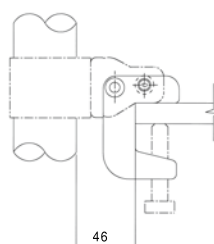
Top/Under side Use: 21mm difference



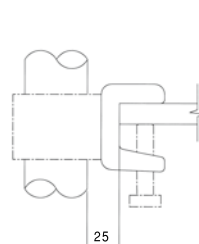
Beam Clamp Multipurpose



Beam clamp



Beam Clamp Multipurpose



Beam clamp

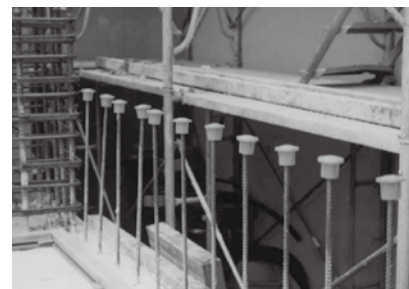
Rebar/Pipe Cap

Plastic cap for rebar or ϕ 48.6 steel pipe

Product No. A10-0110

Features

- Two sizes cover various rebar diameters and ϕ 48.6 pipe.
- By simply fitting the cap, injuries can be prevented.
- The cap is structured in such a way that it can be easily fitted and does not come off easily.



- ◆ Applicable rebar/pipe diameters
Regular Size: Rebar(D13, D16, D19, D22, D25)
Steel pipe ϕ 48.6
Small Size: Rebar(D10, D13)
※ Small size does not fit the pipe

Product	Quantity (pc/case)	Weight (kg/case)	Packing
Regular size	200	4	Case
Small size	500	4	

Cautions

- The cap can be used only for applicable sizes.
- Fit the cap to a rebar or pipe by pressing it until the tip of the rebar/pipe touches inner surface of the cap.
- Avoid reusing the product for a rebar/pipe of smaller diameter, as its holding force is weakened.
- Do not use the product if it is cracked or damaged.

Clamp Cover

Plastic cover for Okabe clamp

Product No. A10-0120

Soft Plastic



Hard Plastic



Application

- To prevent passersby from danger at a road construction site, etc.
- To prevent workers from danger at a construction site.
- Safety aisle signs at a civil engineering/construction site.
- To prevent danger at stage setting, product racks, bon dance platform, etc., which use scaffolding clamps.

Cautions

- Do not step on the cover as it is slippery.
- Since the shape differs depending on the manufacturer, do not use the cover for a clamp made by another manufacturer.

Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Soft plastic	0.02	100	2	Case
Hard plastic	0.05	100	5	

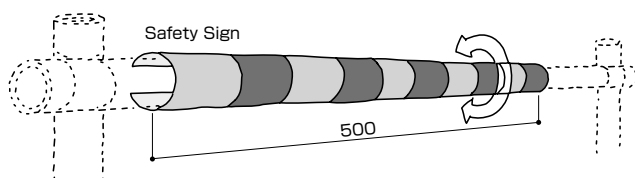
Safety Sign

For ϕ 48.6 steel pipe

Product No. A10-0130

Features

- Easy to attach and remove with one-touch operation.



Product	Applicable pipe diameter	Quantity (pc)
Safety Sign	ϕ 48.6	100

Wall-Tie Insert

Insert for wall-tie

Product No. A20-0010

	Wall-Tie Insert W1/2	Wall-Tie Insert W5/8
Type C		
Type B		
Type Z		

Features

- Sufficient strength of the product is guaranteed.
- Use this product together with Scaffolding Keeper.

Allowable load

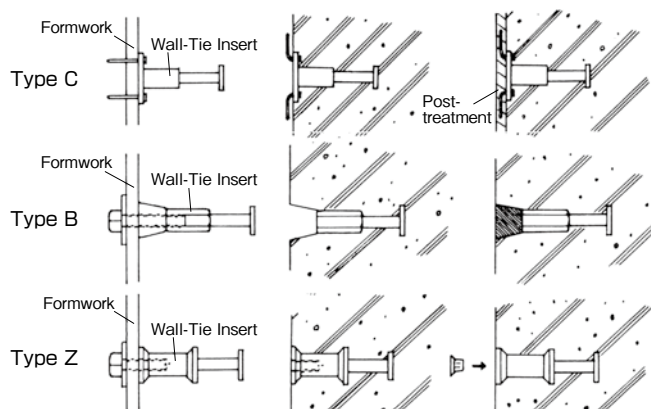
- Tensile and compression: 4.41kN (450kgf)

Product	Weight (kg/pc)	Quantity (pc/bag)	Weight (kg/bag)	Packing
W1/2 Type C	0.12	150	18	PP bag
Type B	0.21	100	21	PP bag
Type Z	0.16	100	16	Case
W5/8 Type C	0.20	100	20	PP bag
Type B	0.21	100	21	PP bag
Type Z	0.21	100	21	PP bag

Cautions

- Do not use the product as a scaffolding bracket or a scaffolding support anchor.
- Do not use the product in the direction where shearing action is applied.
- Be sure to use the product within the allowable load.

How to use



Wall-Tie Insert : Bolt-In

Bolt-in insert for wall-tie

Product No. A20-0020

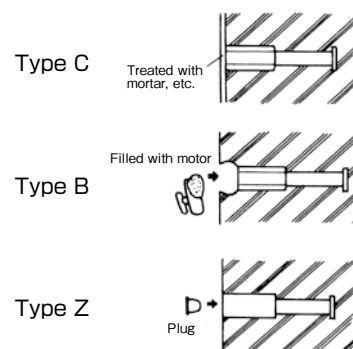
Type C	Finishing type
Type B	Undressed concrete: Mortar filling type
Type Z	Undressed concrete: Plug driving type

Features

- All work from drilling to installation can be done by one person.
- The insert can be installed from outside the form. In addition, installation is possible even after completion of form work.
- The rubber plug and hexagon head bolt can be reused.

Allowable load Tensile and compression: 4.41kN (450kgf)

How to use



Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
W1/2 Type C	0.16	100	16	Case
Type B	0.17	100	17	
Type Z	0.16	100	16	

Cautions

- Use a $\phi 21$ drill for woodworking (sold separately).
- Use this product according to the usage instructions for Wall-Tie Insert.

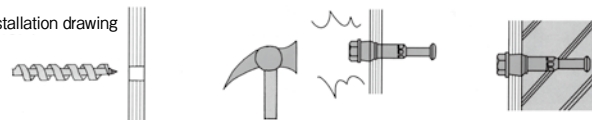
Wall-Tie Insert : Cast-In

Cast-in insert for wall-tie

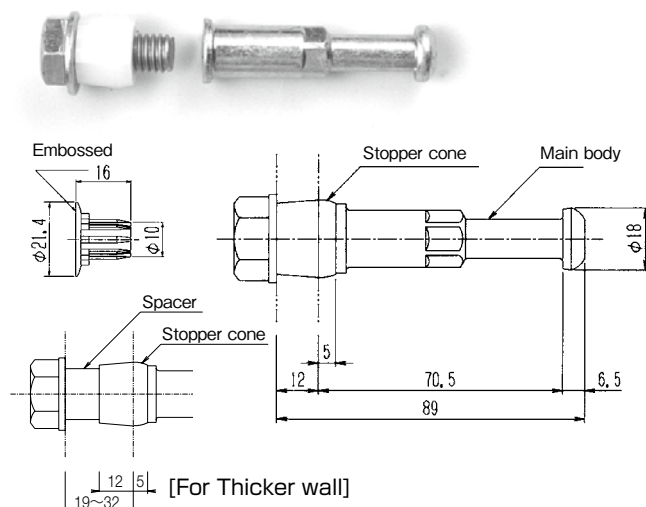
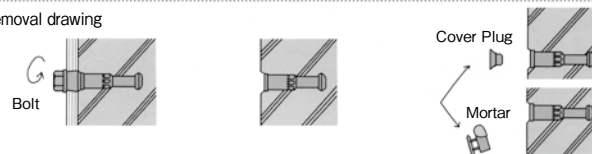
Product No. A20-0030

Working method

Installation drawing



Removal drawing



Features

- The insert can be installed just by hitting it with a hammer.
- The integrally molded cone provides large fixing power, eliminating the risk of breakage.
- The concrete surface can be finished neat and clean, as the stopper cone does not leave resin for fixing.

Product	Applicable dimensions (mm)	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Standard	12	0.14	100	14	Case
For Thicker Wall -19~32	19~32	—	—	—	—
Cover Plug	—	—	—	—	—

* Made-To-Order is available for other wall thickness.

Allowable load	Tensile and compression: 4.41kN (450kgf)
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Cautions

- Use a $\phi 21$ drill for woodworking (sold separately).
- Use this product according to Wall-Tie Insert usage instructions.

A
Temporary Construction

B
Concrete Formwork

C
Rebar Work

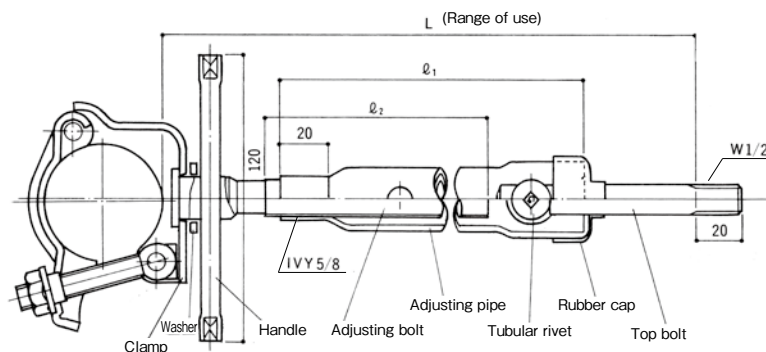
G
Civil Engineering

Wall-Tie

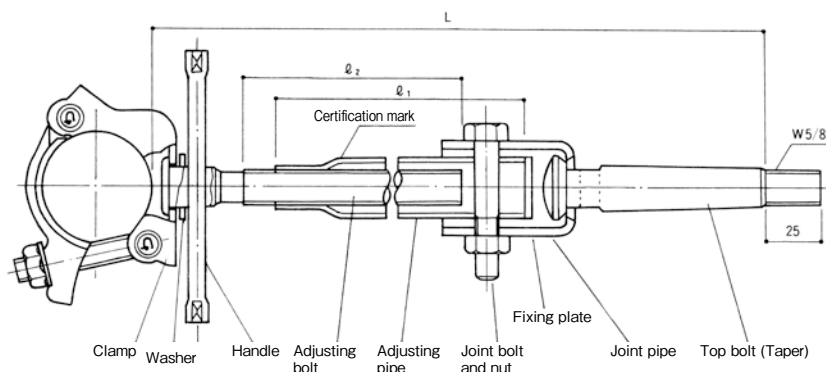
Tying hardware for scaffolding & wall

Product No. A30-0010

Type A



Type G



Application

- To prevent scaffolding overturn
- To prevent scaffolding buckling

Allowable load Tensile and compression: 4.41kN (450kgf)

Features

- IVY thread of the adjusting bolt which has twice larger pitch than the conventional thread is a key tech to effectiveness.
- IVY thread also makes it easier to remove concrete from the adjustment bolt.
- Long Top bolt provides easy finishing work with mortar, tiling, or anything.
- Variety of sizes can be offered (Type A).
- Top bolt can be rotated independently from Body, which provides removal work extremely easier (type G).
- The totatable top bolt of type G enables the angled fastening.

Cautions

- Screw the top bolt into the insert all the way.
- Tighten the bolt of the clamp with a tightening torque of 3.43~4.41kN·cm (350~450kgf·cm).
- When attaching the clamp to (or removing the clamp from) the upright post of the scaffolding, use a dedicated tool such as a ratchet spinner, and do not hit the bolt with a hammer, etc.
- To attach or remove the top bolt, use a ratchet spanner or form tie spanner (type G).
- Attach the product at right angles to the building as much as possible. When it is difficult due to the structure or location of the building,

make a connection using a pipe, etc.

- Use Wall-Tie Insert (A20-0010~30) as an insert on the wall side.
- Do not use the product for any purpose other than using it as hardware to connect scaffolding and wall (e.g. placing a scaffolding walk board on the product).
- Be sure to use the keeper within the allowable load.

Compression & tensile

8.83kN or more

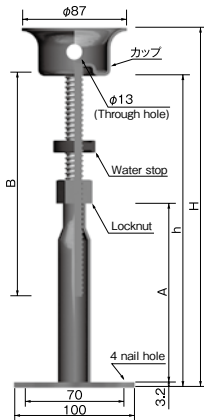
Product	Range of use L (mm)	Pipe length l_1 (mm)	Bolt thread length l_2 (mm)	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Type A	160	160~200	95	0.77	20	15	Case
	200	200~240	110	0.84	20	17	
	300	240~320	150	0.94	20	19	
	350	280~400	190	1.04	20	21	
	400	320~480	230	1.15	20	23	
	600	480~670	390	1.45	10	14	
	800	670~860	580	1.70	10	17	
	1000	860~1050	770	1.94	10	19	
Type G	300	275~350	130	1.29	15	19	Case
	400	350~500	205	1.48	15	22	
	600	500~650	355	1.71	10	17	

Pipe Holder Cup

Product No. A30-0020

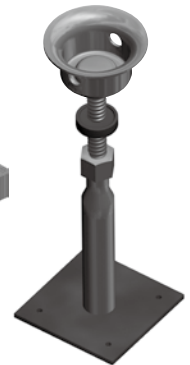
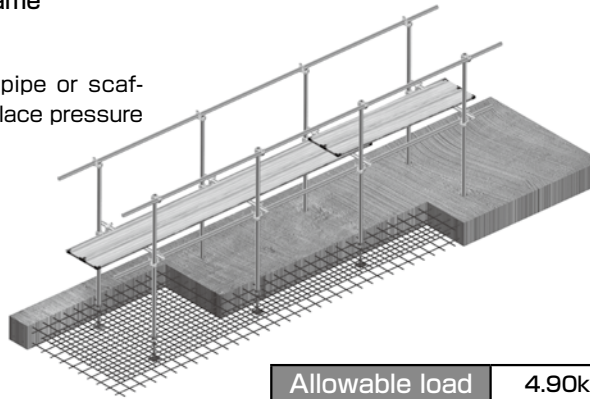
Holder cup for steel pipe or scaffolding frame

◆Spec



◆Application

- To receive steel pipe or scaffolding frame to place pressure resisting board



Allowable load 4.90kN (500kgf)

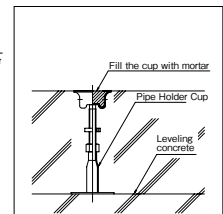
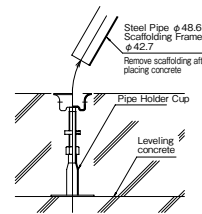
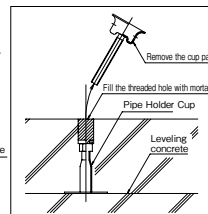
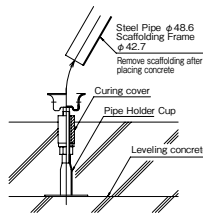
◆How to use

In case the cup is removed ▲

In case the cup is embedded

(Unit: mm)

		H200		H300		H500	
		min	max	min	max	min	max
Dimensions of each part	H	170	240	230	360	340	580
	h	130	200	190	320	300	540
	A	95		155		265	
	B	130		190		300	
Packing		Case		Case		Case	
Quantity		10 units		10 units		10 units	
Weight (Package)		9.8kg		11.4kg		14.3kg	



Cautions

- Use the product within the allowable load of 4.90kN·cm (500kgf·cm). Make the load act vertically.
(Horizontal load is not taken into consideration.)
- The numerical value of the allowable load is the strength of this product.
- Do not use the product under horizontal load.
- After adjusting the height, be sure to tighten the locknut.
- After adjusting the height, be sure to set the waterstop ring in the middle between the cup lower end and the locknut.
- Be sure to place the pipe in the center of the cup.
- Be sure to secure the baseplate with four concrete nails, and use the product within the applicable height mentioned above.
- When the cup is removed, lower the waterstop ring near the locknut and cure the bolt part before placing concrete.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

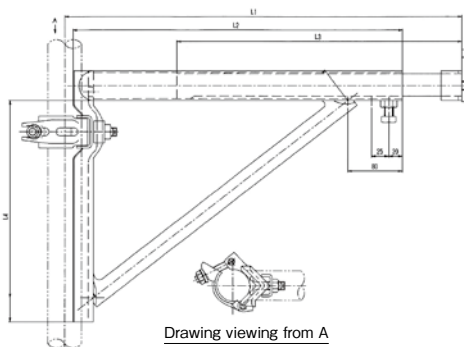
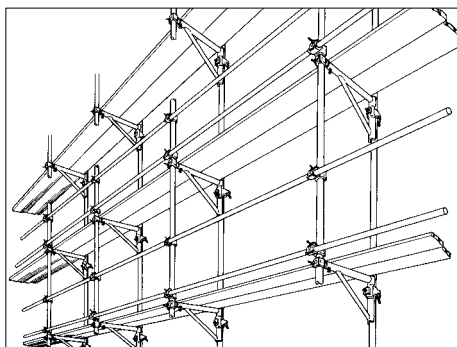
G

Civil Engineering

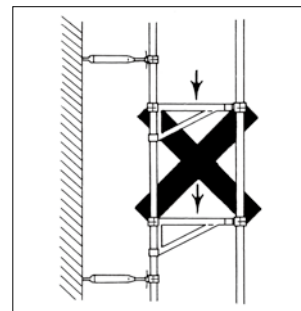
Slide Bracket

Extendable bracket for scaffolding walk board

Product No. A30-0030



Caution: Do NOT install no more than 1 Slide Bracket between Wall-Ties.



Product	Adjustment range L	Weight (kg/pc)	Quantity (pc/bundle)	Weight (kg/bundle)	Packing
Slide Bracket E500	350~545	3.55	5	18	Secured with rope
E750	530~775	4.65	5	23	Secured with rope
E1000	770~1025	5.94	5	30	Secured with rope
D500	350~545	3.69	5	18	Secured with rope
D750	530~775	4.87	5	24	Secured with rope
D1000	770~1025	6.30	5	32	Secured with rope
Bracket clamp		0.39	50	20	Case

Type E: Electroplated Type D: Hot dip galvanized items are made to order items.

Product	L1	L2	L3	L4
Slide Bracket E500, D500	350~545	300	300	275
E750, D750	530~775	480	415	320
E1000, D1000	770~1025	730	415	385

Features

- The length can be adjusted.
- The grip hardware (clamp) can be used for both frame scaffolding and pipe scaffolding, as it is compatible with both $\phi 42.7$ and $\phi 48.6$ pipes.
- To install a handrail pole, a detachable bracket clamp is available.

Allowable load

- When the bracket is used for the auxiliary scaffolding for frame scaffolding (or pipe scaffolding), the allowable bearing capacity of the bracket per board is up to 2.45kN (250kgf).
- When the bracket is used for single row scaffolding, L should not exceed 600mm, and scaffolding height should not exceed 15m. The allowable bearing capacity per span per layer is up to 1.47kN (150kgf).

Cautions

- Do NOT install more than one Slide Bracket between wall-ties. (See above figure).
- Tighten the bracket clamp with a tightening torque of 3.43~4.41kN·cm (350~450kgf·cm). (Do not overtighten the clamp, or the bolt will be damaged. Also, be careful not to forget tightening the clamp.)
- For frame scaffolding, the best location to install bracket is where frame braces are.
- For both frame scaffolding and pipe scaffolding, the best location to install bracket is the closest part to the Wall-Tie.
- Be sure to use the product within the allowable load.

Features

- Can be used for both single row and double row scaffolding, with clamps used at both ends of the bracket.
- Easy to store and transport as the bracket can be folded up.

Allowable load

- When the bracket is used for frame scaffolding or pipe scaffolding, its projection length should not exceed 600mm, and imposed load per bracket should not exceed 1.47kN (150kgf).

Cautions

- Please use this product according to the usage instructions for Slide Bracket.

Scaffolding Bracket

Bracket for scaffolding walk board

Product No. A30-0040

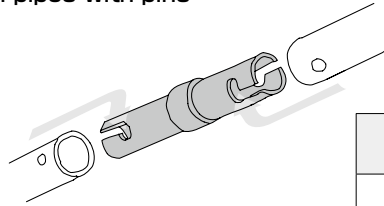
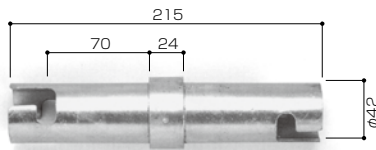


Product	Weight (kg/pc)	Quantity (pc/bundle)	Weight (kg/bundle)	Packing
Scaffolding Bracket	3.01	5	15	Secured with rope

Pipe Joint

Joint hardware for ϕ 48.6 steel pipes with pins

Product No. A30-0060



◆ Allowable load

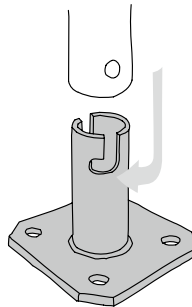
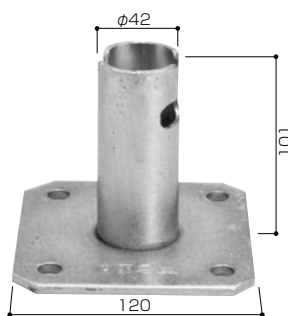
- Tensile load: 7.35kN (750kgf)
- Compression load: 18.6kN (1900kgf)

Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Pipe Joint	0.56	30	17	Case

Scaffolding Base Plate

Base plate for ϕ 48.6 steel pipe or scaffolding frame

Product No. A30-0070

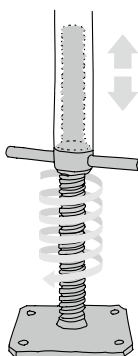


Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Base Plate	0.74	25	18	Case

Jack Base

Jack base for ϕ 48.6 steel pipe or scaffolding frame

Product No. A30-0080



Allowable load

Allowable bearing capacity kN (kgf) according to the travel length of Jack Base

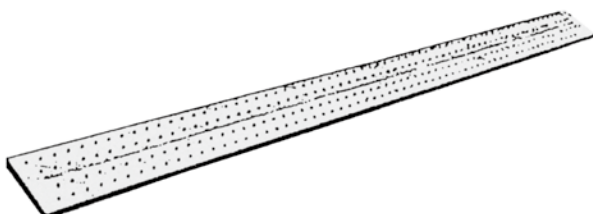
Travel length (mm)	Standard frame		Simple frame
	Less than 1,800mm	1,800mm~ 2,000mm	
Less than 200	42.6 (4350)	39.2 (4000)	34.3 (3500)
200~ less than 250	40.6 (4150)	37.2 (3800)	32.8 (3350)
250~ less than 300	38.7 (3950)	35.7 (3650)	31.3 (3200)
300~ less than 350	37.2 (3800)	34.3 (3500)	29.9 (3050)

Product	Weight (kg/pc)
Jack Base	3.51

Scaffolding Walk Board

Aluminum scaffolding walk board

Product No. A30-0210



Product	Thickness (mm)	Width (mm)	Length (mm)
Aluminum Walk board	37	250	4000

Scaffolding Rubber Strap

Product No. A30-0220

Scaffolding walk board strap



Product	Total length (mm)	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Scaffolding Rubber Strap	800	0.10	200	20	Case

Cautions

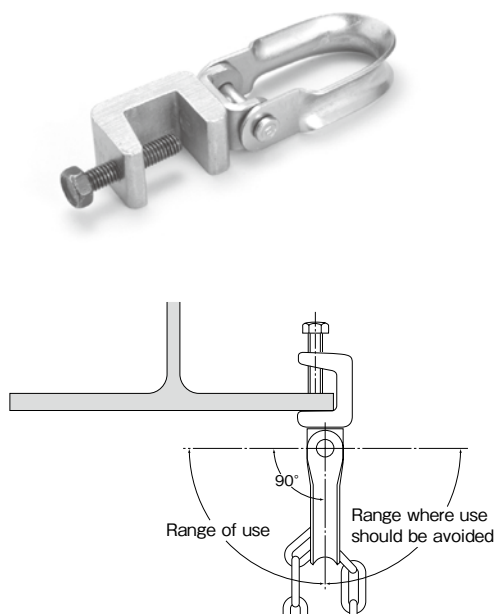
- Do not use an elongated or deformed hook.
- Do not apply an impact to the rubber band.
- Do not use an old or deteriorated band.
- Do not use a twisted or tied band.
- Do not use a rusty band.

Chain Hanging Loop : Beam

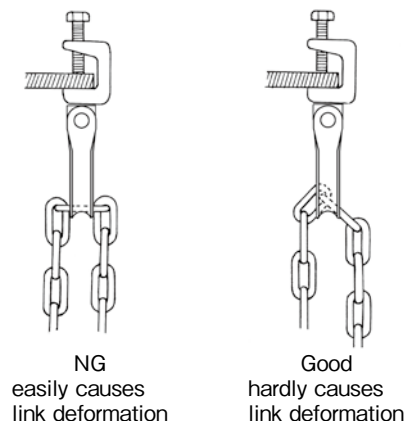
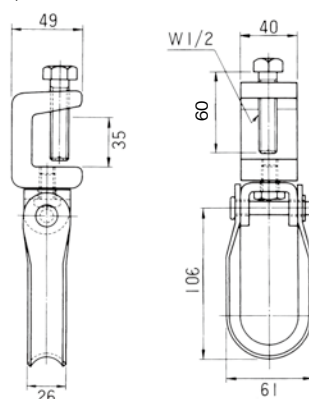
U-shaped chain hanging loop for H-beam

Product No. A30-0310

◆How to use



◆Size



Product	Weight (kg/pc)	Quantity (pc/bag)	Weight (kg/bag)	Packing
Chain Hanging Loop : Beam	0.98	25	24	PP bag

Allowable load 4.21kN (430kgf)

Features

- The special large ring facilitates easy chain hanging operation, and protects the chain from kinks and deformation.
- The use of hot rolled steel with higher strength and stability allows safe installation.
- The swivel and swing ring enables easy installation.
- The swing ring also allows for compact storage.
- The hanging loop can be securely fastened to H-beam because of the use of high tensile cup point bolts as lock bolts.

Cautions

- Hang a chain to the product in such a way as to avoid deformation of chain link.
- Do not use the product for lifting steel beams.
- Tighten the bolt with a tightening torque of 3.43~4.41kN·cm (350~450kgf·cm).
- Regarding the pulling directions of the ring, follow the "Range of use" shown in the figure above.
- In a case of hanging shelf scaffolding, use the hanging loop within the allowable load for scaffolding chain.
- When mounting the hanging loop to a flange, fit the U-shaped part to the

flange until the flange is fully inserted.

- Applicable flange thickness of H-beam is no less than 6mm, and no more than 32mm.
- Be sure to use the hanging loop within the allowable load.

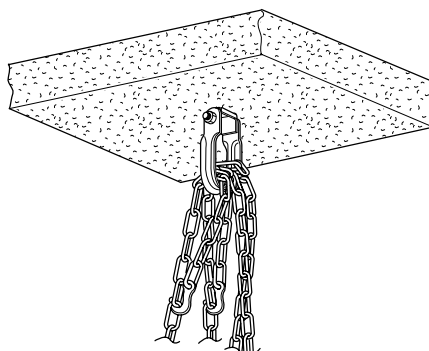
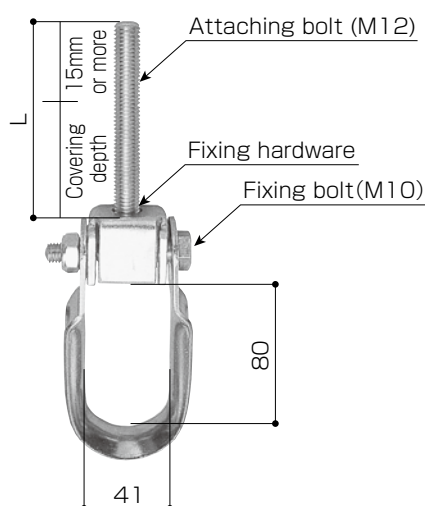
Chain Hanging Loop : Insert

U-shaped chain hanging loop for M12 insert

Product No. A30-0320

Features

- Chain-friendly shape: Protects chain from deformation such as bent or twisted links.
- Improved workability: The ring is large making it easy to hang a chain. Also, it is easy to attach to an insert.
- Safety secured: Sufficient strength for a scaffolding chain. The length of the attaching bolt can be optionally changed.



Allowable load 4.21kN (430kgf)

Product	Covering depth (mm)	L dimension (mm)	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Chain Hanging Loop : Insert 35	35	50	0.43	50	21	Case
Chain Hanging Loop : Insert 50	50	65	0.43	50	21	
Chain Hanging Loop : Insert 70	70	85	0.43	50	21	

A Temporary Construction

B Concrete Formwork

C Rebar Work

D Civil Engineering

Pipe Hanging Chain

Hanging chain for round steel pipe

Product No. A30-0330



Pipe hanging chain



Pipe hanging chain with stopper



Single chain lifting



Loop lifting

◆ Allowable load

- Single chain lifting: 2.35kN (240kgf)/chain
- Loop lifting: 2.41kN (430kgf)/chain

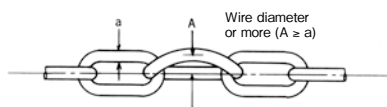
Features

- The use of our original hook prevents tangling of the chain, contributing to significant field work labor savings.
- Because of the slip prevention function, it is not necessary to protect the hook (by wrapping with plastic tape) when the chain is used for hanging shelf scaffolding, resulting in significant labor savings and enhanced safety (Chain with stopper).

Cautions

Do Not use the product under any of the following conditions:

- The length has increased by 5% or more compared to the length at the time of manufacture (compare the length of any five links).
- The link diameter has reduced by 10% or more compared to the diameter at the time of manufacture.



- Having a crack.
- Link deformation has exceeded the wire diameter (Un-repairable).
- The hook has fallen off (Un-repairable).
- Extremely rusty (rust has penetrated deep into the link or hook).
Even if rust has not penetrated deep as mentioned above, if it is a concern that rust may affect the chain strength, conduct a tensile test (tensile load: 15.7kN (1600kgf) or more). Only a chain that has passed the test can be used again.
- Be sure to use the product within the allowable load.

Pipe hanging chain

Product	Length (m)	Weight (kg/pc)	Quantity (pc/bag)	Weight (kg/bag)	Packing
S-2	2	1.26	20	25	PP bag
S-3	3	1.86	15	28	
S-4	4	2.45	10	25	
S-5	5	2.90	10	29	
S Order	—	—	—	—	
D-2	2	1.30	25	33	Jute bag
D-3	3	1.93	15	29	
D-4	4	2.58	10	26	
D-5	5	3.20	10	32	
D Order	—	—	—	—	

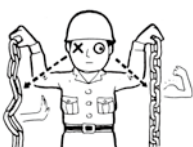
Type S: Electroplated Type D: Hot dip galvanized

Pipe hanging chain with stopper

Product	Length (m)	Weight (kg/pc)	Quantity (pc/bag)	Weight (kg/bag)	Packing
D-2	2	1.30	20	26	PP bag
D-3	3	1.93	15	29	
D-4	4	2.58	10	26	
D-5	5	3.20	10	32	

Eight safety rules for scaffolding chains

- 1 Do not use an elongated chain.



- 2 Do not apply an impact to the chain.



- 3 Do not apply any load that exceeds 2.35kN (240kgf). [Loop lifting: 4.21kN (430kgf)]



- 4 A very old chain may cause a problem. Inspect it every time before use.



- 5 Do not use a twisted or kinked chain.



- 6 Do not beat a deformed chain into shape for reuse. (This is prohibited in principle.)



- 7 Do not use a rusty chain.



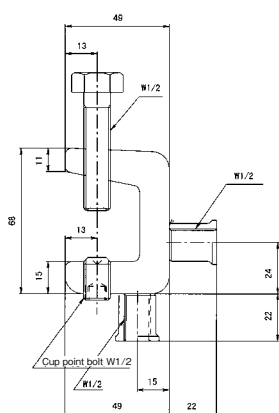
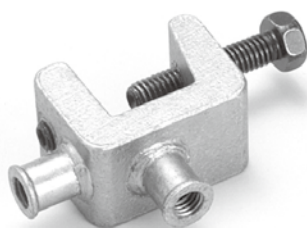
- 8 Do not use this chain for slinging of cargo lifting appliance.



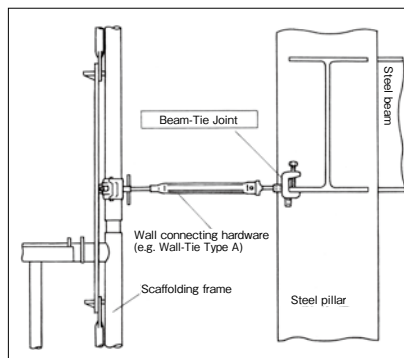
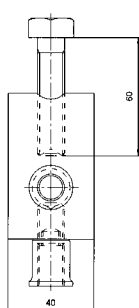
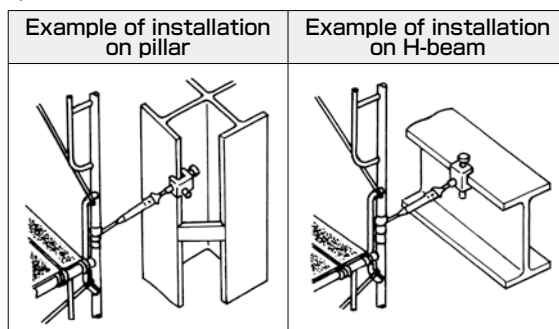
Beam-Tie Joint

Joint hardware for wall-tie & H-beam

Product No. A30-0340



How to use



Features

- As the product is firmly fixed to a steel frame, it can be safely used as hardware to connect scaffolding and beam.
- The product is made of tough material, and resistant against impact.
- The use of a high tensile cup point bolt enables the joint to be securely fixed to a steel frame. In addition, installation is easy.

Cautions

- Tighten the bolt securely with a tightening torque of 3.43~4.41kN·cm (350~450kgf·cm).
- Be sure to connect only one wall-tie per product, and do NOT connect two wall-ties to the product.
- Do not use any ordinary bolt or deformed bolt other than a dedicated bolt.
- Be sure to use this product within the allowable load.

Allowable load

4.41kN (450kgf)

H-Beam Scaffolding Hanging Frame : Welding

Scaffolding hanging frame for H-beam

Product No. A30-0410



Features

- Construction period is shortened.
- Setting up of scaffolding is completed at the same time as temporary tightening of the steel frame is completed, except for around posts.
- Safety aisle for high-place work.

Allowable load	In case of uniformly distributed load One side 1.96kN (200kgf) or less
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Horizontal movement amount of handrail pole

Horizontal movement amount when horizontal load is 0.78kN
100mm or less

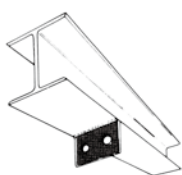
* Type B and type AW-55 are also available.

Product	Weight (kg/pc)
Cantilever type B	11.7
Type H-56	15.6
Type B	15.8
Type AW-55	15.6

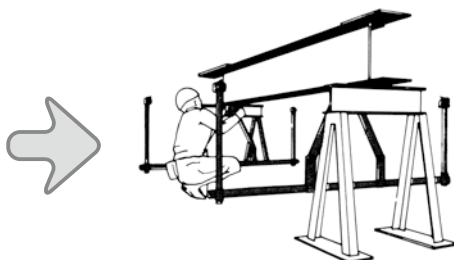
Cautions

- Prior to use, adjust the height and set the bolts completely.
- Use high strength bolts F10.9T, M12×50 as attaching bolts for H-beam Scaffolding hanging frame.
- Make sure that the two attaching bolts to connect the arms and the horizontal pipe are securely tightened.
- Taking advantage of features of H-beam Scaffolding hanging frame, perform as much assembly as possible on the ground (installation of handrail, scaffolding board, etc.).
- Be sure to install a crosspiece in the middle section of a handrail.
- When there is strong wind or during a typhoon, stop working. When the weather has improved, perform a safety inspection such as checking bolts for loosening.
- Be sure to use the product within the allowable load.

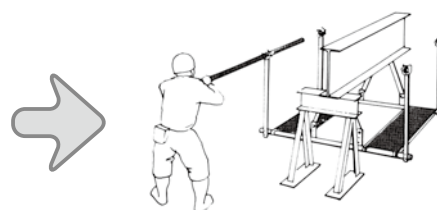
How to use



① Installation of arm joint



② Installation of H-beam Scaffolding hanging frame



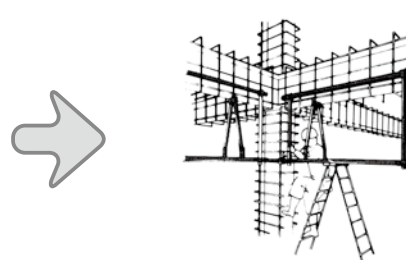
③ Installation of handrail and scaffolding board



④ Lifting and installing H-beam Scaffolding hanging frame



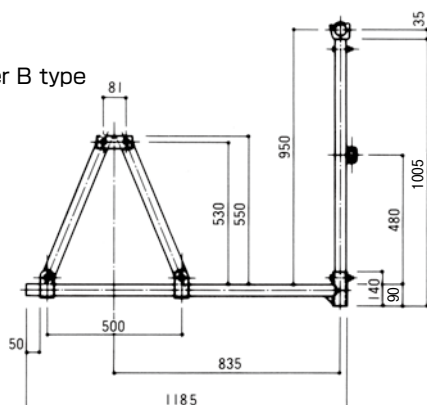
⑤ Bolt connection and reinforcement arrangement



⑥ Disassembly

Size

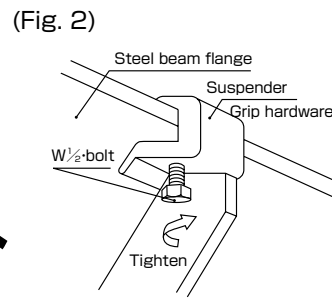
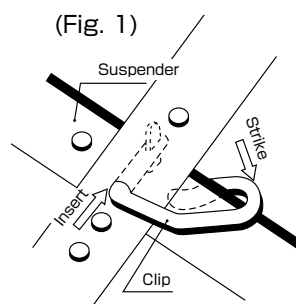
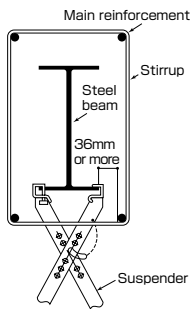
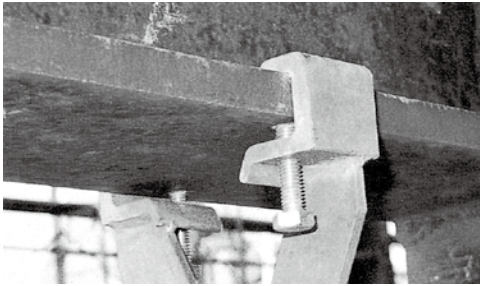
■ Cantilever B type



H-Beam Scaffolding Hanging Frame : Welding-Free

Non-welded scaffolding hanging frame for H-beam

Product No. A30-0420



How to use

1. Cross the suspenders, and hitch the grip hardware on the flange of the steel beam. (See Fig. 2.)
2. Insert the clip into the suspender holes which match the flange width, and lock the suspenders. (See Fig. 1)
3. Tighten each bolt for the grip hardware at the allocated positions. (See Fig. 2.)
4. Install scaffolding board, handrail pipe, etc. Then, lift and install the steel beam.

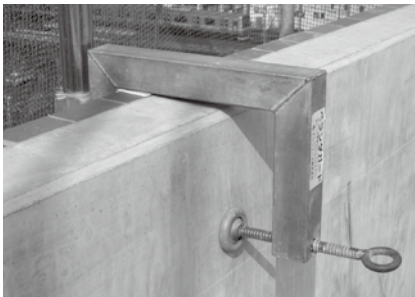
Cautions

- The product should be installed at intervals of 1,800mm (1,829mm) or less.
- Use the right and left suspender holes at the symmetrical positions and lock the suspenders securely with the clip.
- Tighten the grip hardware with a tightening torque of 3.43kN·cm (350kgf·cm).

Balcony-Wall Joint I

U-shaped joint hardware for scaffolding & balcony wall

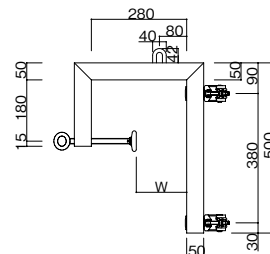
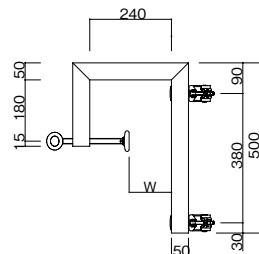
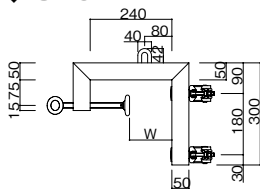
Product No. A30-0430



Features

- Attached to the balcony handrail wall and serves four purposes: prevention of flying or falling objects, simple scaffolding, receiving supports (S and L types), and fixing handrail.
- Lightweight and easy to carry.
- Provided with rubber cover to protect the structure surface.
- The clamp can be rotated freely.

Size



Balcony-wall Joint I Type S

Balcony-wall Joint I Type M

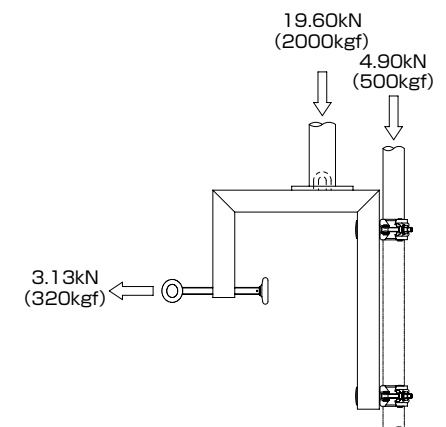
Balcony-wall Joint I Type L

Product	Balcony-wall Joint I I-S	Balcony-wall Joint I I-M	Balcony-wall Joint I I-L
Effective dimensions (mm)	100~205	100~205	140~245
Minimum available dimension H (mm)	105 or more	210 or more	210 or more
Weight (kg)	3.8	4.6	4.8

Example of use



Allowable load



Balcony-Wall Joint II

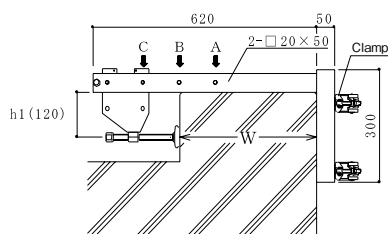
Extendable joint hardware for scaffolding & balcony wall

Product No. A30-0440

Features

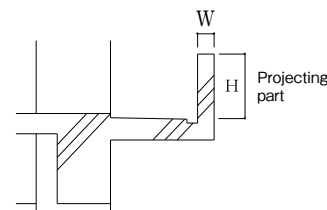
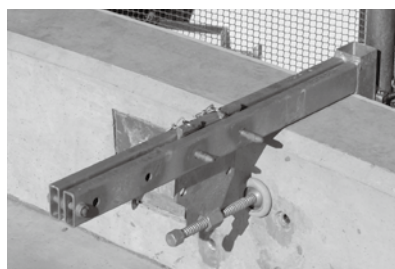
- The effective length can be adjusted for 3 stages from 150~450mm with A to C adjustment holes.
- The bolt height can be also adjusted with h1 and h2 adjustment holes.
- The main body and bolt part can be separated so that the main body can be removed even after attaching the guard to the handrail wall.

Size



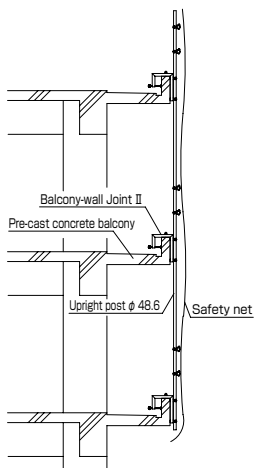
* Tightening bolt is a 21mm hexagonal bolt.

Range of use by each adjustment hole					
W	A	150~250mm	Effective height (h)	h1	150mm
	B	250~350mm		h2	80mm
	C	350~450mm	Weight	6.0kg	

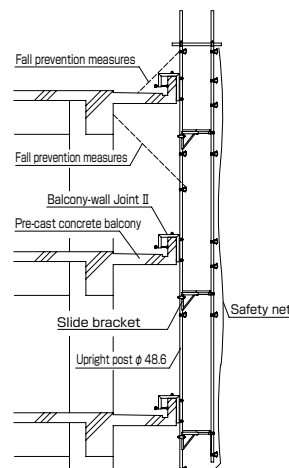


How to use

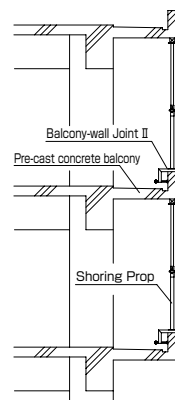
* When using Balcony-wall Joint II, take the fall prevention measures as shown in the figure.



Prevention of flying and falling objects



Simple scaffolding



Receiving Shoring Prop (only types S and L)

Cautions

- Use the product within the allowable load.
- Fasten the upright pipe securely with two clamps located up and down.
- Note that at least two up and down the product and at least two right and left the product must be used.
- Fit the product to the handrail wall until it touches the wall top end, and fasten it securely.
- If there is space between the product and the top end of the wall, place filling material.
- When using the product, please read the instruction manual.

Slope Bracket I

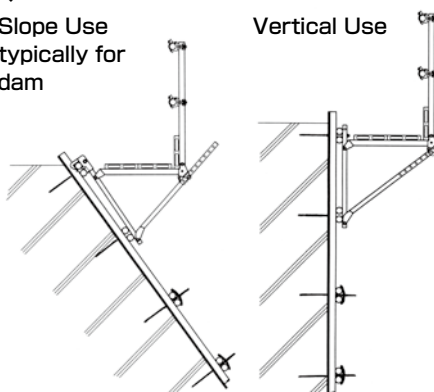
Scaffolding bracket for slope

Product No. A30-0510

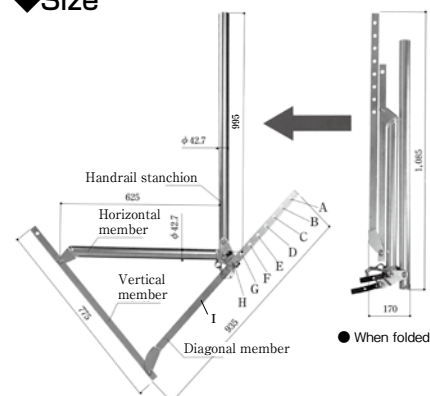


How to use

Slope Use
typically for
dam



Size



Features

- Applicable from vertical plane to 1:08 slope.
- The angle can be adjusted just by inserting or removing the pin.
- The product can be folded up so that storage space and transportation cost can be reduced.
- The product can be directly attached to the structure.

* Bolts need to be arranged separately. W1/2 and W5/8 (M12~M16) bolts can be used. (The hole diameter of the bracket is ϕ 17.)

Allowable load 1.96kN (200kgf)

Product	Weight (kg/pc)
Slope Bracket	7.5

* Hot dip galvanized

Cautions

- Be sure to bind the handrail pole, handrail and crosspiece with clamps.
- Do not use this product with a Slope Bracket II because scaffolding position is different.
- Be careful not to jam your fingers or toes when folding up the bracket.
- Both round pipes and square pipes can be used.
- Be sure to use the product within the allowable load.

Notes on ordering

- When using this product, hanging hardware is required. Please specify the type of hardware and order it together with the bracket.

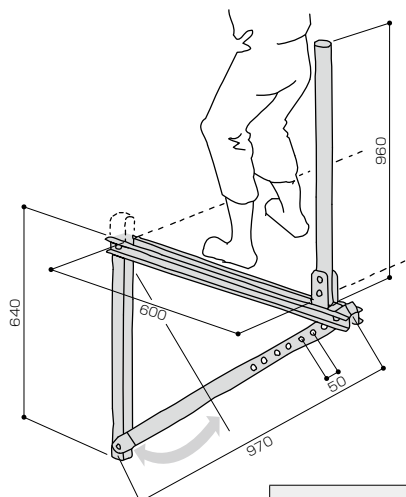
Adjustment angle correspondence table

Hole position	A	B	C	D	E	F	G	H	I
Angle (°)	0	6	12	18	23	28	34	39	65
Slope	Vertical	1:01	1:02	1:03	1:045	1:06	1:07	1:08	—

Slope Bracket II

Scaffolding bracket for slope

Product No. A30-0520



Features

- Applicable for any slope.
- Very speedy work as the product can be attached to the horizontal batten.
- The product can be folded up so that storage space and transportation cost can be reduced.
- Lightweight and easy to carry.
- Multiple applications and very economical.

Allowable load 0.98kN (100kgf)

Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Slope Bracket II	8.98	3	27	Case

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

Slope Bracket Hook

Hooking hardware for slope bracket I / II

Product No. A30-0530



◆Application

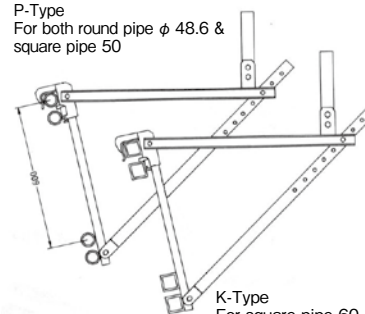
Attachable to Slope bracket I / II

Cautions

- Turn the lift prevention device to the fixed side, and allow 600mm or less for horizontal batten spacing.

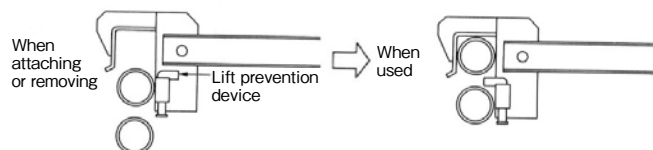
◆Specs

P-Type
For both round pipe ϕ 48.6 &
square pipe 50



K-Type
For square pipe 60

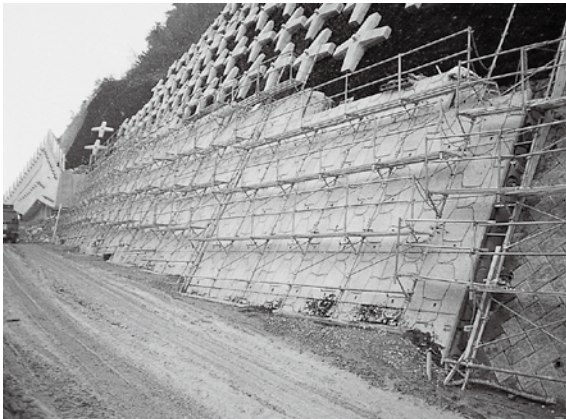
Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)
P-Type	0.92	15	14
K-Type	0.94	15	14



Slope Scaffolding

Proactive scaffolding for slope protection work

Product No. A30-0540



Scaffolding system for slope protection work. Scaffolding can be assembled easily according to the progress of work, and install handrails from the lower stage of work floor so that safety can be secured and workability is improved.

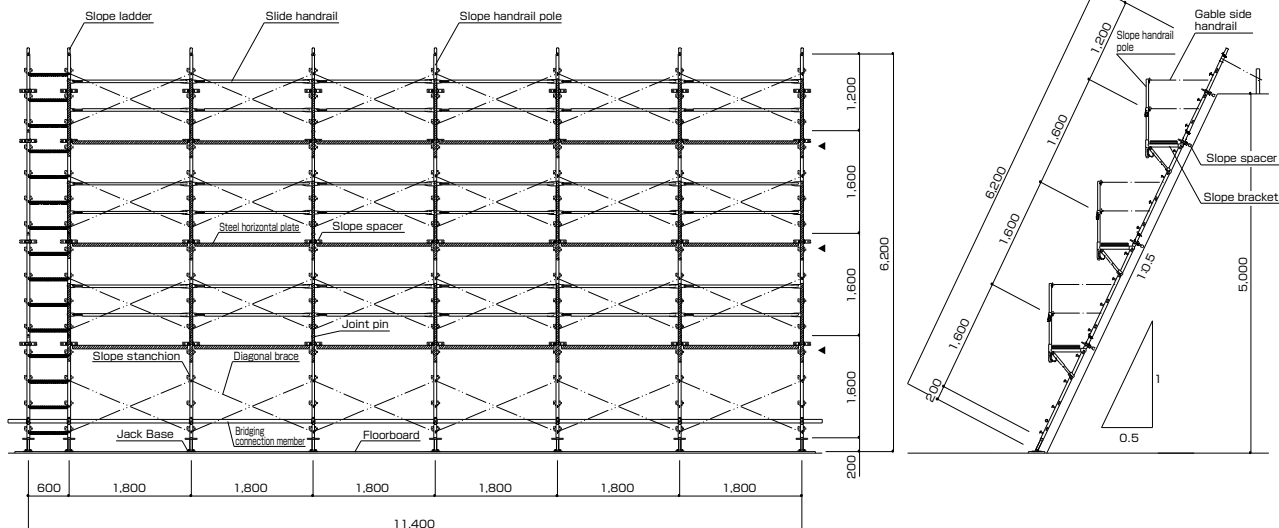
Features

- Handrails can be installed from the lower stage of a work floor.
- Applicable for 1:03~1:06 slope.
- Scaffolding and handrails are set up on the entire slope surface so that it improves work efficiency and safety.
- Can be used for repair work or joint finishing work for block or stone retaining walls.

Allowable load

1.47kN (150kgf)

◆ Shape and dimensions (standard diagram for 1:05 slope)



◆ Specs

Parts	Model	Weight (kg/pc)
Slope stanchion	P400	1.8
	P800	3.1
	P1200	4.4
	P1600	5.7
Slope ladder	H800	8.5
	H1200	12.9
	H1600	16.5
Slope bracket	B430	3.6
	B530	4.0
Slope spacer	Type A	2.0
	Type L	2.4

Parts	Model	Weight (kg/pc)
Slope handrail pole	H1100	2.4
Universal jack base	—	5.0
Slope brace	X1804	3.3
	X1808	3.8
Extendable handrail	1621	3.8
Steel horizontal plate	400 × 1800	16.2
	500 × 1800	14.4
Gable side handrail	S	2.0
	L	2.2

- Universal jack base
Applicable for 1:03~1:06 slope.
- Slope brace for slope poles
Fasten standard stanchions, ladder stanchions, adjusting stanchions for longitudinal slope, etc.
- Slope spacer
Maintain the gap between the retaining wall and the scaffolding at 10~20cm.
(The retaining wall is not damaged and joint finishing work is facilitated.)

- Slope handrail pole
Can be installed anywhere with 400mm spacing in the stanchion direction.
- Extendable handrail
Height can be adjusted for 3 stages.

Slope Scaffolding

Proactive scaffolding for slope protection work

Product No. A30-0540

◆ How to use

(The photos below are for information on assembly and they do not show an actual worksite.)



① Installation of slope stanchions



② Installation of horizontal steel plates

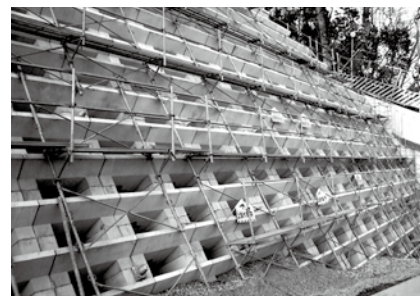


③ Installation of extendable handrails

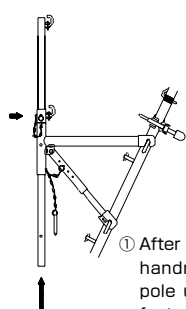


④ Slope stanchion joints

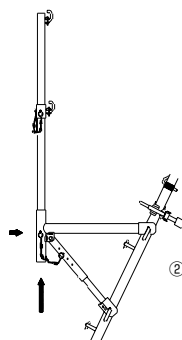
◆ Photos of usage examples



◆ How to install the handrail



① After installing an extendable handrail, press the handrail pole upward from below and fasten the lower handrail with a pin.

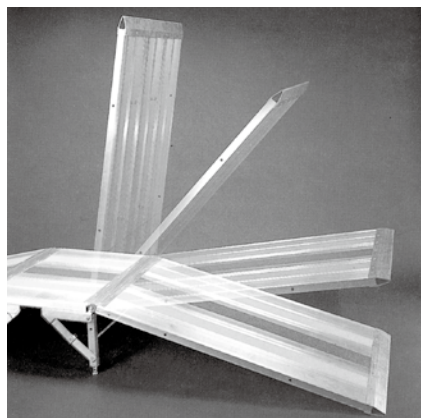


② Further press it upward from below and fasten the handrail pole with a pin.

Cable Protection Bridge

Aluminum bridge for protecting cables / pipes / tubes

Product No. A60-0010



At construction sites in a city or urban area, there are cases where a concrete force feed pipe crosses a sidewalk. This bridge secures safe passage for pedestrians and cyclists.

Features

- Lightweight and easy to assemble and disassemble. To set up the bridge, engage the pins of the horizontal plate with the hooks of the slope plate, and lower the plate.
- The use of a passage mat prevents slipping, ensuring safety even on rainy days.
- The level adjusting bolts absorb unevenness in the tread, providing stability.
- In case of a wide path, bridges can be installed continuously without gaps by using connection bands or tie wires, etc.

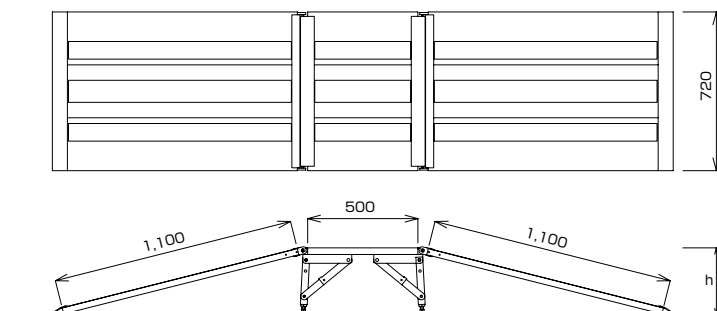
Allowable load	1.47kN (150kgf)
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Type	Type 30 and Type 20
Set	31kg
Horizontal member	11kg
Diagonal member	10kg

Size	h(mm)
Type 30	300 ~ 330
Type 20	200 ~ 230

* Type 20 cannot be folded up.

Shape & dimensions

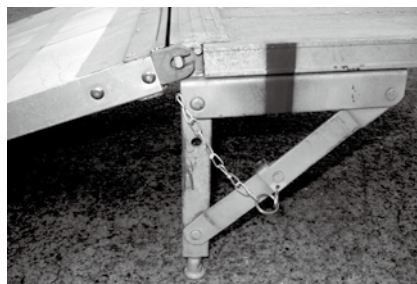


Cautions

- Never use this product as a passage for construction vehicles or haulage vehicles.
- When using this product in a slanted position, take positional shift prevention measures.
- To prevent tilting, be sure to fasten the diagonal member with an attaching pin.

Connection band
L=382mm packed quantity: 50

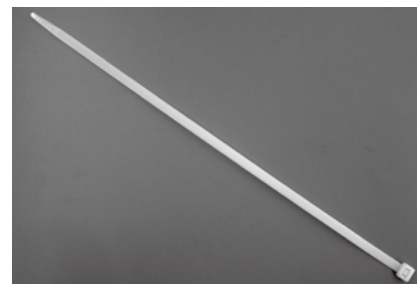
Leg part



Connection part



Option (sold item)



Examples of use



A
Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

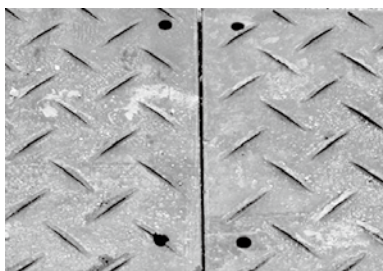
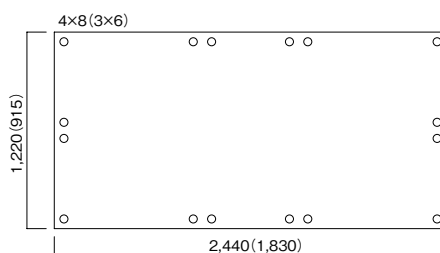
Floor Plate : Heavy Machinery

Product No. A60-0020

Polyethylene floor plate for heavy machinery



◆ Shape & dimensions



◆ Spec

Size	4 × 8	3 × 6
Material	100% polyethylene	
Dimensions (mm)	1220 × 2440	915 × 1830
Weight (kg)	39	22
Thickness (mm)	13	12.7
Maximum vehicle load (t)	60	
Hole diameter (mm)	25	
No. of holes	16	12

Features

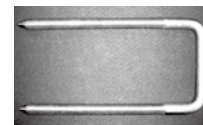
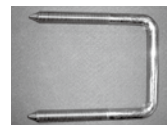
- Can be used for passage of vehicles such as dump trucks and caterpillar trucks.
- Both sides of the mat have no-slip cleats.

◆ Option

- Handgrip hardware



- Anchor L=150, 250



* Number of anchors used per mat (reference): 4

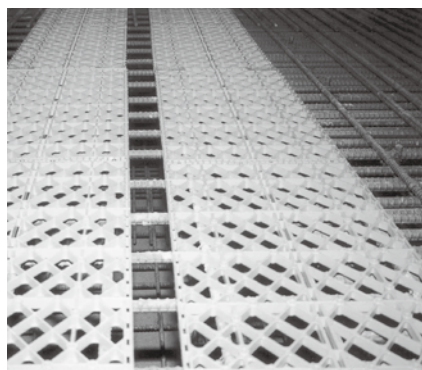
Cautions

- Do not use the product as a bridge.
- Do not use the product to bear a load that is applied at one point.
- Do not use the product on a slope.
- Please read the instruction manual when using the product.

 Floor Mat : Walkway

Light-weight polyolefin safety mat

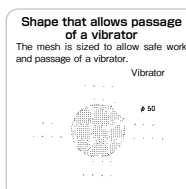
Product No.	A60-0030
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Product name	Weight (kg/pc)
Floor Mat (Orange)	4.5
Floor Mat (Blue)	4.5
Floor Mat (Green)	4.5

Features

- Recyclable material (polyolefin resin) is used.

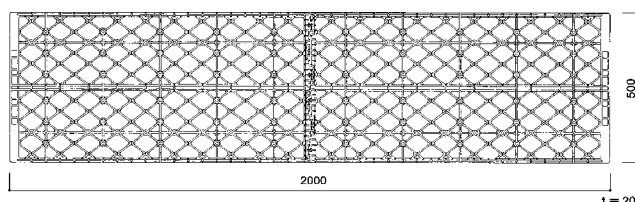


- Improved workability:
A lightweight mat with significantly improved workability for easy transport and installation. Further, its shape allows for easy maintenance.
- Improved safety:
Available in colors (orange, blue, green) so that the mat can be easily distinguished from reinforcing bars. Safety aisles are immediately recognized even at a dark construction site. The mat has a slip prevention shape by three-dimensional design.

Cautions

- After use, remove concrete splatter as soon as possible.
- Do not use a wire brush, etc., for washing the product.
- Stack the mats flat on a flat place for storage.
- This product is a temporary safety mat used on a slab reinforcing bar. Do not use it for any other purpose such as scaffolding.

◆ Size



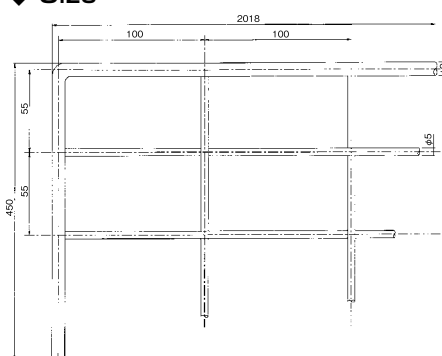
■ Floor Mat : Slab Rebar

Slip-proof safety mat for slab rebar

Product No.	A60-0040
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◆ Size



Product name	Weight (kg/pc)	Quantity (pc/bundle)	Weight (kg/bundle)	Packing	Remarks
Floor Mat	6.52	50	326	Secured with rope	—
Floor Mat Red	—	—	—	—	Production on order
Floor Mat Green	—	—	—	—	
Floor Mat Yellow	—	—	—	—	
Floor Mat Blue	—	—	—	—	

Features

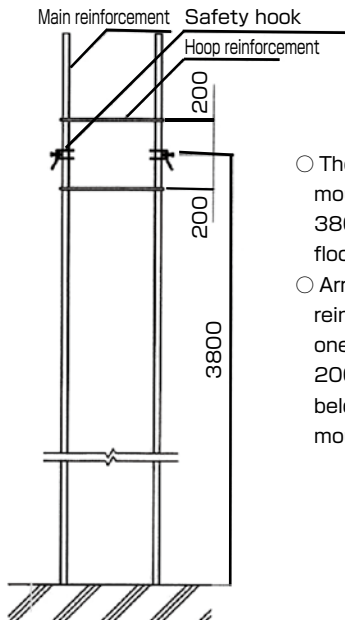
- Secures safety for work on slab reinforcing bars, when placing concrete, etc.
- Prevents binding wire of the slab reinforcing bar from being broken, and also prevents reinforcing bars from being disarranged or bent, by distributing loads of workers on slab reinforcing bars.
- Lightweight mats greatly improve placement, put away, transfer and storage workability.
- The crimped processing structure prevents shifting and slipping.
- Application of hot dip galvanizing and satin texture powder baked finish enhances slip prevention effects and safety (only colored mat).

Safety Hook : Column Work

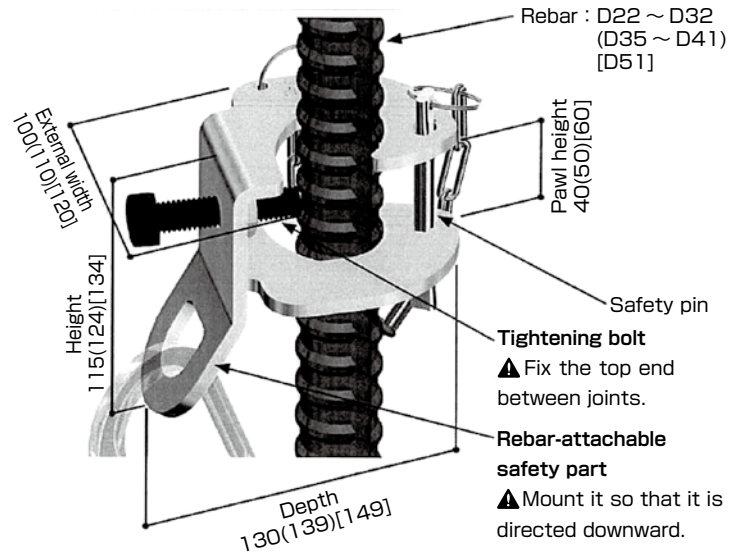
Product No. A80-0010

Safety hook for reinforced concrete column work

◆Mounting height



- The hardware mounting height is 3800mm from the floor as a reference.
- Arrange hoop reinforcement one by one within 200mm above and below the hardware mounting position.



◆Application

Rebar-attachable safety hook for RC independent column work
(Hoop reinforcement winding, form assembly work etc.)

◆How to mount to rebar



- ① Insert the main body into rebar as shown in the photo.
 - ② Turn the main body by 90 degrees.
 - ③ Fix it with the tightening bolts.
 - ④ Insert the safety pin from above, pass it through into the lower hole, and turn it until it does not turn.
- ▲ Check that the safety pin is not pulled when it is pulled upward.

◆Adaptable rebar diameter, packed quantity

Product	Color	Adaptable rebar diameter	Quantity (pc/bag)	Weight (kg/bag)	Packing
D22-D32	Gold (Colored chromate)	D22 ~ D32	20	16.8	PP bag
D35-D41	Silver (Gloss chromate)	D35 ~ D41	15	13.7	
D51 (Made-to-order)	Gold (Colored chromate)	D51	15	15.0	

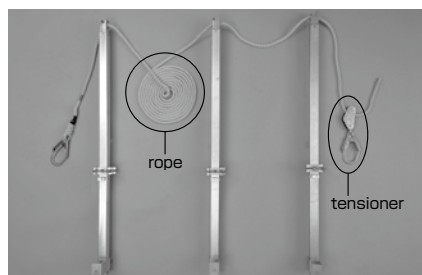
Cautions

- Tighten the bolts at 3.43kN·cm to 4.41kN·cm. (Approximate force that lifts a weight of 20kg by a ratchet with a length of 20cm)
- Make sure to mount with the hoop reinforcements bundled so as to provide sufficient stiffness to all main reinforcements of the column.
- Do not use this product if any crack, flaw, deformation or rust (welded part) is found.
- Do not use this product if a large force has been applied.
- Do not hang multiple hooks onto this product.
- Do not handle this product in a way that causes it to deform after removal or during storage.
- Do not use this product with a carrier cable for column support.
- Do not fix tightening bolts on the joints and ribs of the rebar.

Assembly Securing System

Proactive rope-tensioning system for scaffolding erection

Product No. A80-0020



[Weight 3.5kg/pc]

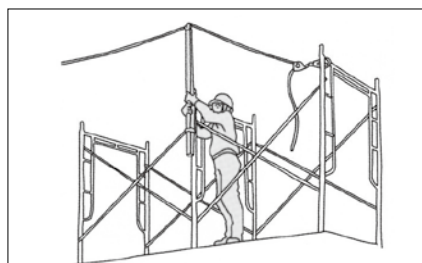
Features

- Enables proactive rope-tensioning
- Easy installation

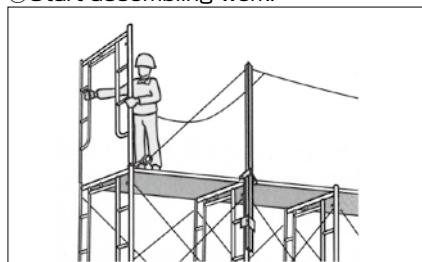
[Lower clamp adjusting range]
600mm from the upper surface of the scaffold frame to the stiffener

How to use

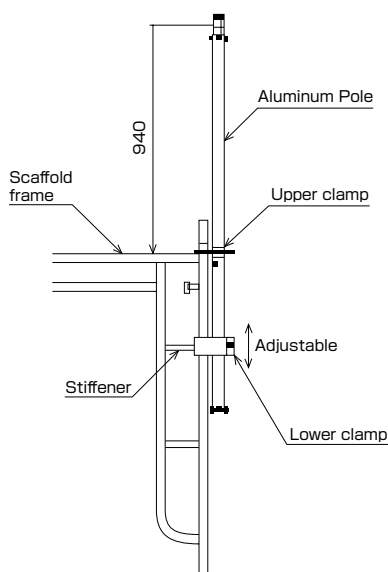
① Install the rope (replacement).



④ Start assembling work.



Shape & dimensions

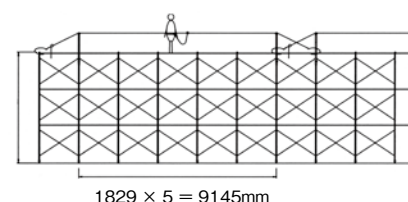


Installation method

This product must be used for the frame assembly of the fourth floor or above, where vertical distance of at least 3.8m can be secured.

* When using the product on the third floor for the frame assembly of the fourth floor:

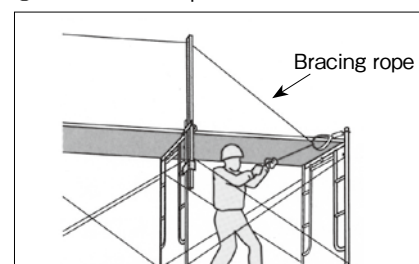
When the third floor height is 5.3m or more, or the fourth floor or above



② Install the aluminum pole (replacement).



③ Tension the rope.



Cautions

- Set the pole securely to the frame scaffolding pillar and stiffener.
- Do not use the aluminum pole, rope and tensioner once the falling impact is applied.
- Do not install the aluminum pole

and rope to the same scaffolding frame.

- Do not attach the safety hook to the bracing rope.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

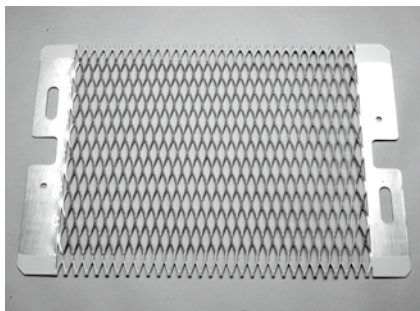
G

Civil Engineering

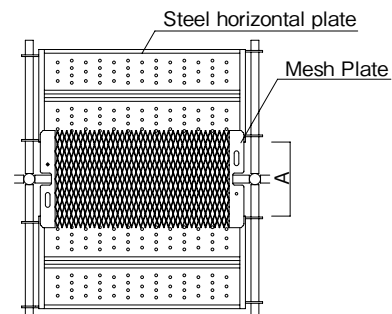
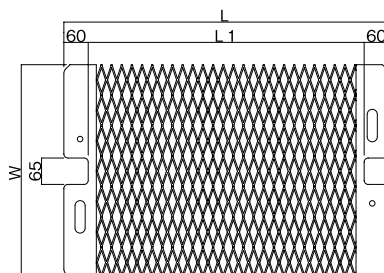
Mesh Plate

Mesh plate for scaffolding void

Product No. A80-0030



◆Shape & dimensions



Features

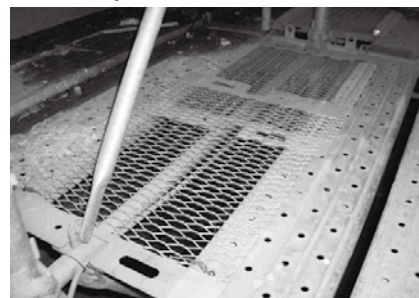
- By engaging the notch in the middle of the rib plate with the system support post, lateral shifting can be prevented.
- The resin-coated mesh edge is safe, preventing risk of injury during work.
- Since the rib plates and the mesh part are integrally molded, the mesh plate has no welded parts and has excellent durability. Also, it has round holes for connection and transport.

◆Specs

Size	68-80	98-110
Dimensions (W×L) (mm)	525×800	525×1100
Internal dimension (L1) (mm)	680	980
Weight (kg)	4.0	5.2

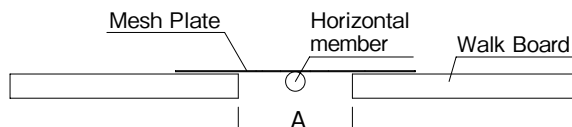
* Please see the internal dimension (L1) as a reference for the usage dimension.

◆Example of use



Cautions

- Use the product where the clearance dimension (A) is within 300mm.
- Place the product in the same direction as the scaffolding board.
- Fix the product with tie wire, etc., to prevent lifting.
- The product cannot be used where post spacing dimension is 900mm and brace attaching position is 680mm or less.

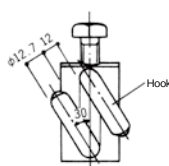
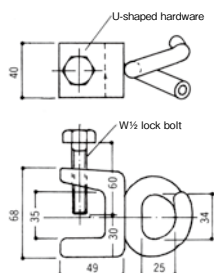


Safety Net Hook : Beam

Safety net hanging hook for H-beam

Product No. A80-0040

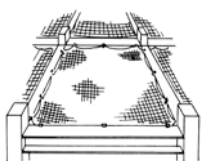
Size



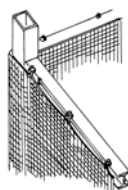
Allowable load
2.15kN (220kgf)

Work example

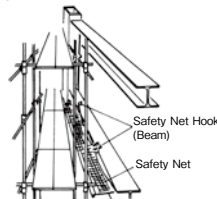
Suitable for protection of openings of not only steel structure but also SRC structure



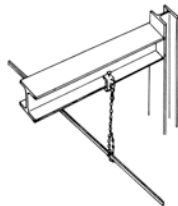
Hanging a vertical green net



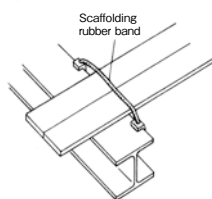
Spreading a net between scaffolding and wall



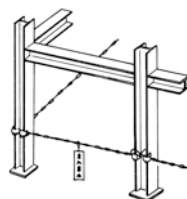
Hanging a temporary electric cable for construction equipment



Fastening a scaffolding board for preventing shifting



Putting a tiger rope around a steel frame structure



Features

- This is a hook type hanger which enables a net to be installed or removed with one touch operation.
- Since the "U-shaped hardware" is made of hot rolled steel with excellent toughness and durability, the hanger has excellent resistance against impacts.
- The hook is D-shaped, which helps prevent the safety net from falling off so that the hanger can be used even if it is mounted upside down.
- The clamp can be securely fastened to a steel frame because of the use of high tensile cup point bolts as lock bolts.
- Compact design, easy to carry and excellent storage property.

Cautions

- Tighten the bolt with a tightening torque of 3.43~4.41kN·cm (350~450kgf·cm).
- Mount Safety net hook at intervals of 2m or less.
- When hanging a safety net, do not wrap the net around the hook.
- Do not use the product once the falling impact is applied.
- Do not use the product under horizontal load.
- Be sure to use the product within the allowable load.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

■ Safety Net Hook : Insert

Safety net hanging hook for W1/2 insert

Product No.	A80-0050
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Features

- Easy installation with W1/2 insert concrete anchor.
- The screw is not loosened due to elastic effect of rubber packing so that the angle of the mounted hanger can be maintained.
- The use of a special bolt with rubber packing enhances the strength and degree of fixation.
- The structure surface is not damaged because of the use of rubber packing whose color is similar to concrete.

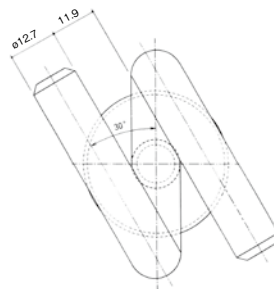
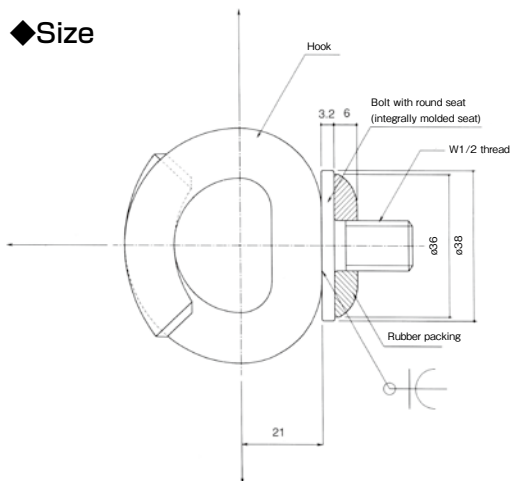


Allowable load	1.96kN (200kgf)
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Cautions

- Hold the rubber packing against the special bolt manually or with a tool such as podger bar, and rotate the hanger by approximately 180° or more after it touches the concrete to install it in the direction shown in the figure on the left.
- Do not use deformed rubber packing.
- Do not use the product under horizontal load.
- Install the product at intervals of 2m or less.
- As a rule, do not use the product which has been subjected to falling impact or is visibly deformed.
- Be sure to use the product within the allowable load.

◆Size

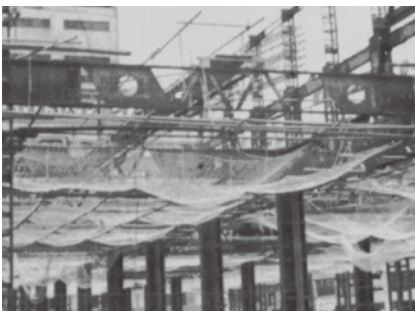


- * Tighten the hanger securely to install it in the above direction.

■ Safety Net : Horizontal

Horizontal safety net

Product No.	A80-0210
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Features

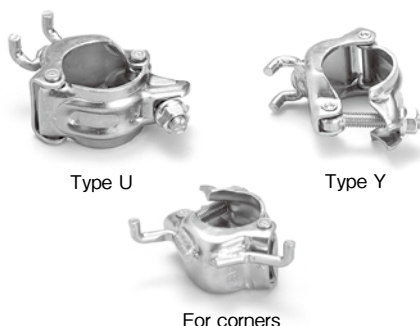
- Strong net with excellent restorability and safe against impact.
- Weather resistant, lightweight and easy to handle.

Material	Nylon
Thickness of net yarn	4mm without knot, with knot
Mesh size	10×10cm
Sling	Nylon diameter 12mm
Weight	Approximately 200g/m ²

Size	3×3m	4×4m	5×5m	6×6m
	7×7m	5×10m	7×10m	10×10m

Product No.	A80-0220
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Safety net hanging hook for steel pipe



Type U

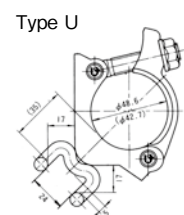
Type Y

For corners

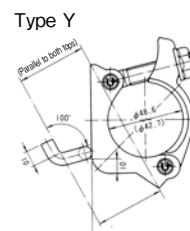
Features

- The tightening part always comes right in front, resulting in high work efficiency.
- By adjusting tension of the corner part, the sheet can be mounted neatly.
- Since the clamp has no sharp corners, damage to the sheet by wind is minimal.
- The nut has a special shape that protects the screw thread, and obstructive projections have been shortened.

◆Size



Type U

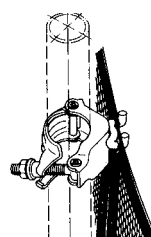


Type Y

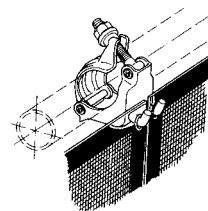
Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Type U	0.37	50	19	Case
Type Y	0.37	50	19	
For corners	—	—	—	—

◆How to use

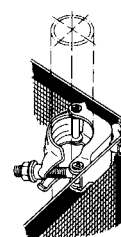
《Type U》
Flat mounting
for upright pipe



《Type Y》
Flat mounting for
horizontal pipe



《For corners》
Right-angle mounting
for upright pipe



Product No.	A80-0230
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Vertical safety net



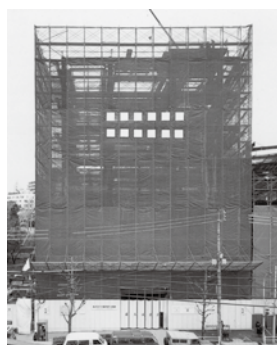
	Nylon Safety net : Vertical	Vynylon Safety net : Vertical
Material	Unitika nylon string	Unitika Vynylon string
Thickness of net yarn	210D/48 pieces	2000D/5 pieces
Mesh	25×25mm	25×25mm
Tension of net yarn	0.31kN (32kgf)	0.21kN (22kgf)
Green rope	6mm	6mm
Tension of green rope	7.35kN (750kgf)	7.35kN (750kgf)
Standard size	5.4×10mm	5.4×10mm

Features

- Safety measure by providing external building protection in high-place work.
- Prevents objects from flying by wind when using vertically.
- A wide area can be covered in a short time.

Product No.	A80-0240
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Fireproof safety net



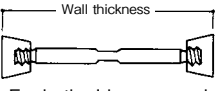
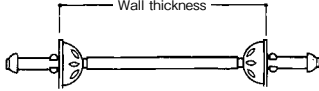
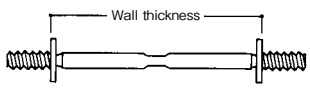
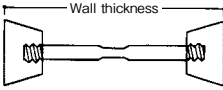
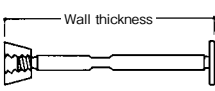
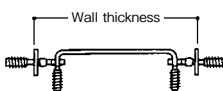
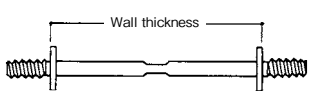
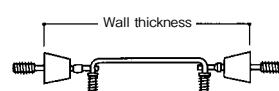
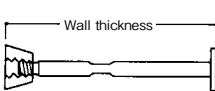
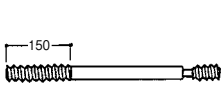
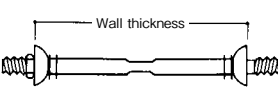
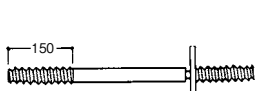
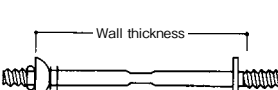
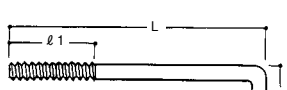
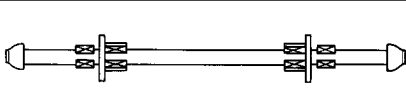
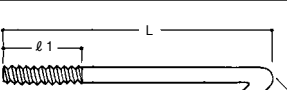
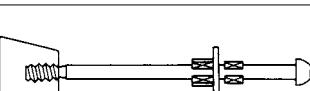
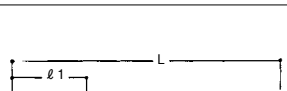
Features

- Sheet for construction work.
- Compatible with Disaster Prevention Standard established by Fire and Disaster Management Agency.
- Sheet to prevent paint scattering.

Product number	Size
#1005	1.8m×5.1m
#1003	
#2014	
#2054	
#2039	

Separator

Product No. B10-0010

Product	Shape	Thread diameter	Product	Shape	Thread diameter
Type B	 For both sides exposed	W5/16 W3/8	Snap Hat	 For both sides exposed	W5/16
Type C	 For both sides finishing	W5/16 W3/8	Type D	 For both sides exposed (for civil engineering)	W1/2
Type BC	 For one side exposed and the other side finishing	W5/16 W3/8	U-Shaped Type C (For Beam Work) (Made to order)	 For both sides finishing	W5/16 W3/8
Type H	 For both sides finishing	W5/16 W3/8	U-Shaped Type B (For Beam Work) (Made to order)	 For both sides exposed	W5/16 W3/8
Type BH	 For one side exposed and the other side finishing	W5/16 W3/8	Sheet Pile Type B (Made to order)	 150	W5/16
Hat (Anti-rotation)	 For both sides exposed	W5/16 W3/8	Sheet Pile Type C (Made to order)	 150	W3/8
Hat Type H (Anti-rotation)	 For one side exposed and the other side finishing	W5/16	Anchor (Made to order)	 L, l1, l2	W5/16 W3/8
Snap Type C	 For both sides finishing	W5/16	Hook (Made to order)	 L, l1, l2	W5/16 W3/8
Snap Type BC	 For one side exposed and the other side finishing	W5/16	Stud (Made to order)	 L, l1	W5/16 W3/8

When placing an order, please specify the wall thickness, L, l1, and l2, etc.

Made-To-Order is also available.

Cautions

- Please arrange a formwork construction plan in compliance with the allowable load.
- Install the product at right angle to the formwork.
- Be sure that form ties are not too tight or too loose.
- After the formwork assembly, do not step on the form ties and battens.
- Do Not purposely cut and weld the product.

Separator

Product No. B10-0010

Product		
Separator	B	W5/16
		W3/8
	C	W5/16
		W3/8
	BC	W5/16
		W3/8
	C (For Metalform)	W5/16
		W3/8
	BC (For Metalform)	W5/16
		W3/8
	B (S45C)	W3/8
	C (S45C)	W3/8
	BC (S45C)	W3/8
	F	W5/16
	H	W5/16
		W3/8
	H (Anti-rotation)	W5/16
		W3/8
	BH (Anti-rotation)	W5/16
		W3/8
	Hat (Anti-rotation)	W5/16
		W3/8
	Hat H (Anti-rotation)	W5/16
		W3/8
	Hat B (Anti-rotation)	W5/16
		W3/8
	Hat C (Anti-rotation)	W5/16
	Snap C	W5/16
	Snap C25	W5/16
	Snap BC	W5/16

Product		
	Hat / Snap	W5/16
	Hat / Snap 25	W5/16
	K (Anti-rotation)	W5/16
	D	W1/2
	D S45C	W1/2
	W5/8	W5/8
	W5/8 S45C	W5/8
U-shaped	B	W5/16
		W3/8
	C	W5/16
		W3/8
	BC	W5/16
		W3/8
Sheet Pile	B S=B-100 (Total Length)	W5/16
		W3/8
	B S=B-150 (Total Length)	W5/16
		W3/8
	C S=C-100 (Total Length)	W5/16
		W3/8
Anchor		W5/16
		W3/8
Hook		W5/16
		W3/8
S45C ※	B8	W5/16
	C8	W5/16
	BC8	W5/16

* When using Separator S45C, use Plastic Cone S45C and Form Tie S45C as well to prevent formwork collapse

◆Mechanical Characteristics of Various Separators

Type of separator	Designation	Effective Sectional area (mm ²)	Tensile breaking load kN (tf)	Allowable tensile load kN (tf)	Location of fracture
B (W5/16)	W5/16	34	20.0 (2.0)	14.0 (1.4)	Threaded portion of separator
C (W5/16)	W5/16	34	20.0 (2.0)	14.0 (1.4)	Threaded portion of separator
BC (W5/16)	W5/16	34	20.0 (2.0)	14.0 (1.4)	Threaded portion of separator
S45C (W5/16)	W5/16	34	30.0 (3.0)	21.0 (2.1)	Threaded portion of separator or cone
B (W3/8)	W3/8	50.3	30.0 (3.0)	21.0 (2.1)	Threaded portion of separator or cone
D (W1/2)	W1/2	89.4	40.0 (4.0)	28.0 (2.8)	Threaded portion of separator or cone
S45C (W3/8)	S45C	50.3	45.0 (4.5)	31.0 (3.1)	Threaded portion of S45C separator

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

Cone

Product No. B10-0110

Product	Thread diameter	Board thickness (mm)	Shape	D1 (mm)	D2 (mm)	L1 (mm)	L2 (mm)	
Plastic Cone Metal	W5/16 W3/8	Metal		24	30	25	15	
Plastic Cone 12		12					25	
Plastic Cone 16		16					29	
Plastic Cone 24		24					36	
Plastic Cone Beam		—					—	
Plastic Cone Hat		12					25	
Plastic Cone S45C *1	W5/16	12		24	30	25	25	
Plastic Cone Snap	W5/16	12		24	30	25	32	
Plastic Cone D	W1/2	—		32	40	40	—	
Tapered Multi-Cone * See the figure on page 37	W5/16 W3/8	12 Metal		23	—	—		
Tapered Pastic Cone * See the figure on page 37	W5/16 W3/8 W1/2	—		24	—	—		
Metal Cone	W1/2	—		18	25	40		
	W5/8			20	30	50		
Resin Cone Z	W5/16 W3/8 W1/2	Metal 12 16 24		AXIS			Thread diameter	L (mm)
Resin Cone T					For metal	W5/16 W3/8	Total length: 29	
Resin Cone A	W5/16 W3/8 W1/2 W5/8				For 12		Total length: 37	
					For 16		Total length: 40	
Tapared Resin Cone ZD * See the figure on page 37	W1/2	—			For 24		Total length: 48	
					Snap axis			

Product	Thread diameter	Board thickness (mm)	Shape	D1	D2	L1	L2		Covering depth (mm)
							Metal	12	
Plastic cone S 25	W5/16 W3/8	Metal 12		24	35	40	15	25	25

Product	Thread diameter	Board thickness (mm)	Shape	D1	D2	L1	L2		Covering depth (mm)
							Metal	12	
Plastic Cone 50	W5/16 W3/8	Metal 12		24	38	50	15	24	35
Plastic Cone 65						65	16	25	50
Plastic Cone 85						85	15	24	70
Plastic Cone 70D	W1/2	—		32	50	70	—		50
Plastic Cone 90D						90			70

*1 When using Separator S45C, use Plastic Cone S45C and Form Tie S45C as well to prevent formwork collapse

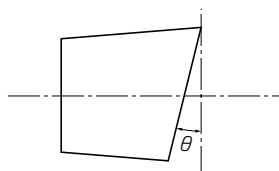
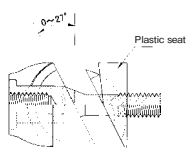
Product	Quantity (pc/case)	Packing (kg/case)	Packing
Plastic cone Metal	8	500	18
	9	500	18
Plastic Cone 12	8	500	19
	9	500	20
Plastic Cone 16	8	500	20
	9	500	21
Plastic Cone 24	8	500	22
	9	500	23
Plastic Cone Snap	8	500	22
Plastic Cone Snap 25	8	—	—
Plastic Cone Beam	8	500	14
	9	500	13
Plastic Cone D		300	24
Tapered Plastic Cone Metal 8	0.1	—	—
	0.2	250	11
	0.3	250	11
	0.4	250	11
	0.5	250	11
	0.6	—	—
	0.7	—	—
	0.8	—	—
	0.9	—	—
	1.0	200	10
Tapered Plastic Cone Metal 9	0.1	250	11
	0.2	250	11
	0.3	250	11
	0.4	250	11
	0.5	250	11
	0.6	—	—
	0.7	—	—
	0.8	—	—
	0.9	—	—
	1.0	200	10
Tapered Plastic Cone 12-8	0.1	250	12
	0.2	250	12
	0.3	250	12
	0.4	250	11
	0.5	250	12
	0.6	—	—
	0.7	—	—
	0.8	—	—
	0.9	—	—
	1.0	200	11

Salt-proof Plastic Cone

Product	Quantity (pc/case)	Packing (kg/case)	Packing
Plastic Cone S25 Metal	8	—	—
	9	—	—
Plastic Cone S25 12	8	200	9
	9	200	9

Product	Quantity (pc/case)	Weight (kg/case)	Packing
Plastic Cone S45C	500	19	Case

Adjustable angle of tapered multi-cone



Product	Quantity (pc/case)	Packing (kg/case)	Packing
Tapered Plastic Cone 12-9	0.1	250	12
	0.2	250	12
	0.3	250	12
	0.4	250	12
	0.5	250	12
	0.6	—	—
	0.7	—	—
	0.8	—	—
	0.9	—	—
	1.0	200	11
Tapered Plastic Cone D	0.1	—	—
	0.2	200	18
	0.3	200	18
	0.4	200	18
	0.5	100	9
	0.6	—	—
Metal Cone	D	200	13
	5/8	200	25
Resin Cone Z	8	500	11
	9	500	10
	D	300	15
Resin Cone T	8	500	11
	9	500	11
	D	300	15
Resin Cone A	8	500	11
	9	500	13
	D	300	15
	5/8	200	22
Tapered Resin Cone ZD	0.25	300	14
	0.50	300	14
	0.75	300	14
	1.00	300	14
Axis Metal	8	500	4
	9	500	6
Axis 12	8	500	6
	9	500	8
Axis 16	8	300	4
	9	300	5
Axis 24	8	300	4
	9	300	6
Axis Metal with Stopper	8	—	—
	9	500	6
Axis Snap	8	—	—

Salt-proof Plastic Cone

Product	Quantity (pc/case)	Packing (kg/case)	Packing
Plastic Cone 50 Metal	8	—	—
	9	—	—
Plastic Cone 50 12	8	250	13
	9	250	14
Plastic Cone 65 Metal	8	—	—
	9	—	—
Plastic Cone 65 12	8	200	15
	9	200	15
Plastic Cone 85 Metal	8	—	—
	9	—	—
Plastic Cone 85 12	8	150	13
	9	150	14
Plastic Cone 70 D	—	—	—
Plastic Cone 90 D	—	—	—

Angle for Taped Plastic Cone

● Different angles are also available and will be made of wood

Angle (θ)	6°	11°	17°	22°	27°	31°	35°	39°	42°	45°
Designation	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Color	Navy	Brown	White	Green	Yellow	Blue	Red	Black	Pink	Orange

A Temporary Construction

B Concrete Formwork

C Rebar Work

G Civil Engineering

Sealing Cone : All-In-One

Adhesive-integrated mortar cone for sealing tie holes

Product No. B10-0210

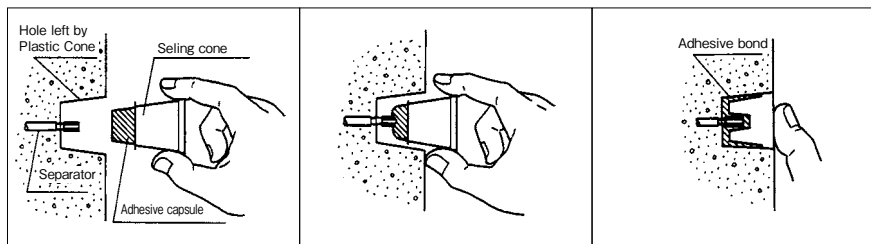


Product	Quantity (pc/case)	Weight (kg/case)	Packing
FLAT	100×5	13	Case
DENT	100×5	12	Case

Features

- All-In-One sealing cone (cone & adhesive)
- Maintains an appearance of concrete surface.
- No mortar-mixing, plasterwork, and skills required.
- Special adhesive enables long-lasting protection against wind and rain

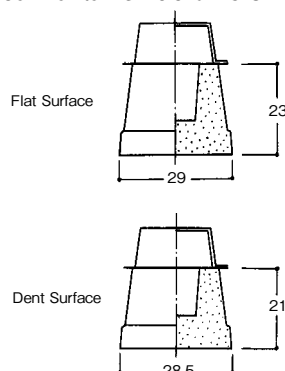
Working method



1. Push the cone till separator breaks the capsule
(Make sure not to push the cone till the end at this moment)
2. Rotate the cone two times in the same direction to spread the adhesive equally all around the hole.
3. Push the cone till it stops.

Size

Common to W5/16 and W3/8



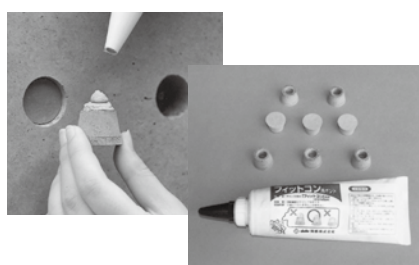
Cautions

- If the surface is wet, do not use the product, but instead, apply Mortar Cone and Mortar Cone Bond. (P39)
- Avoid excessive tightening of form tie which cause deformation of plastic cones and holes.
- Be sure to remove and clean aggregates left in the holes.
- Do not use the product when water leakage is found.
- Be sure to cure after the installation.
- Check adhesive hardening before surface-plasterwork.
- Minimum usable temperature : 5°C
- After opening the package, use the product as soon as possible.

Sealing Cone + Tube Bond

Adhesive-applied mortar cone for sealing tie holes

Product No. B10-0220



Type	Quantity (pc/case)	Package (kg/case)	Packing
Dent	500	11.0	Case
Flat	500	12.0	Case

Bond for Sealing Cone

(Adhesive) Curing days

Curing temperature	Curing days
20°C	3~5 days
5°C	7~10 days

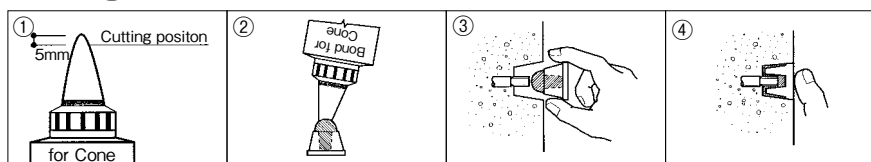
Adhesive force

When dried	257N/cm ² (26.3kgf/cm ²)
------------	---

Features

- Easy installation.
- Long-lasting protection against wind and rain.

Working method



1. Remove the outer cap of the adhesive bond, and cut off about 5mm from the nozzle tip.
2. Squeeze as much bond as shown in the figure.
3. Push the cone before the bond drips.
4. Push the cone till it stops.

Size

Type	Type and Dimension	
	Dent Surface	Flat Surface
Common to W5/16 and W3/8		

Cautions

- Do not use the product when concrete surface is wet.
- Be sure to remove and clean aggregates left in the holes.
- Avoid excessive tightening of form tie which cause deformation of plastic cones and holes.
- Minimum usable temperature : 5°C
- Be sure to cure after the installation, and do not give impact or vibration.
- Check adhesive hardening before surface-plasterwork.
- Be sure to tighten the outer cap to preserve the bond after cutting the nozzle.

Mortar Cone

Sealing mortar cone (cone only)

Product No. B10-0230



For salt erosion



For general purpose

Product	Quantity (pc/case)	Package (kg/case)	Packing
Mortar Cone Flat	500	10	Case
Mortar Cone Dent	500	9	Case
Mortar Cone 50	200	16	Case
Mortar Cone 65	150	12	Case
Mortar Cone 85	100	9	Case
Mortar Cone 70D	100	10	Case
Mortar Cone 90D	100	20	Case

Features

- High strength mortar cone with reduced permeability.
- Long-lasting protection against wind and rain, and prevents efflorescence

Cone Bond

Two-component adhesive bond for mortar cone

Product No. B10-0240



Product	Application	Weight (kg/case)
Cone Bond R (White)	Main agent	1
Cone Bond H (Dark green)	Hardening agent	1

Features

- Two-component type epoxy resin bond enables an excellent water-stop function.
- Can be diluted with water to form a putty like consistency with excellent workability.
- Hardens quickly, and adhesion force will be 0.98kN/cone (100kgf/cone) or more.
- Adheres and hardens, even when the holes and concrete surface are wet.
- Color becomes gray after mixing.

◆Necessary amount of Cone Bond (reference)

	Mortar Cone					
	40	50	65	85	70D	90D
Necessary amount per cone (g)	7	8	8	10	12	12
No. of cones installed per 2kg (main agent + hardening agent)	230	200	200	160	130	130

○Mixing ratio (mass ratio)

Main agent (R): hardening agent (H) = 1:1

Cautions

- When working in a closed area for a long time, pay sufficient attention to ventilation.
- Wash empty cans, tools, etc., after use. Once the bond is hardened, it cannot be removed.
- Be sure to avoid direct sunlight when storing.
- Un-opened bond can be stored for up to approximately 1 year.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

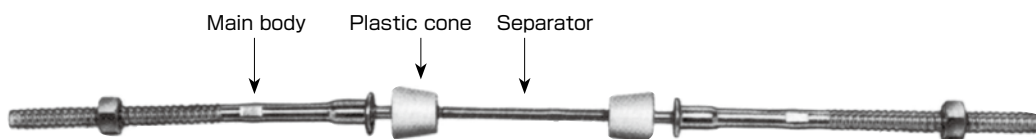
G

Civil Engineering

Form Tie

Product No. B10-0310

Form Tie B Type



Form Tie BC Type



Form Tie C Type



Form Tie D Type



	Product	Designation	Shape	Dimensions (mm)		
				L	ℓ_1	ℓ_2
Form Tie	C	C-150		150	95	—
		C-180		180	125	—
		C-210		210	120	—
		C-250		250	145	—
	D	D-250		250	120	85
		D-300		300	120	85
		D-360		360	120	85
	Ivy	IVY-C-150		150	95	
		IVY-C-180		180	125	
		IVY-C-210		210	120	
		IVY-C-250		250	145	
	Ivy D	IVY-D-250		250	120	85
		IVY-D-300		300	120	85
		IVY-D-360		360	120	85
	F	F-185		185	70	—
		F-220		220	90	—
	K	K3L		220	133	60
		K2L		160	73	60
		K2P		140	63	48

Product				Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Form Tie	C	150	W5/16	0.15	200	29	Case
			W3/8	0.14	200	28	Case
		180	W5/16	0.17	150	25	Case
			W3/8	0.17	150	25	Case
		210	W5/16	0.19	150	29	Case
			W3/8	0.19	150	29	Case
		250	W5/16	0.23	150	34	Case
			W3/8	0.22	100	22	Case
	D	250	W1/2	0.21	100	21	Case
		300	W1/2	0.25	100	25	Case
		360	W1/2	0.3	100	30	Case
	K	K3L	W5/16	0.18	150	27	Case
			W3/8	0.18	150	26	Case
		K2L	W5/16	0.14	200	27	Case
			W3/8	0.13	200	26	Case
		K2P	W5/16	0.08	200	24	Case
			W3/8	0.11	200	23	Case
Ivy Form Tie	C	150	W5/16	0.15	200	31	Case
			W3/8	0.15	200	30	Case
		180	W5/16	0.18	150	26	Case
			W3/8	0.18	150	26	Case
		210	W5/16	0.2	150	30	Case
			W3/8	0.19	150	29	Case
		250	W5/16	0.23	100	23	Case
			W3/8	0.23	100	23	Case
	D	250	W1/2	0.22	100	22	Case
		300	W1/2	0.26	100	26	Case
		360	W1/2	0.31	100	31	Case
Form Tie Type F	Main body	185	W5/16	0.18	100	18	Case
			W3/8	—	—	—	Case
		220	W3/8	—	—	—	Case
	Bolt for type F	185	W5/16	0.08	200	16	Case
			W3/8	—	—	—	Case
		220	W3/8	—	—	—	Case

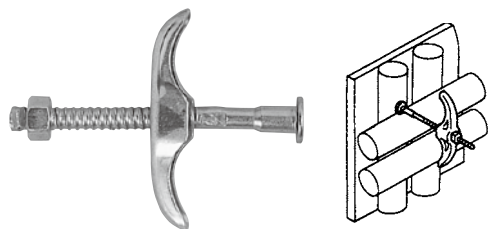
◆Number of form ties to be used (No./m²)

Type of Separators	Concrete side pressure					
	19.6kN/m ² (2tf/m ²)	29.4kN/m ² (3tf/m ²)	39.2kN/m ² (4tf/m ²)	49.0kN/m ² (5tf/m ²)	58.8kN/m ² (6tf/m ²)	68.6kN/m ² (7tf/m ²)
Separator W5/16	1.42	2.14	2.85	3.57	4.28	5.00
Separator W5/16 S45C	0.95	1.42	1.90	2.38	2.85	3.33
Separator W3/8	0.95	1.42	1.90	2.38	2.85	3.33
Separator W1/2	0.71	1.07	1.42	1.78	2.14	3.33
Separator W3/8 S45C	0.64	0.96	1.29	1.61	1.93	2.25

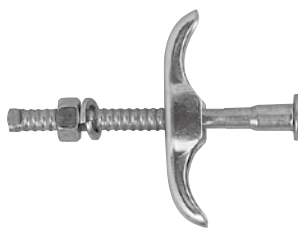
Form Tie with 3-Shaped Rib

Product No. B10-0320

Ivy Form Tie with 3-shaped Rib



Ivy Form Tie with 3-shaped Rib + Washer



Form Tie S45C with 3-shaped Rib S45C

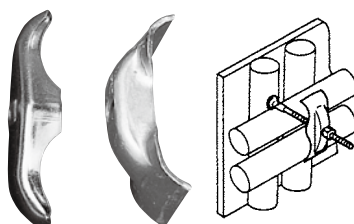


Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
Ivy Form Tie with 3-shaped Rib 8 – 150	100	22	PP bag
Ivy Form Tie with 3-shaped Rib 9 – 150	100	21	PP bag
Ivy Form Tie with 3-shaped Rib + SW 8 – 150	100	22	PP bag
Ivy Form Tie with 3-shaped Rib + SW 9 – 150	100	22	PP bag
Form Tie S45C with 3-shaped Rib S45C	100	22	PP bag

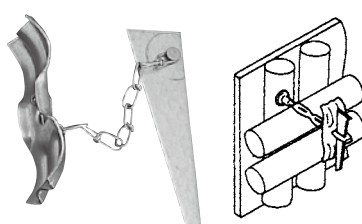
3-Shaped Rib

Product No. B10-0330

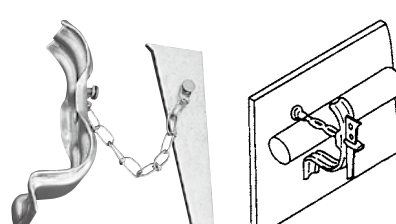
3-shaped Rib / 3-shaped Rib D



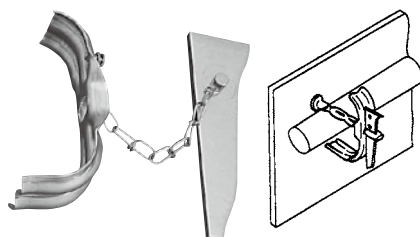
KP Rib



KP Rib (SW)



KP Rib H



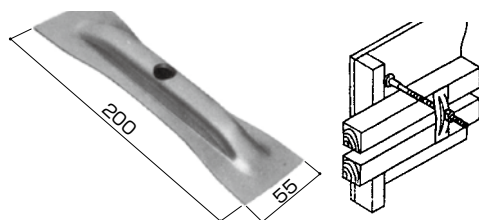
Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
3-shaped Rib	200	15	PP bag
3-shaped Rib D	150	24	Jute bag
KP Rib	100	19	PP bag
KP Rib (SW)	—	—	—
KP Rib H	—	—	—

* KP Rib (SW) is a made-to-order product.

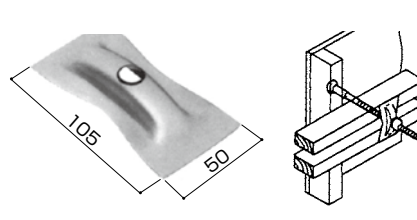
Flat Rib

Product No. B10-0340

Flat Rib A



Flat Rib B

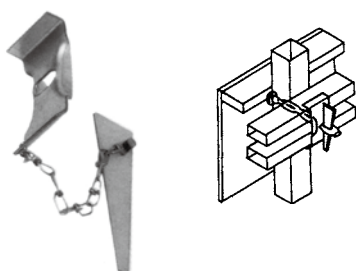


Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
Flat Rib A	100	27	Jute bag
Flat Rib B	150	19	Jute bag

Flat Rib with Wedge

Product No. B10-0350

KL Rib

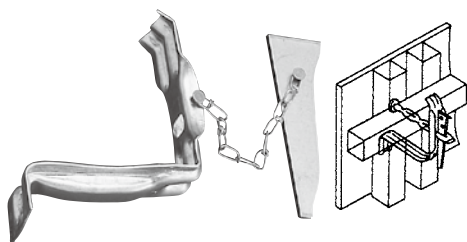


Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
KL Rib	—	—	—

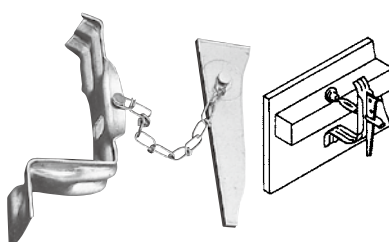
Flat Rib with Wedge

Product No. B10-0360

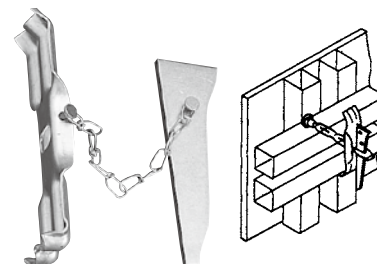
KK Rib Type I 60, 50



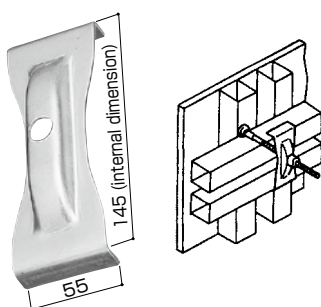
KK Rib Type I S 60, 50



KK Rib 60, 50



Flat Rib for Square Pipe 60



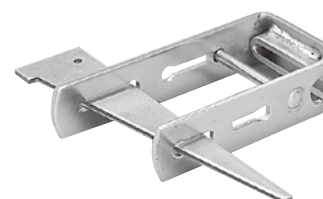
Flat Rib for aluminum square pipe 50



Ivy Form Tie 180 with Flat Rib for aluminum square pipe 50



Snap Rib SU



Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
KK Rib Type I 60	50	20	PP bag
KK Rib Type I 50	50	20	PP bag
KK Rib Type I S60	50	18	PP bag
KK Rib Type I S50	50	17	PP bag
KK Rib 60, 50	100	27	PP bag
Flat Rib for square pipe 60	100	26	PP bag
Flat Rib for aluminum square pipe 50	100	9	PP bag
Ivy Form Tie 180 with Flat Rib for aluminum square pipe	50	13	PP bag
K Flat Rib S45C 5/8	50	24	PP bag
Snap Rib SU60	40	30	PP bag

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

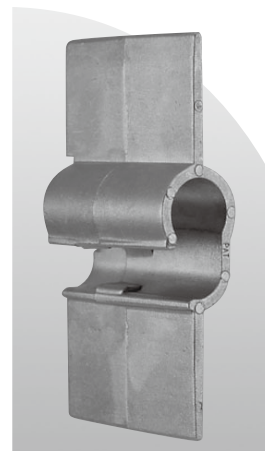
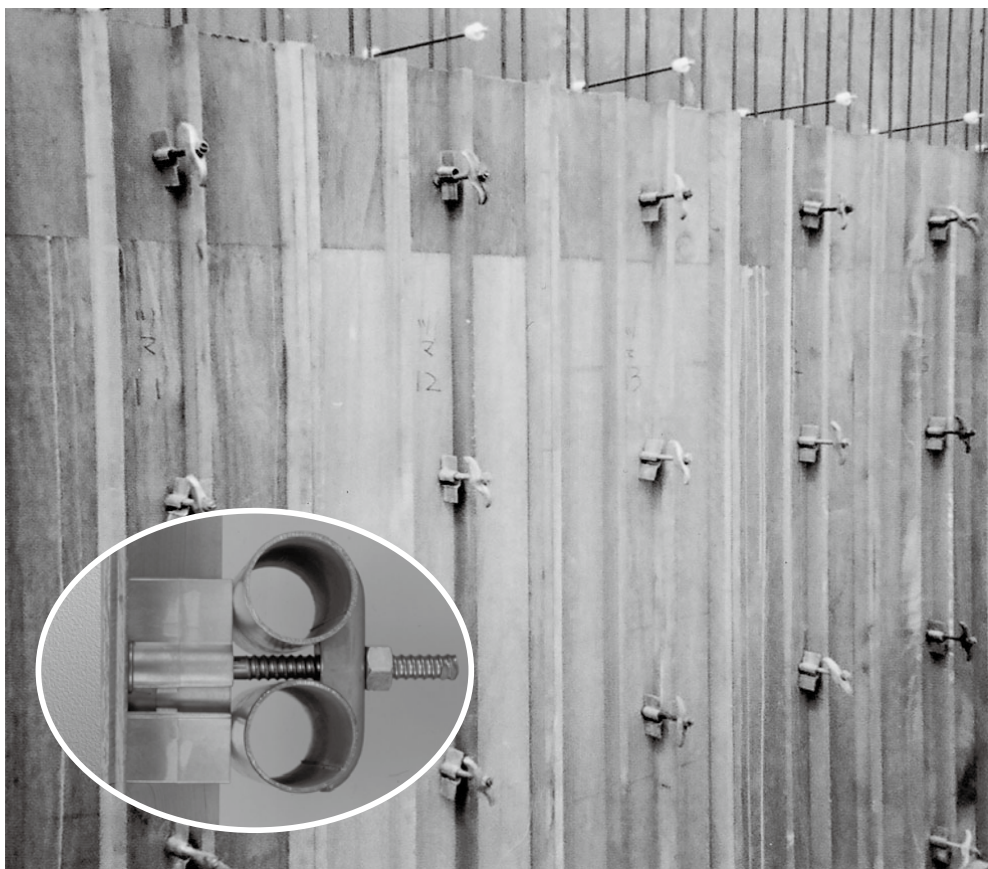
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Civil Engineering

Overtightening Restrainer

Restraint hardware for form tie overtightening

Product No. B10-0410



◆Features

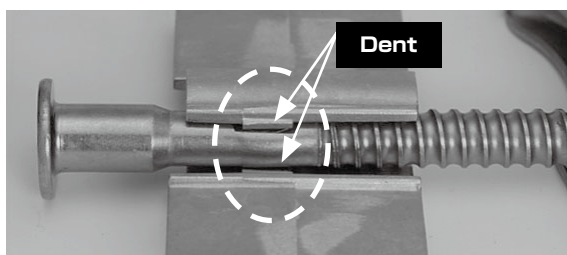
- Prevents overtightening of Form Ties tightened with an electric tool.
- Detachable at any time.
- Lightweight and highly durable.

◆Package & quantity

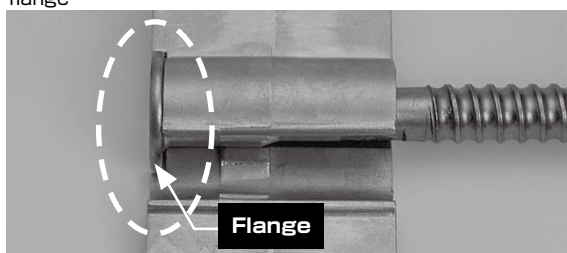
Product	Quantity (pc/case)	Weight (kg/case)	Packing
Overtightening Restrainer	200	11	Case

◆Installation

① Slide Form Tie and rotate 1/4



② Move Form Tie till Overtightening Restrainer reaches the flange



◆Setting example



Cautions

- The product is designed for Okabe Form Tie, and the function may not be as effective when used with other form tie.
- The applicable pipe size for this product is $\phi 48.6$.
- Do not use this product if deformation is found.
- Do not use this product for any purpose other than its intended purpose.

Form Tie Spanner

Product No. B10-0420

Tightening spanner for form tie

Form Tie Spanner 8
(W5/16)



Form Tie Spanner 9
(W3/8)

Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Form Tie Spanner 8	0.18	120	22	Case
Form Tie Spanner 9	0.18	120	21	Case

A

Temporary
Construction

B

Concrete
Formwork

C

Rebar Work

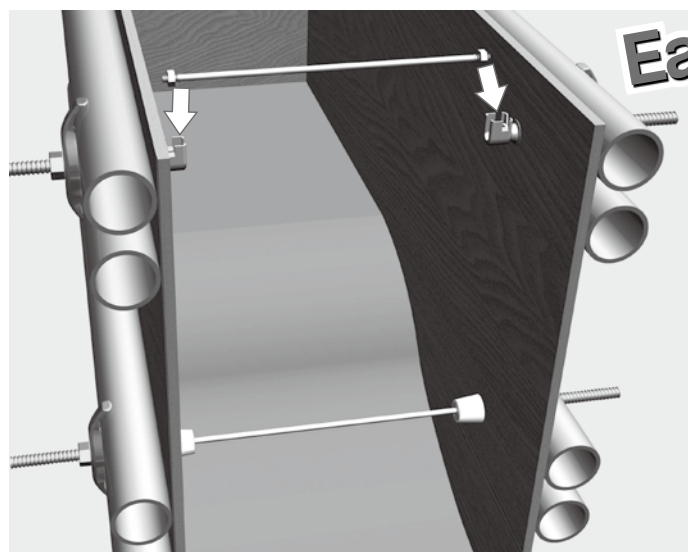
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Civil
Engineering

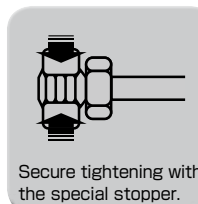
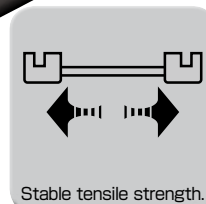
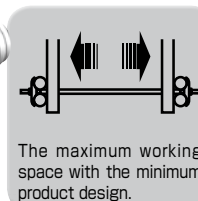
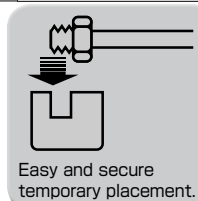
Separator Joint Pocket

Joint pocket for post-installation of beam work separator

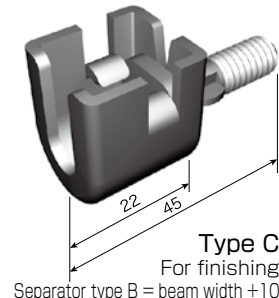
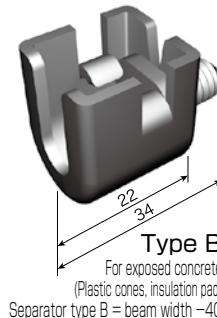
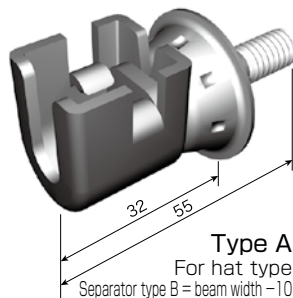
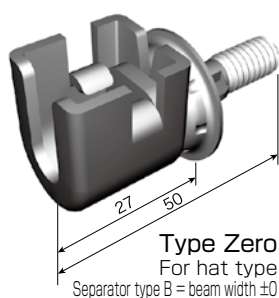
Product No. B10-0510



Easy and secure installation!!



◆Product specification ● Applicable Separator sizes: W5/16 ● Allowable tensile load: 7.35kN (750kgf)



◆Calculation method

Basic formula: Beam width ± adjustment dimension = Separator to be used

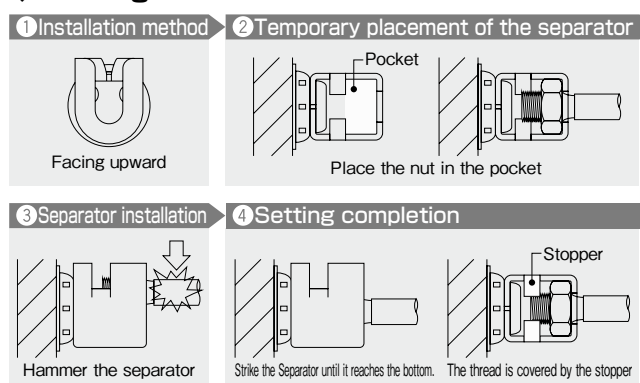
● Adjustment dimension chart (mm)

		Right side	Left side	Type Zero For hat type	Type A For hat type	Type B For exposed concrete (Plastic cones, insulation pad)	Type C For finishing
Type Zero For hat type		0	-5	-20	+5		
Type A For hat type		-5	-10	-25	0		
Type B For exposed concrete (Plastic cones, insulation pad)		-20	-25	-40	-15		
Type C For finishing		+5	0	-15	+10		

● Basic formula Example: Beam width of 500mm/Separator to be used: Type B

Type		Beam width	Adjustment dimension	Calculation formula	Separator to be used
Right side	Left side	(mm)	(mm)	(mm)	(Order)
Type Zero	Type Zero	500	±0	500±0=500	B-500
Type Zero	Type B	500	-20	500-20=480	B-480
Type A	Type A	500	-10	500-10=490	B-490
Type B	Type B	500	-40	500-40=460	B-460
Type C	Type C	500	+10	500+10=510	B-510

◆Working method



◆Quantity

Product	Quantity (pc/case)	Weight (kg/case)	Packing
Separator Joint Pocket Type Zero	250 (including nuts)	12	Case
Separator Joint Pocket Type A	250 (including nuts)	13	Case
Separator Joint Pocket Type B	250 (including nuts)	10	Case
Separator Joint Pocket Type C	250 (including nuts)	11	Case

Cautions

- Install the product with the opening face upward.
- Tighten form ties and fasten the product securely.
- Do not hammer the main body.
- Make sure that the thread of separator has passed the stopper (④).
- Do not deform the main body of the

hardware. (This will cause a deterioration of the stopper function and strength.)

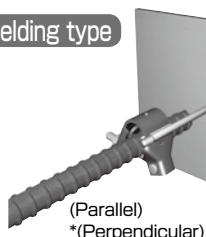
Separator-Rebar Joint

Joint hardware for separator & rebar

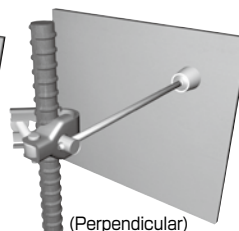
Product No. B10-0520

*Firmly grips the reinforcing bar
Easy installation*

Welding type



Non-welding type



Improved concrete filling property

* In case of the perpendicular direction, avoid the notch side. (See precautions.)

Product specification

Product	Type S	Type SW	Type M	Type MW	Type LW
Applicable reinforcing bar diameter	D13~D16(D10)	D13~D16 (D10)	D19~D29	D19~D29	D32~D38
Separator size	W5/16 · W3/8	—	W5/16 · W3/8	—	—
Product shape					
Tightening torque kN·cm (kgf·cm)	1.96 (200)				
Allowable load kN (kgf)	Parallel direction	4.90 (500)	—	4.90 (500)	—
	Perpendicular direction	2.94 (300)	—	—	—

Installation method

① Set the product to a rebar and tighten the nut with a ratchet.(Tightening torque: Approximately 20N·m)

S size M size

② Screw a Separator into the nut for connecting the Separator, and adjust the in-and-out dimension of Separator against the wall thickness.

(Installation)
Separator-Rebar Joint Separator
Parallel direction Perpendicular direction

● The allowable load for welding type is not described as it depends on the welders' skill.

● When using Separator-Rebar Joint S with D10, use it in the allowable load of 2.94kN or less.

Application

- Foundation formwork, pressure plate formwork
- Slab outer wall of box culvert, etc.

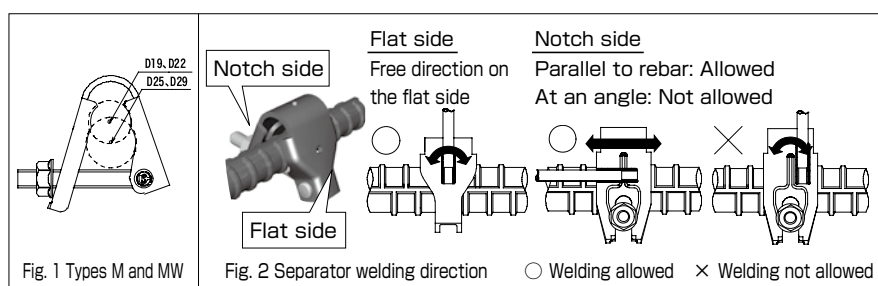
Product	Applicable rebar diameter	Separator size	Weight (kg/pc)	Weight (kg/case)	Quantity (pc/case)	Packing
Type S8	D13 · D16 (D10)	W5/16	0.164	16.4	100	Case
Type S9		W3/8	0.162	16.2	100	Case
Type SW		—	0.146	14.6	100	Case
Type M8	D19~D29	W5/16	0.239	12.0	50	Case
Type M9		W3/8	0.237	11.9	50	Case
Type MW		—	0.226	11.3	50	Case
Type LW	D32~D38	—	0.223	11.2	50	Case

Cautions

- Tighten the nut at approximately 1.96kN·cm (200kgf·cm). Be sure to use the product within the allowable load.
- The allowable load for an angle in directions other than perpendicular and parallel directions should not exceed the allowable load in the perpendicular direction.
- Note that the numerical value of the allowable load is the strength of the main body of the product, and deformation due to arrangement condition of reinforcing bars is not taken into consideration.
- When using the product M or MW, place a rebar in the position indicated in Fig. 1.
- When welding Separator...
 - Weld separator before the product is attached to rebar.
 - If separator is welded to rebar, the initial torque may be reduced because of welding heat. Therefore, be sure to tighten the nut again when the assembly has cooled down after welding.
 - Do not fill the air-bleeding hole when welding separator.

When using Separator-Rebar Joint

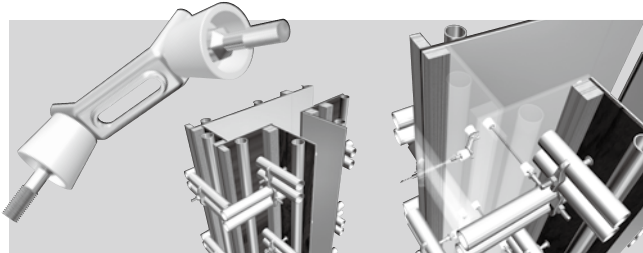
- Note that if the screwing length of separator is short (11.5mm or less for W5/16 and W3/8), prescribed strength can not be secured.
- Check the product for damage, etc., before use.
- Do not use the product for any purpose other than its intended purpose.
- When installing the product, confirm its specifications and precautions, and handle the product with sufficient care.
- The allowable load is applied when Okabe separator is used, it will not be guaranteed when other separator is used.



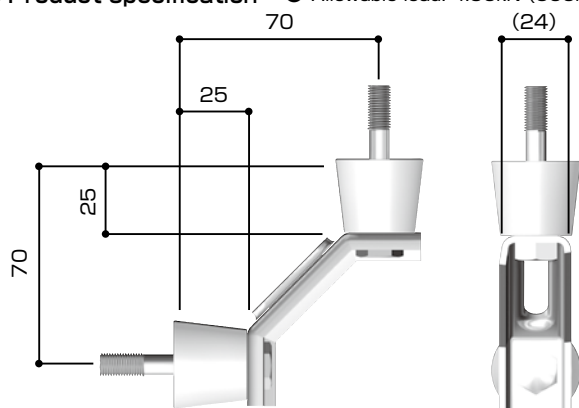
Corner Fastener

Product No. B10-0530

Fastening hardware for formwork corner to prevent concrete leakage

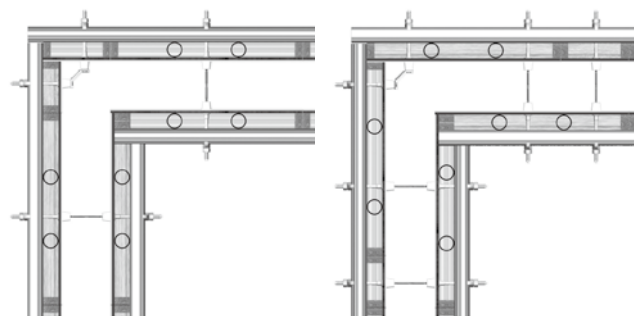


◆Product specification ● Allowable load: 4.90kN (500kgf)



◆Application ● Handrail wall formwork corner/stop-end formwork around an opening

◆Usage instructions ● When using this product for formwork, see the following figures.



Wrong ×

Correct ○

Quantity (pc/case)	Weight (kg/case)	Packing
50	7.5	Case

Cautions

- Use this product within the allowable load of 4.90kN (500kgf), considering lateral pressure applied to formwork.
- The numerical value of the allowable load is the strength of the main body.
- Use W5/16 form ties or nuts to install the product.
- To facilitate air bleeding, install the product with its short rib upside.

◆Notes for using Corner Fastener/Ladder Bar

- Note that if screwing lengths of plastic cones and form ties are short, the predetermined strength cannot be secured.
- Check the product for damage etc., before use.
- Do not use the product for any purpose other than its intended purpose.
- When installing the product, confirm its specifications and precautions, and handle the product with sufficient care.

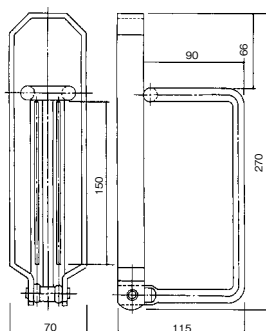
Panel Adjuster

Formwork panel supporting hardware for concrete joint

Product No. B10-0540



◆Size



◆How to use

Insert the product into a separator and adjust it to the batten level.

Tighten the product with the form tie.

Place the batten, raise the arm, and tighten the form tie Typell washer to complete installation.

Features

- Prevents misalignment with strong batten fixing force.
- A long arm firmly holds a large batten.

Cautions

- Fasten the product securely with a form tie.
- The level adjusting range is 150mm.
- Be sure to use the product within the allowable load.

Allowable load 1.90kN (200kgf)

Product	Quantity (pc/case)	Weight (kg/case)	Packing
Panel Adjuster	20	22	Case

Separator Joint

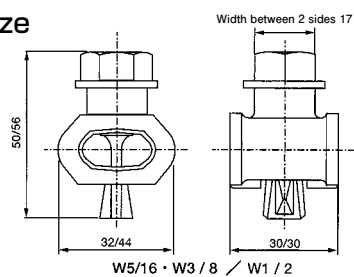
Joint hardware for separators

Product No. B10-0550



Product	Quantity (pc/case)	Weight (kg/case)	Packing
Separator Joint W5/16	100	10	Case
Separator Joint W3/8	100	11	
Separator Joint W1/2	50	10	

Size



Features

- Easy on-site adjustment with a wrench.
- No welding required!

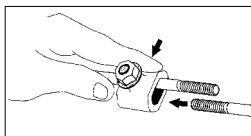
Allowable load

- For 5/16 12.0kN (1224kgf)
- For 3/8 18.0kN (1836kgf)
- For 1/2 24.0kN (2447kgf)

Cautions

- Be sure to tighten the wedge until its bottom end is inserted further inside than the sleeve bottom surface (See Fig. B).
- Separator that cannot be inserted into the sleeve, such as a hat-type separator, can be used by cutting.
- Be sure to use the product within the allowable load or less.

Squeeze the sleeve as shown in the figure to insert the separator easily



Usage instructions

- ① Insert two separators into the sleeve. (See Fig. A)
- ② Slide two separators to obtain the necessary length. (Secure at least 30mm for excess length.)
- ③ Tighten the wedge until its bottom end is inserted further inside than the sleeve bottom surface. See Fig. B [Torque: 3.43kN·cm (350kgf·cm) or more].

Fig. A When separators are inserted.

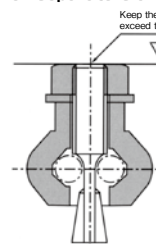
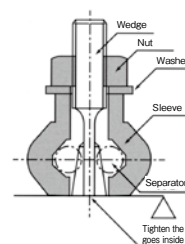


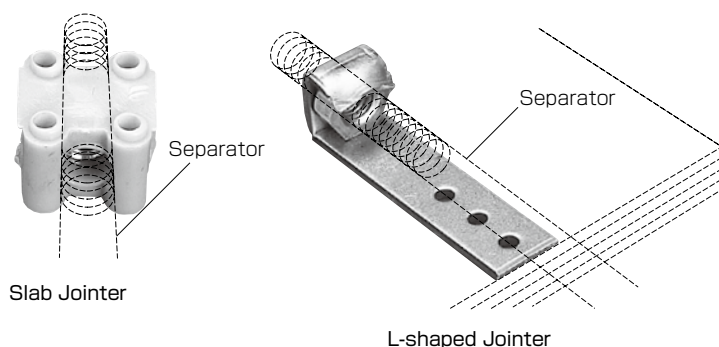
Fig. B When tightening is completed.



Slab Jointer

Separator joint hardware from slab to wall

Product No. B10-0560

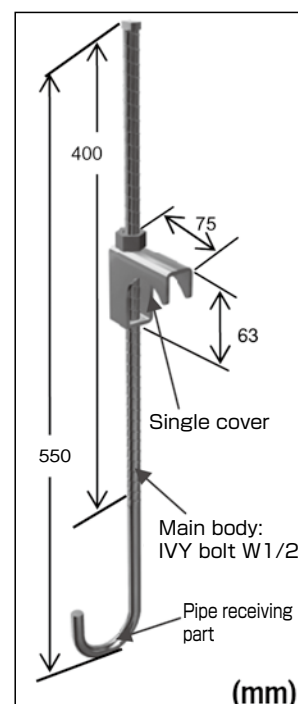
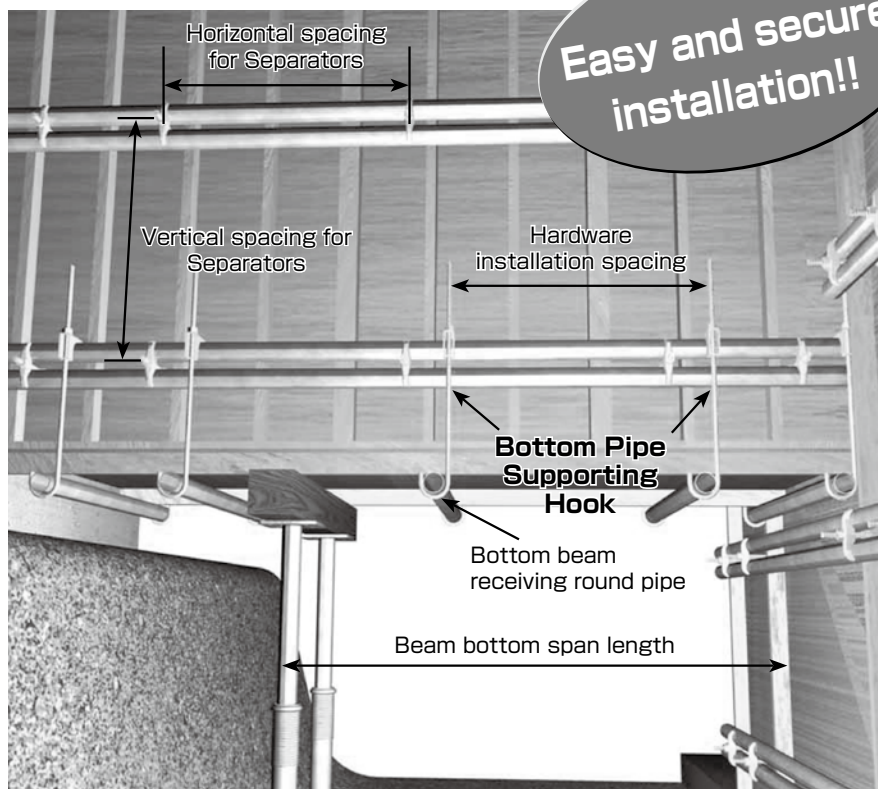


Product	Quantity (pc/case)	Weight (kg/case)	Packing
Slab Joints 8	500	6	Case
Slab Joints 9	500	13	Case
Slab Joints 8 with nails	—	—	—
Slab Joints 9 with nails	—	—	—
L-shaped Joints N	500	11	Case

Bottom Pipe Supporting Hook

J-shaped pipe supporting hook for bottom beam

Product No. B10-0570



Applicable beam bottom span length

- Up to 1,800mm, when the beam depth is within 1,000mm.
- Up to 1,200mm, when the beam depth is within 2,000mm.

Allowable load: 2.94kN (300kgf)

◆Bottom Pipe Supporting Hook and Separator installation spacing chart

- The following chart shows spacing for this product, as well as vertical and horizontal spacing for Separators for the beam formwork, when the beam depth is 500~2,000mm and the beam width is 200~1,000mm.

Beam depth (mm)	Beam bottom span length (mm)	Beam width (mm)																	
		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	
2000		600	400	400	300	300	200	200											
1900		600	500	400	300	300	200	200	200										
1800		600	500	400	300	300	200	200	200	200									
1700	Maximum length: within 1,200 (mm)	600	500	400	400	300	300	200	200	200									
1600		600	500	400	400	300	300	200	200	200									
1500		600	600	500	400	300	300	300	200	200	200								
1400		600	600	500	400	400	300	300	200	200	200	200							
1300		600	600	600	500	400	400	300	300	200	200	200	200						
1200		600	600	600	500	400	400	300	300	200	200	200	200	200					
1100		600	600	600	600	500	400	400	300	300	200	200	200	200	200				
1000		600	600	600	600	500	500	400	400	300	300	200	200	200	200				
900		600	600	600	600	600	500	500	400	300	300	300	200	200	200				
800	Maximum length: within 1,800 (mm)	600	600	600	600	600	600	500	400	400	300	300	300	200	200				
700		600	600	600	600	600	600	600	500	400	400	300	300	300	200	200			
600		600	600	600	600	600	600	600	600	500	400	400	300	300	300	200	200		
500		600	600	600	600	600	600	600	600	600	500	500	500	400	300	200	200	200	

◆Examples of how to read the chart

- Example 1: When the beam depth is 1,200mm and the beam width is 750mm (*1 in chart): The spacing of the product is 200mm. According to colored area, the vertical spacing of the Separators is 600mm, and the horizontal spacing of the Separators is 450mm. The maximum beam bottom span length is 1,200mm.
- Example 2: When the beam depth is 1,000mm and the beam width is 400mm (*2 in chart): The spacing of the product is 500mm. According to colored area, the vertical spacing of Separators is 600mm, and the horizontal spacing of the Separators is 600mm. The maximum beam bottom span length is 1,800mm.

Cautions

- * The allowable load is applicable when Okabe form ties, separators and plastic cones are used.
- Use the product within the allowable load of 2.94kN (300kgf).
- When using the product repeatedly, check the product for deformation and damage before installation.
- Use film faced plywood (t= 12mm or more).
- Use ϕ 48.6 steel pipes (t= 2.3mm or more).
- After installing this product, do not place a foot or object on the horizontal pipe.
- Firmly support the bottom beam formwork and both sides of beam formwork where unequal settlement does not occur. Take a measures to prevent the formwork deformation and collapse.
- This product is intended to support the bottom beam formwork by hanging it from the beam formwork. If the beam formwork is not rigid enough, support it at appropriate intervals.
- When using this product outside the applicable scope, be sure to support the bottom beam formwork and beam formwork with supporting materials (Falsework, shoring prop, etc).

A Temporary Construction

B Concrete Formwork

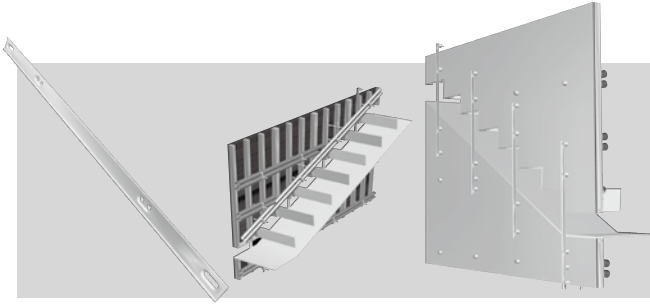
C Rebar Work

G Civil Engineering

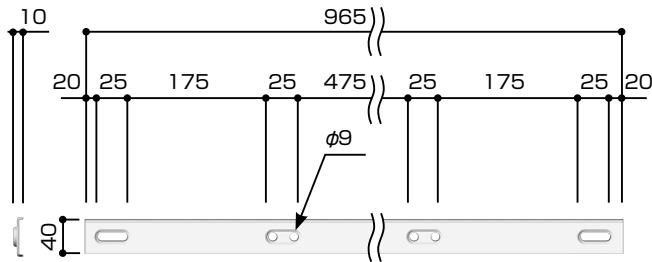
Ladder Formwork Support

Product No. B10-0580

Supporting hardware for ladder formwork



◆Product specification ● Allowable load: 4.90kN (500kgf)



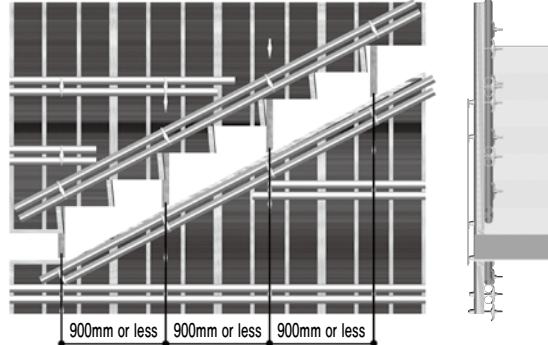
Cautions

- Install products with spacing of 900mm or less considering the upper formwork weight.
- For installation, use W5/16 plastic cones, bolts or form ties (nuts) to fasten the product at 4 positions.
- Install the product vertically to the formwork.
- Install plastic cones to the no-rib side (see installation method)
- Be sure to place the hexagon head of the bolt in the dent, and screw the bolt into the plastic cone.
- 1 set consists of 1 Ladder Formwork support and 4 hexagon head bolts.

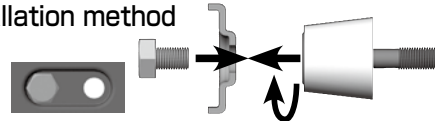
◆Notes for using Corner Fastener/Ladder Formwork support

- Note that if screwing lengths of plastic cones and form ties are short, the predetermined strength cannot be secured.
- Check the product for damage etc., before use.
- Do not use the product for any purpose other than its intended purpose.
- When installing the product, confirm its specifications and precautions, and handle with sufficient care.

- ◆Application ● Formwork for staircase with wall
- ◆Usage instructions ● Installation spacing 900mm or less



◆Installation method



Packing	Quantity (pc/bundle)	Accessory	Weight (kg/bundle)
Bundle	10	Hexagon head bolt W5/16 × 40	9.0

Floating Formwork Support : Rebar

Rebar-attachable supporting hardware for floating formwork

Product No. B10-0590



Features

- Can be securely fastened to a rebar with staggered hooks.
- Easy to adjust height.
- Compatible with D10 to D25 re-bars.
- Lightweight and easy to handle.

Allowable load 0.39kN (40kgf) / pc

Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
Floating Formwork Support (Rebar)	50	10	PP bag

How to use

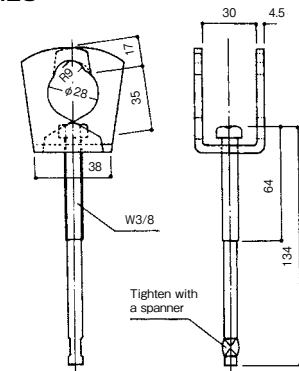
● Slide the product to a rebar as shown in the figure, and rotate 90°.

● Screw the bolt for the temporarily tightening.

● Tighten the bolt completely with a spanner.

● Place the floating formwork.

Size



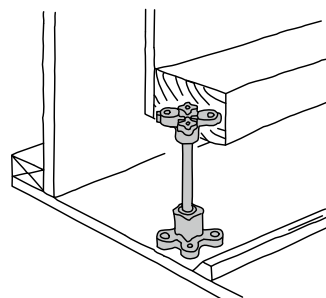
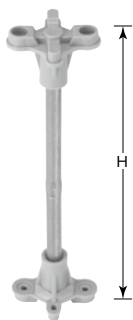
Cautions

- Tighten the bolt securely with a form tie spanner, etc.
- In case of direct finishing, place a spacer, etc., between the formwork and the product.
- Be sure to use the product within the allowable load.

Floating Formwork Support : Slab

Supporting hardware for floating formwork

Product No. B10-0600



Features

- Both finishing and exposed surface available.
- Easy post-treatment of nails.

Product	H (mm)	Quantity (pc/case)	Packing
Floating Formwork Support	100~300 (5mm pitch)	100	Case

*1 Specify H dimension when placing an order.

*2 Made-To-Order is available

How to use

- 1) Nail the product on the horizontal panel.
- 2) Place the vertical floating formwork on the product.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

Rib Clip

Product No. B10-0610

Fastening clip for ribbed wooden formwork panel



Features

- Easy joint with a hammer
Applicable batten sizes : 24mm and 27mm.
- Lightweight, compact and easy to carry.
- Prevents concrete leakage from formwork panel joints.

Application

Fastening hardware for battens to join formwork panels

Installation procedures

①Place and adjust the product.



②Hammer the product.



③Installation completed.



Removal procedures

①Insert a crowbar in an opening.



②Pull the crowbar toward you.



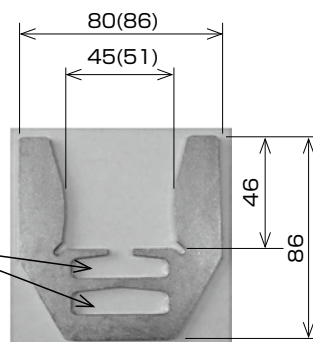
③Removal completed.



Quantity per package

Product	Quantity (pc/case)	Weight (kg/case)	Packing
For 24	100	8.6	Case
For 27	100	8.9	Case

Dimensions for Rib Clip 27



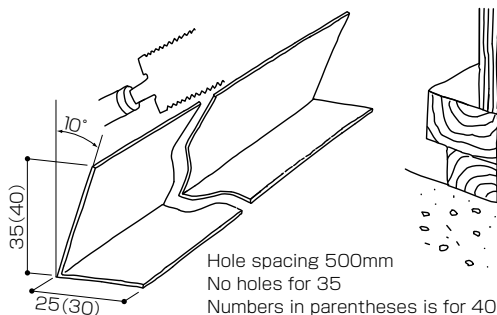
Cautions

- Be sure to use the product within the applicable batten sizes.
- When the product is installed obliquely, remove and install it again in a different location.
- When removing the product, insert a crowbar, and remove it carefully.
- Do not use any the product damages, cracks, and deformations are found.

Leakage cover

L-shaped plastic cover to prevent concrete leakage

Product No. B10-0620



Features

- Prevents concrete leakage between the vertical panel and the leveling concrete.

◆ Allowable load

- 1.47kN (150kgf)/cover

Product	Size (mm)	Quantity (pc/case)
Leakage cover 35	1×25×35	100
40	1×30×40	100

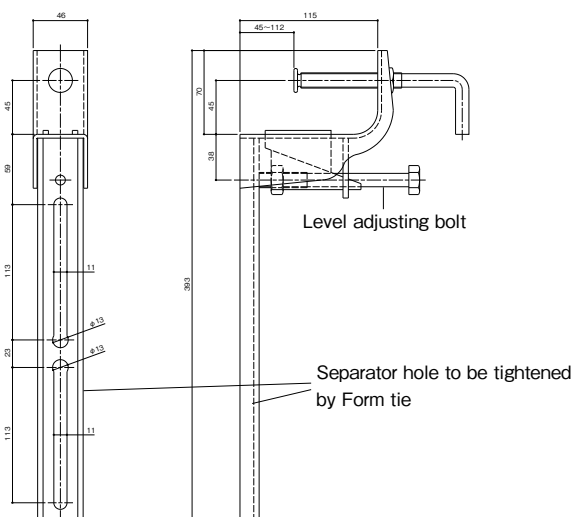
Panel Adjuster : Vertical

Level-adjustable hardware for vertical formwork panel

Product No. B10-0630



◆ Size



Features

- Easy installation with separators and form ties.
- Fine adjustment available.

Cautions

- Do not overtighten the bolts. It may cause deformation.
- Do not use the product in such a way as to receive concrete lateral pressure directly.
- Be sure to use the product within the allowable load.

Product	Quantity (pc/case)	Weight (kg/case)	Packing
Panel Adjuster	20	22	Case

Allowable load 1.47kN (150kgf)/piece

Panel Adjuster : Vertical & Horizontal

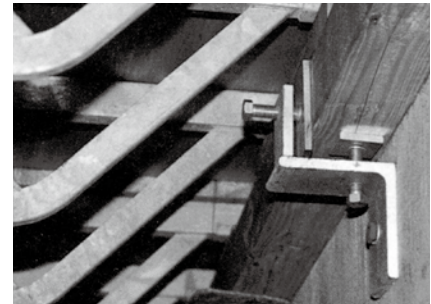
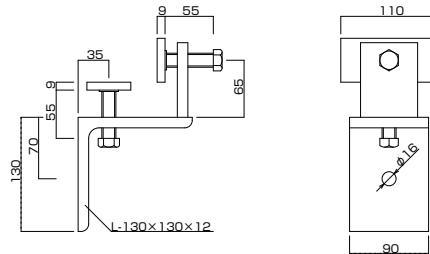
Product No. B10-0640

Level-adjustable hardware for vertical or horizontal formwork panel



[Weight: 3.2kg]

◆Shape & dimensional drawing



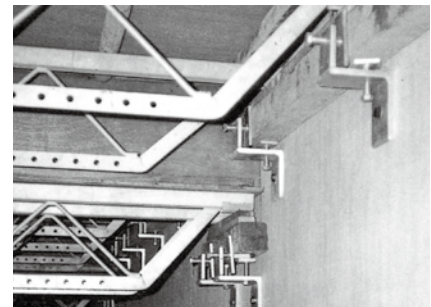
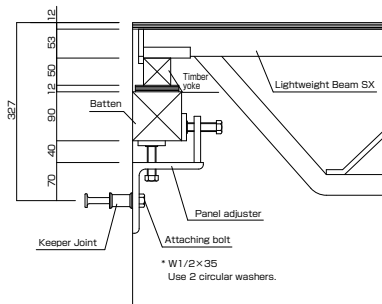
Features

- Falsework-less method maximize the effective use of space.
- High allowable load enables the easy level adjustment of the large formwork panels.

◆Allowable load

- 15.6kN (1,600kgf) W1/2×32 (Equivalent to high strength bolt 10.9.)
- 7.80kN (800kgf) W1/2×32 (Equivalent to SS400.)

◆Support Free Slab Panel Method (with Light-weight beam SX)



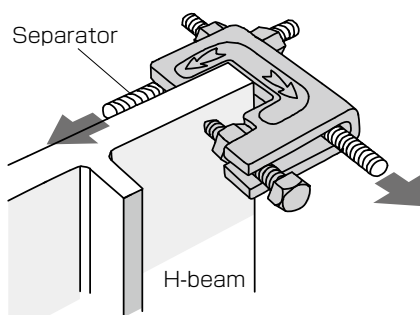
Cautions

- Use attaching bolts W1/2.
- Use 90×90mm battens.

Separator-Beam Joint

Product No. B14-0010

Separator joint hardware for H-beam column



◆Application

- Installing separators from H-beam.
- Hanging plumbing pipes from H-beam, angles beam, etc.

Product	Effective width (mm)	Allowable load	Quantity (pc/case)	Weight (kg/case)	Packing
		kN (kgf)			
Separator-Beam Joint 8-20	5~20	4.91 (500)	150	21	Case
Separator-Beam Joint 8-30	18~30	4.91 (500)	150	24	Case
Separator-Beam Joint 8-40	28~40	7.85 (800)	—	—	—
Separator-Beam Joint 8-70	40~70	7.85 (800)	—	—	—
Separator-Beam Joint 9-30	6~30	7.85 (800)	—	—	—
Separator-Beam Joint 9-50	—	7.85 (800)	—	—	—

Cautions

- Attach the the product to the H-beam, and tighten the hexagon head bolt securely.
- The direction of tension load should be in the direction of the arrows marked on the product (See the figure).

Separator-Beam Joint : Welding

Separator joint hardware for H-beam by welding

Product No. B14-0020

A

Temporary
Construction

B

Concrete
Formwork

C

Rebar Work

G

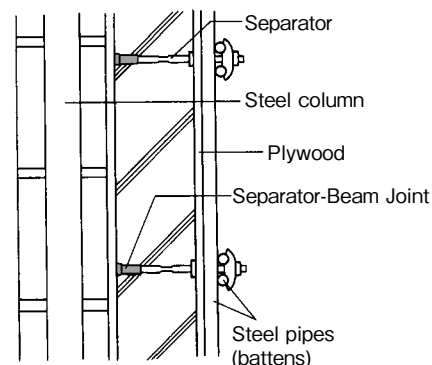
Civil
Engineering



Features

- To connect separators from H-beam by welding.
- Separator diameters of W5/16 and W3/8 attachable.

◆Example of use



◆Allowable load

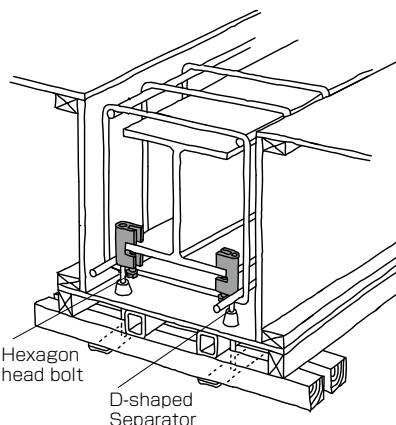
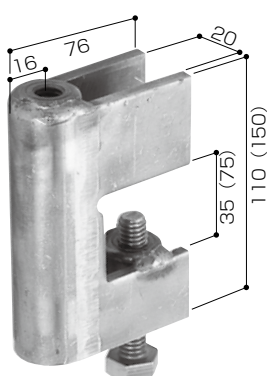
- W5/16 14.0kN (1400kgf)
- W3/8 21.0kN (2100kgf)

Product	Thread diameter	Outside diameter (mm)	Total length (mm)	Thread depth (mm)
Separator-Beam Joint 12-50	W5/16	12	50	30
Separator-Beam Joint 16-50	W3/8	16	50	30

Bottom Hanging Joint

Bottom-support-less separator joint hardware from H-beam

Product No. B14-0030



Features

- The supportless method enables effective use of the space below the slab beam.
- Easy application by fastening a bolt.

◆Allowable load

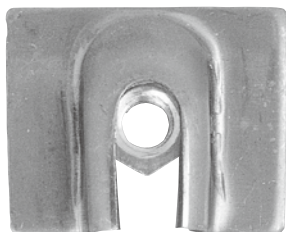
- 20.5kN (2100kgf)/hanger

Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
Bottom Hanging Joint for 35	25	21	PP bag
Bottom Hanging Joint for 75			

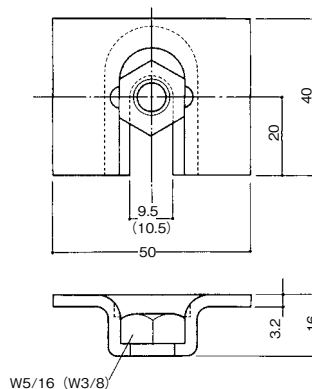
Separator Joint : Sheet Pile

Product No. B20-0010

- Separator joint hardware for sheet pile
- Extraction hardware for sheet pile

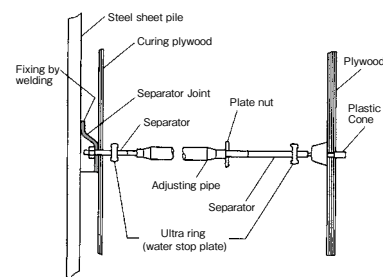


◆Size



* The dimensions in the brackets are for W3/8.

◆Examples



Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
W5/16 8	400	25	Jute bag
W3/8 9	400	24	Jute bag

Features

- Reduces pulling resistance of pile.
- No damage on the structure when extracting pile.
- Curing of steel sheet pile and concrete can be done by using plywood.

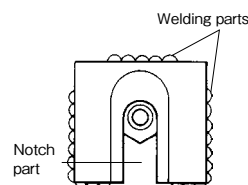
Allowable load

Straight tensile	9.80kN (1000kgf)
Tensile with 15° bent	7.80kN (800kgf)

The same allowable load is for both W5/16 & W3/8.

Cautions

- Be sure to weld 5 (five) points when welding to steel sheet pile.
- When welding the product, pay attention Not to weld the notch.
- Be sure to weld the product with the notch part facing down, and do not place rebars the connected separators.
- When extracting the steel sheet pile, remove obstacles from the concrete structure beforehand.
- Be sure to use the product within the allowable load or less.



Separator Joint : Timber Lagging

Product No. B20-0020

Separator joint hardware for timber lagging

Features

- Prevents the rotation of separator by hammering the stopper hardware.

- Fastening with nails
Type N-100, 150



- Inserting between H-beam flange and timber lagging
Type H-150



- Fastening with wedges
Type K



Product	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
Type N-100	0.10	100	10.0	Case
N-150	0.12	100	12.5	Case
H-150	0.20	50	10.0	Case
K	0.24	50	12.0	Case
N-100 (without stopper)	0.15	200	21.0	Bag

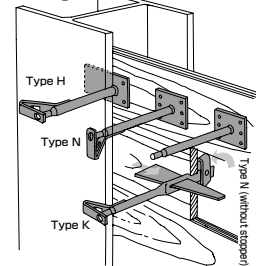
Size

Product	Type N-100, 150
Size	
Working method	1. Fasten the product with 6 (six) barbed nails. * The maximum wall thickness N-100 : 85mm. N-150 : 135mm.

Product	Type H-150
Size	
Working method	1. Insert one side of the plate between H-beam flange and timber lagging. 2. Fasten the product with 2 (two) barbed nails * The maximum wall thickness H-150 : 135mm.

Product	Type K
Size	
Working method	1. Make a $\phi 23$ thorough hole to timber lagging. 2. Insert the product in the hole. 3. Hook the rotating wedge, and strike the fixing wedge. * The maximum wall thickness K : 85mm.

Horizontal sheet pile construction method working drawing



Separator Joint : Timber Lagging

Product No. B20-0030

- Fastening with nails
Type NN
(without rotation stopper)



Product	Type NN-100 (without rotation stopper)
Size	
Working method	1. Installation is completed by just hammering in six barbed nails into timber lagging. * The maximum wall thickness adjusting dimension for N-100 is 85mm.

Cautions

- Securely fasten Type N, H, and NN by using barbed nails.
- Note that the allowable load differs depending on the type and moisture content of timber lagging.
- After hammering the stopper hardware, check separator rotation prevention effect.
- * When using Type K, double check whether the wedge is working properly.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

Separator Joint : Soldier Pile

Product No. B20-0040

- Separator joint hardware for soldier pile
- Extraction hardware for soldier pile

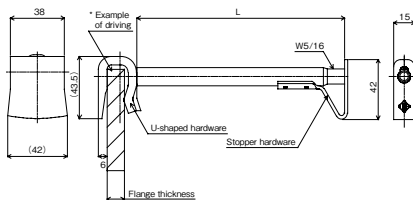


Product	Applicable flange thickness (mm)	L (mm)	Weight (kg/pc)	Quantity (pc/case)	Weight (kg/case)	Packing
F1215L=100	12~15	96	0.22	50	11.0	Case
F1215L=150	12~15	146	0.24	50	12.0	Case
F1921L=100	19~21	96	0.22	50	11.0	Case
F1921L=150	19~21	146	0.24	50	12.0	Case

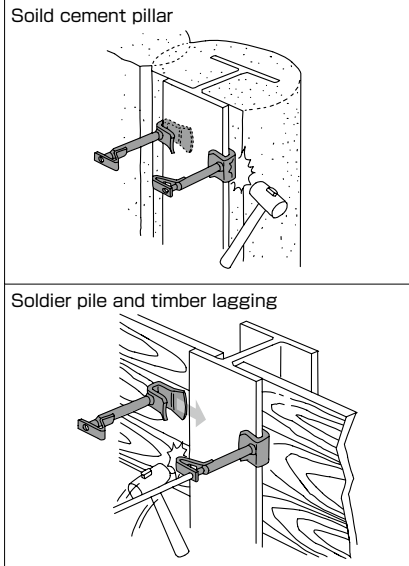
Features

- Flange thickness of H-beam (12~15mm and 19~21mm)
- Can be easily hammered in a small space between the soldier pile and timber lagging.
- Hammering the stopper hardware prevents rotation of separator.
- Soldier pile can be easily extracted.
- Applicable to the SMW method as well.

Size



Application



Allowable load

- Tensile load: 10.0kN (1,000kgf)

Cautions

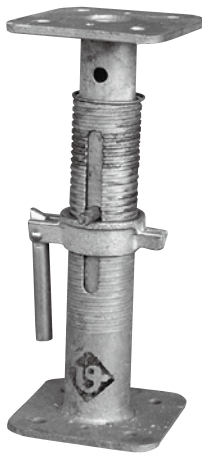
- Hammer in the product to H-beam flange till the end (* See the example.)
- Do not exceed applicable flange thickness.
- Please make a formwork construction plan in compliance with the allowable load.
- When making an earth retaining plan, determine the intervals of the soldier pile considering the formwork construction plan.
- For the poor construction accuracy of soldier pile, increase the attachment of the products.
- Be sure to keep screwing thread length of separator to retain the strength (e.g. 11.5mm or more for W5/16).
- Check the rotation-stopper function by hammering the stopper hardware.
- Check the product for damage before use.
- Do not use the product for any purpose other than its intended purpose.
- When installing the product, confirm its specifications and precautions, and handle the product with sufficient care.

Shoring Prop

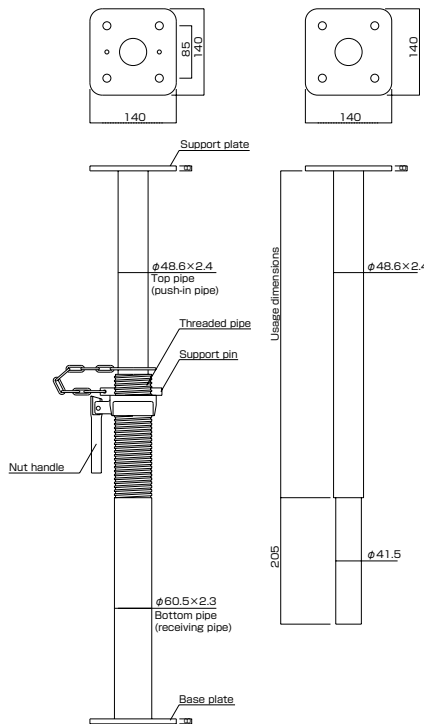
Length-adjustable prop

Product No. B30-0010

Shortened Sample



◆Shape & dimensional drawing (Extension)



◆Specs

Product	Symbol	Usable Length (mm)	Weight (kg/pc)
Shoring Prop	10S	320~430	4.6
	12S	370~505	5.0
	15S	470~640	5.6
	20S	600~950	6.0
	30S	810~1275	7.5
	40S	1230~1960	10.0
	50S	1535~2570	11.5
	60S	1780~3055	13.0
	75S	2150~3425	14.0
Extension	4S	1200	5.1
	5S	1500	6.0

* The minimum usable length includes adjustment length (+15mm).

* The allowable bearing capacity can be 19.6kN regardless of the product height when effective restraint is provided by installing horizontal pipes. However, "effective restraint" here means "to install horizontal braces in 2 directions for each height of 2m or less and prevent the horizontal braces from becoming displaced".

* When extension, etc., is connected to the product, the height will exceed 3.6m. In such a case, the allowable bearing capacity can be 19.6kN, only if effective restraint is provided by installing horizontal pipes.

Allowable bearing capacity of Shoring Prop (kN)

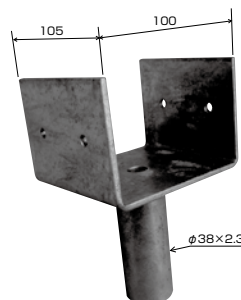
Material conditions	With braces	Without braces			
		Available height (m)			
		2 or less	2~2.5	2.5~3	3~3.4
Top and bottom ends: Wood	19.6	19.6	17.6	13.7	9.8
Top end: Wood Bottom end: Finished concrete	19.6	19.6	18.6	16.6	14.7

(Note) "With braces" in the above table means "the product is reinforced with horizontal braces in 2 directions for each height of 2m or less using metal fasteners."

■Pivot attachment Type A



■Large batten supporting attachment (PS100)



Cautions

- When connecting the products, install swing preventive braces and diagonal braces, if there is a risk of impact or eccentric loading.
- The support plate of the product must be uniformly loaded. Be sure that it is not eccentrically loaded.
- If dents are found, do not use the product.
- Never make repairs by heating because it causes strength deterioration.
- Do not use the products and timber pillars together. Such use is dangerous as the allowable load cannot be maintained.
- Check the following before work:
 - Check that the support plate and base plate are not bent.
 - Check that the pipe is not bent, dented, damaged, etc.
 - Check that the pin is not bent.
 - Check that the threaded pipe is not bent.
 - Conditions of accessories

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

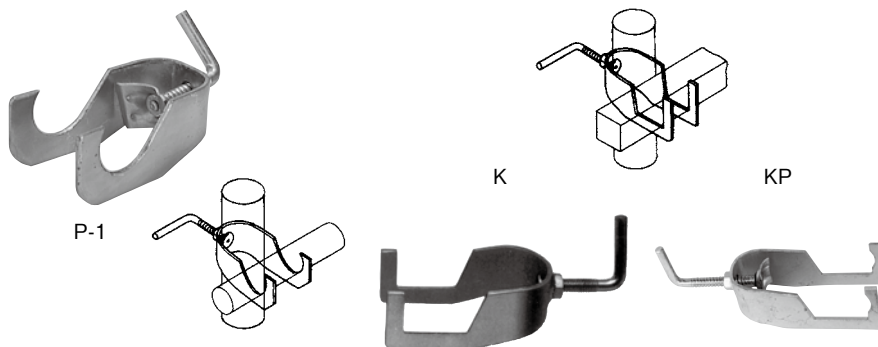
G

Civil Engineering

Prop Overturn-Preventive Hook

Hooking hardware for shoring prop to prevent overturning

Product No. B30-0020



Features

- Can connect shoring prop and the horizontal bottom pipe easily and securely.
- Can also be used as a clamp for a horizontal batten (KP).

Cautions

- Do not use the product for scaffolding.
- Use the product only for designated pipes.
- Do not use the product once deformation is found.
- Do not attach wire, etc., via the bottom brace or horizontal brace.
- If the height of shoring prop exceeds 3.5m, make sure to install swing-restraints at the interval of every 2m.

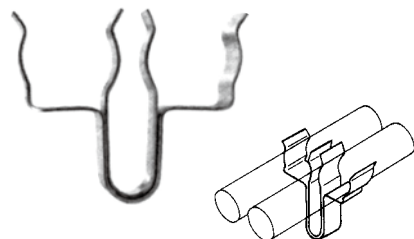
Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
Prop Overturn-Preventive Hook P-1	40	27	PP bag
K	30	22	PP bag
K P	25	24	PP bag

Pipe Stabilizer

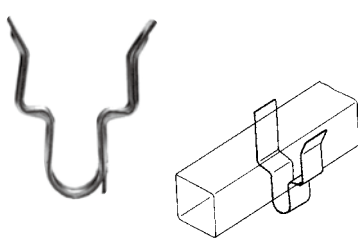
Temporary stabilizer for steel pipes

Product No. B30-0030

For round pipe (Double)
PDC2



For square pipe (Single)
KDC S-2



For square pipe (Double)
KDC W-2



Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
φ48.6 x2	50	11	PP bag

Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
□60 x1	150	14	PP bag

Product	Quantity (pc/bag)	Weight (kg/bag)	Packing
□60 x2	50	12	PP bag
□50 x2	—	—	—

Girder Stabilizer

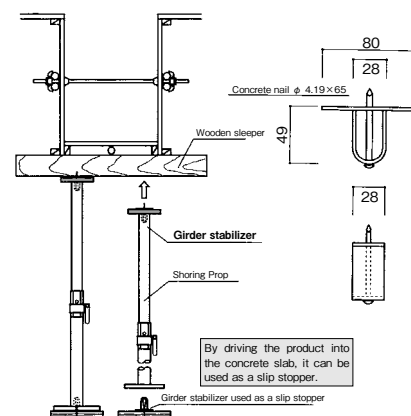
Wooden girder stabilizer

Product No. B30-0040



◆How to use

◆Size



Features

- Easily installed by inserting the product to the support (top) plate of shoring prop, and pressing the nails to the wooden sleeper.

Cautions

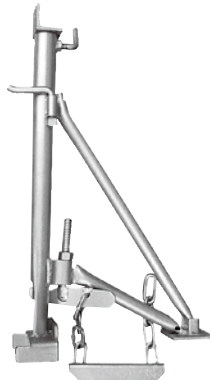
- Take extra caution for the nails when handling.
- Take extra caution against the product coming off from wooden sleeper during assembly or disassembly of formwork.

Product	Quantity (pc/case)	Weight (kg/case)	Packing
Girder Stabilizer	150	20	Case

Beam Formwork Holder

Anti-overturn hardware for beam work

Product No. B30-0050

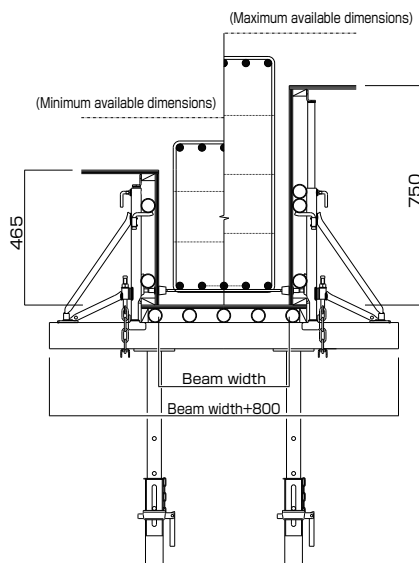


[Weight: 3.8kg]

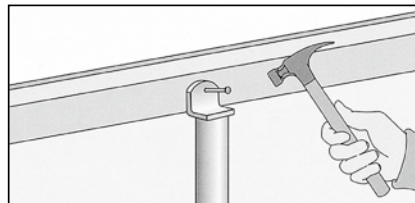
Features

- Labor-saving
Upper separators are not required.
- Adjustable Width
Applicable for beam width of 465mm~750mm.

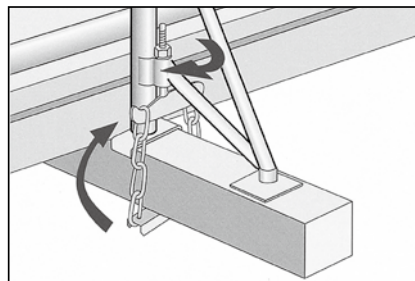
◆Dimensions



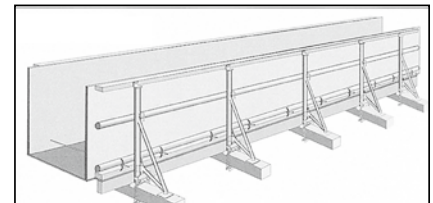
◆How to use



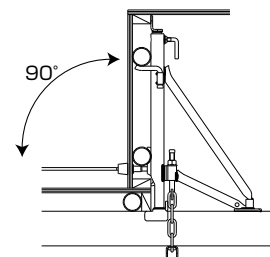
1. Place the product on the side of beam work panel, and fasten the upper part with a nail.



2. Wrap a chain around the square batten, and fasten the product with a tightening bolt.



3. Setting completed.



Just by fixing the product to the square batten, the side panel stands straight.

Cautions

- Cannot be used for walled beam work.
- Square batten must be +800mm wider than the beam width.
- Use square wooden batten.
- Install the product securely.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

Shoring Prop Base

Product No. B30-0060

Base plate for angled shoring prop to support formwork panel



Features

- Firmly holds angled shoring prop.
- Lightweight, compact, and easy to carry.
- Can be stored in a small space.

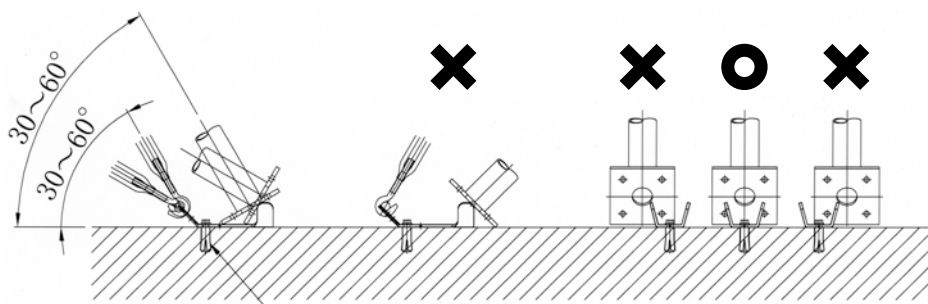
How to use

Angle of Shoring prop and chain must be 30~60°

Wrong installation direction

Shoring prop must be supported by both wings of the product.

The product and shoring prop must be installed in the same direction so that shoring prop can be supported uniformly by both wings.



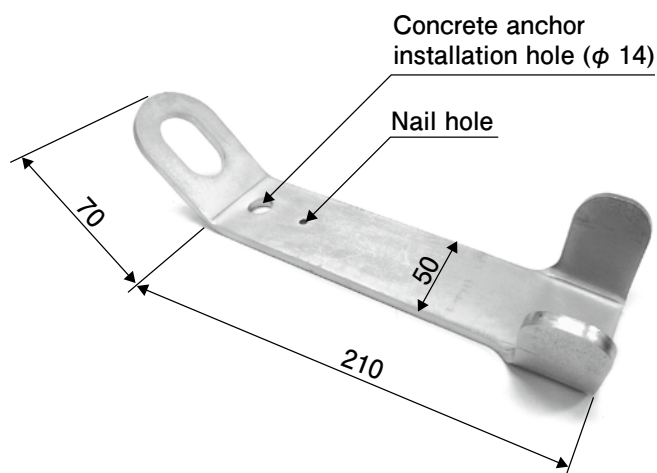
Fix with a concrete anchor of W1/2 or M12.

Quantity per package

Quantity (pc/bag)	Weight (kg/bag)	Packing
20	16.2	PP bag

Cautions

- This product is to adjust and support vertical formwork panels. Do not use it for slanted formwork panels.
- The product is to maintain the erection accuracy of formwork panels. Do Not use the product as the base for supporting the weight of slanted formwork nor any other load.
- Attach this product to a sturdy and smooth surface, such as a concrete slab surface.
- Fix the product with a concrete anchor of W1/2 or M12.
- The product must be used for a regular shoring prop. Do not use the irregular shoring prop.
- Make sure to use the chain (Do Not use wire rope, etc.)



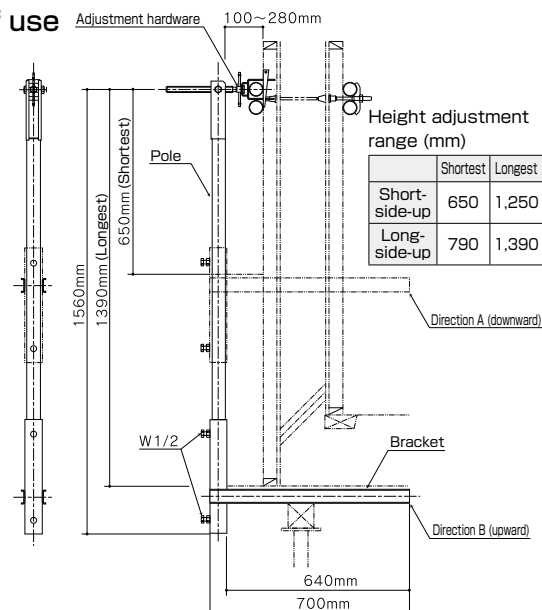
Balcony-Wall Support : Outside

Supporting hardware for balcony wall formwork

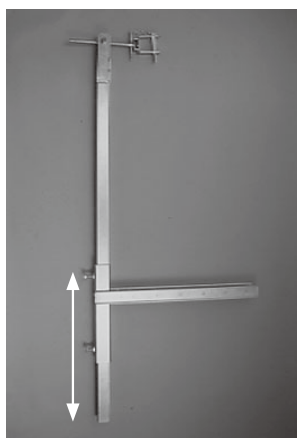
Product No. B30-0110



◆Range of use



◆With the holder short-side-up



(The holder can be used upside-down)

◆How to use

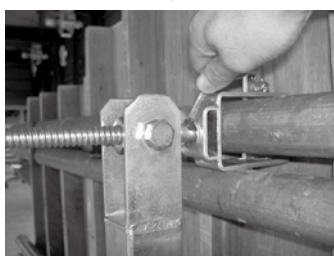


Can be fixed onto low Joists (60*48mm or 60*60mm)

Fasten the product to the slab supporting joist with the duplex head nails (60*48mm, 60* 60mm).



Insert the pole into the bracket and fasten it with bolts (2 positions) at the desired height.



Set the adjusting hardware to the horizontal batten, and after fastening it with a wedge, adjust plumb and straightness with the handle.

Features

- Accurate and efficient formwork!
Easy to adjust the tilt of balcony wall panel by rotatating the adjust handle.
- Effective use of work space!
Extra working space is provided with Balcony support which supports the wall panel from the outside.
- Highly Economical!
No anchors or attaching hardware are required.

Product	Weight (pc/kg)
Type P: Low Holder Set for 60*48 Joist (1 pole with 2 holders)	18.2
Type K: Tall Holder Set for 60*60 Joist (1 pole with 2 holders)	18.2
Parts: Pole with clamp	7.8
Parts for type P: 60*48 Low Holder	5.2
Parts for type K: 60*60 Tall Holder	5.2

* Each Set consists of 2 holders to make it possible to set the second one onto the next floor, while the first one is in use.

Cautions

- Fasten the bracket securely to the dedicated joist with nails.
- Fasten the adjusting hardware to the horizontal brace securely with a wedge.
- Be sure to make adjustments within the adjustment range.
- Do not use the product if deformation is found.
- Do not use the product for any purpose other than its intended purpose.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

Demolition Support Falsework

Product No. B30-0210

High-intensity falsework for supporting demolition work

Features

- The square support pipes enables the easy storage.
- Bridge batten can be easily attached with the bridgebatten-clamp.

◆Bridge batten clamp



◆Specs of Parts

Parts	Range of use (mm)	Weight (kg/pc)
Low Jack Type-55	150~400	7.50
Tall Jack Type-85	150~700	10.50
Attachment Clamp	—	1.30
Support base	—	0.70

Type	Pole length (mm)	Weight (kg)	Available dimension (mm) (dimensions for jacking up one side)				Maximum strength kN (kgf)
			Type 55	Weight	Type 85	Weight	
Type S-24	2400	27	2550~2800	34.5	2550~3100	37.5	279 (28500)
Type S-30	3000	33	3150~3400	40.5	3150~3700	43.5	202 (20600)
Type S-35	3500	37	3650~3900	44.5	3650~4300	47.5	202 (20600)
Type S-40	4000	42	4150~4400	49.5	4150~4700	52.5	166 (17000)
Type S-45	4500	46	4650~4900	53.5	4650~5200	56.5	155 (15900)
Type S-50	5000	51	5150~5400	58.5	5150~5700	61.5	125 (12800)
Type S-55	5500	55	5650~5900	62.5	5650~6200	65.5	101 (10400)

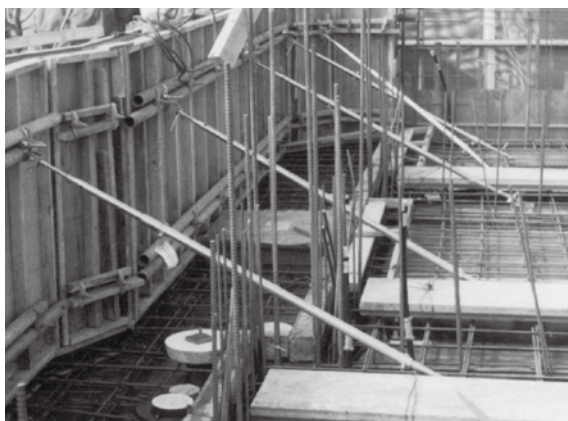
Caution

- Use the product within the allowable load, approximately 50% of the maximum strength as a standard.

Balcony-Wall Prop : Inside

Length adjustable prop for balcony wall formwork

Product No.	B30-0310
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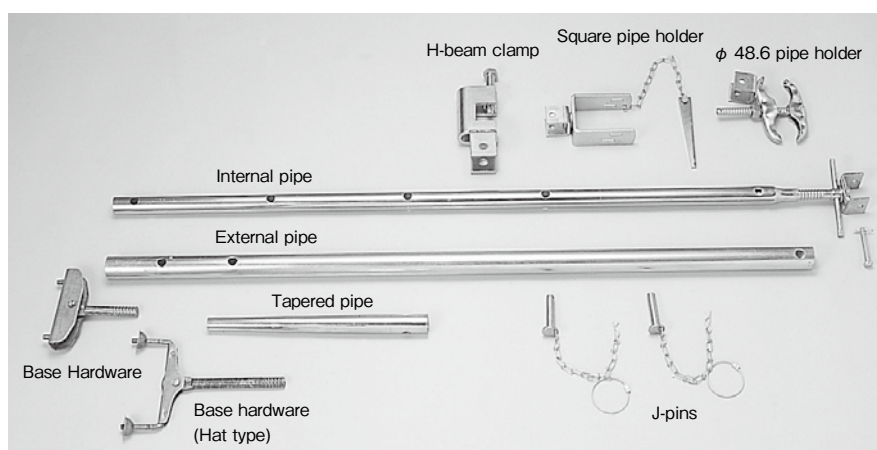
Features

- Allows for easy execution of integral construction of the balcony wall and slab.
- Easy adjustment of the tilt of the balcony wall.
- Lightweight and easy to carry.

Product	Quantity (pc/bundle)	Weight (kg/bundle)
PS-set: (Pipes, J-pins, and a $\phi 48.6$ holder) *	5	22
PH-set: (Pipes, J-pins, a $\phi 48.6$ holder and a H-beam clamp)	5	23
KS-set: (Pipes, J-pins, and a □ pipe holder) *	5	23
KH-set: (Pipes, J-pins, a □ pipe holder and a H-beam clamp)	5	24
Parts: PP-base	50	19
Parts: PP-base Hat type	—	—

*PP-base, Plastic cone are not included in the set above.

◆Combination according to the use conditions



SET	Installation conditions	
	Batten of balcony wall panel	Opposite End
PS	Round pipe (ϕ 48.6)	Slab Panel
PH	Round pipe (ϕ 48.6)	H beam
KS	Square pipe (\square 60 or \square 50)	Slab Panel
KH	Square pipe (\square 60 or \square 50)	H beam

* Assembled products are shipped.

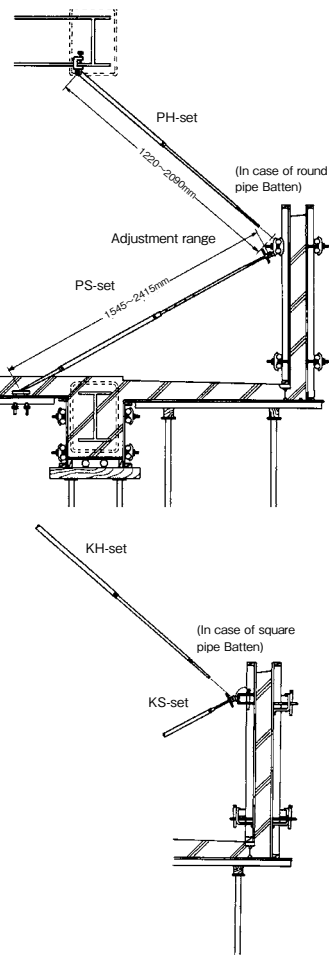
Allowable load	1.56kN (160kgf)
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Cautions

- Use the adjustment bolt with the minimum projection length.
- Be sure to use the product within the allowable load.

Standard parts	<p>External pipe</p>	<p>ø 48.6 pipe holder</p>
	<p>Tapered pipe</p>	<p>Base hardware</p>
	<p>Internal pipe</p>	<p>Square pipe holder</p>
	<p>H-beam clamp</p>	

◆ Work example



Balcony-Wall Prop Hook

Hooking hardware for balcony-wall prop

Product No. B30-0320

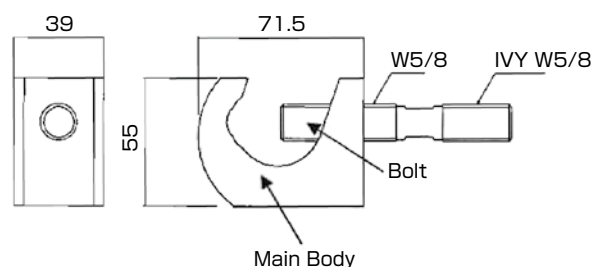


Allowable load 2.45kN (250kgf)

◆Specs

Features

- Attachable to slab rebar of balcony formwork.
- Enables easy and secure installation.
- Reduces the labor of installing balcony wall formwork.
- Applicable for rebar diameters of D19~D35.



◆Quantity per package

- Balcony-Wall Prop Hook (assembled products)

Quantity (pc/bag)	Weight (kg/bag)	Packing
50	16.3	PP bag

- Main body (parts for sale)

Quantity (pc/bag)	Weight (kg/bag)	Packing
100	20.2	PP bag

- Bolt W5/8 (parts for sale)

Quantity (pc/case)	Weight (kg/case)	Packing
100	12.3	Case

Cautions

- Install this product with approximately 19.6~24.5kN·m.

■ Wall Prop

Length-adjustable prop for precast or formwork panel

Product No.	B30-0410
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Features

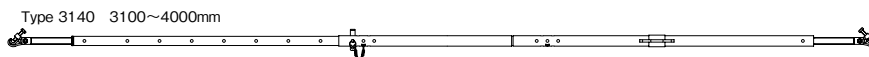
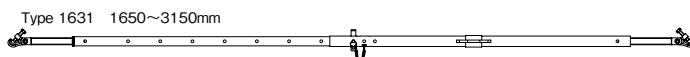
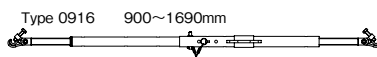
- Secures adjustment and erection accuracy of vertical & precast panels.
- Lightweight and easy to carry.



Product	Weight (kg/pc)
Wall Prop Type: 0916	6.1
1631	10.0
3140	13.0
Option: Inc Base	1.1
Option: Pipe Catcher	0.5

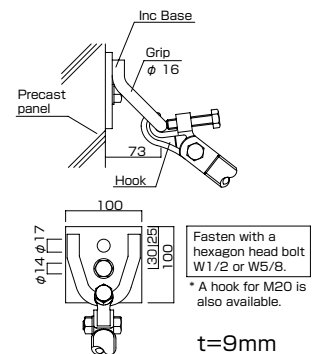
Allowable load	4.90kN (500kgf): 0916 型 & 1631 型
	3.90kN (400kgf): 3140 型

◆ Specs

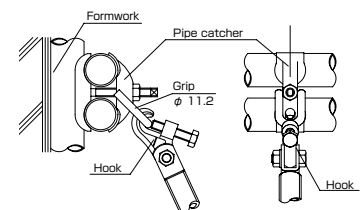
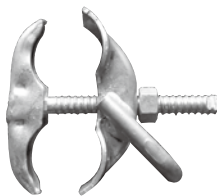


◆ Options

- Inc Base



- Pipe Catcher for round pipes



- Pipe Catcher for square pipes



◆Photos of usage examples



Formwork for bridge parapet

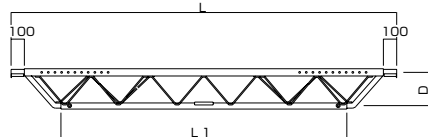
Light-Weight Beam SX

Versatile light-weight beam

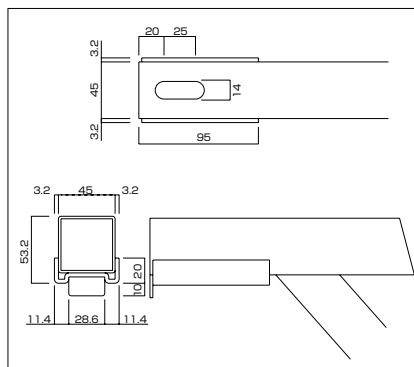
Product No. B30-0510



Shape & dimensions



Detailed drawing of edge



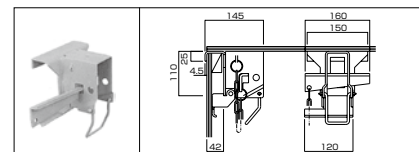
Dimensions and Specs

Model	Dimension of main body (L)(mm)	Dimension of main body (L1)(mm)	Height of main body (D) (mm)	Building frame dimensions (mm)		Weight (kg)	Allowable bending moment kN-cm (kg-cm)
				Use of W-bracket	Steel structure		
Short beam	950~1400	—	—	1055~1555	870~1370	8.4	107 (11000)
Type SX-14	1400~2200	600	200	1505~2355	1320~2170	14.7	451 (46000)
Type SX-22	2200~3800	1440	250	2305~3955	2120~3770	24.7	784 (80000)
Type SX-45	2900~4500	2150	250	3005~4655	2820~4470	29.5	784 (80000)
Type SX-48	3800~4800	3100	280	3905~4955	3720~4770	32.5	980 (100000)

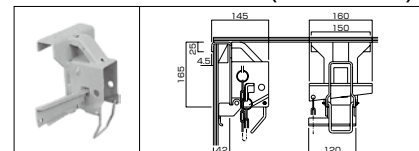
Bracket (For RC and SRC structures)

Without joists			With joists		
Product	Weight (kg)	Allowable strength kN (kgf)	Product	Weight (kg)	Allowable strength kN (kgf)
W-O Rigid Bracket	2.7	7.80 (800)	W-50 Rigid Bracket	3.0	7.80 (800)
R-O Swivel Bracket	3.3	4.70 (480)	R-50 Swivel Bracket	3.7	4.70 (480)

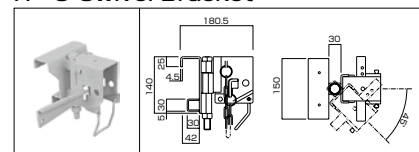
W-O Fixed Bracket



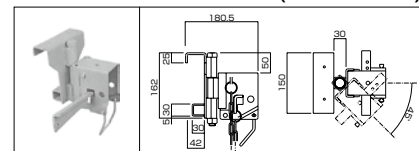
W-50 Fixed Bracket (with Joists)



R-O Swivel Bracket



R-50 Swivel Bracket (with Joists)



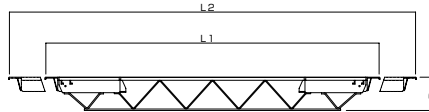
* When rotating brackets are used, the building frame dimension extends by 35mm on each side.

Light-Weight Beam AX

Bracket-integrated light-weight beam



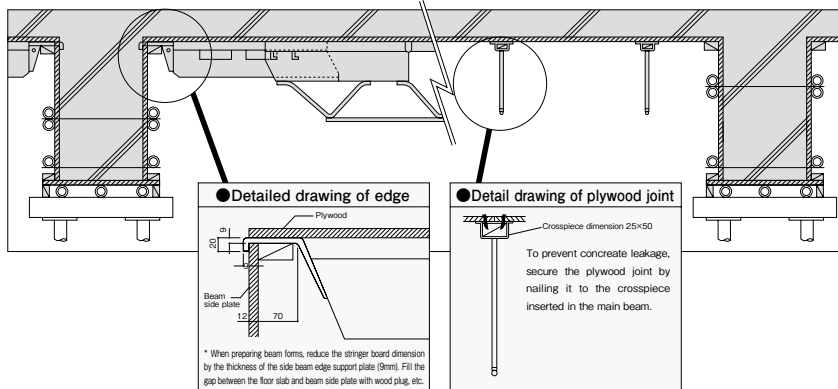
◆Shape & dimensions



◆Dimensions and Specs

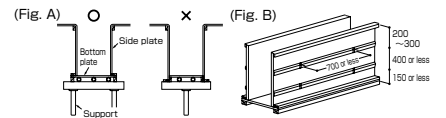
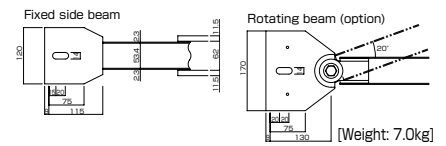
Model	Building frame dimensions (mm)		Weight (kg)	Allowable bending moment kN·cm (kg·cm)	Allowable edge reaction force
	L ₁ L ₂ dimension	Height of main body (D)			
Type AX11-14	1120~1460	163	11.3	196 (20000)	7.05kN (kg/side)
Type AX14-18	1460~1825	163	12.5	196 (20000)	
Type AX18-25	1825~2525	272	19.0	421 (43000)	
Type AX25-32	2525~3225	322	23.0	519 (53000)	
Type AX32-39	3225~3925	322	28.0	598 (61000)	
Type AX39-46	3925~4625	323	35.0	637 (65000)	

* When the rotating side beam is used, the building frame extends by 35mm on one side.



Product No. B30-0520

◆Detailed drawing of edge



Cautions

- [Fig. A] Set Light-weight BeamSX/AX on two legs of supports. Those pair of supports don't have to be right under brackets.
- [Fig.B] Distance between separators of the beam wall panel must be less than 400mm in the vertical direction and also less than 700mm in the horizontal direction.
- Place concrete evenly into the beam formwork panels.
- Never give concentrated load on the product (SX/AX).
- Each beam formwork side plate supports the weight of the slab. Avoid using damaged concrete panels.
- When the height of the beam wall panels are taller than 750mm, install vertical battens.
- Do not use the beam as a load receiving platform.

Cantilever

High intensity scaffolding bracket for H-beam

Product No. B30-0530



◆Specs

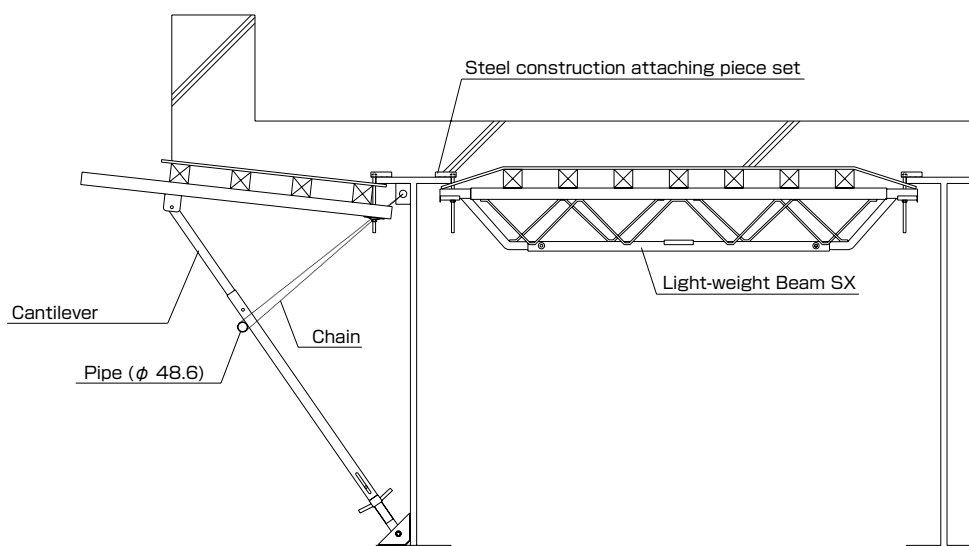
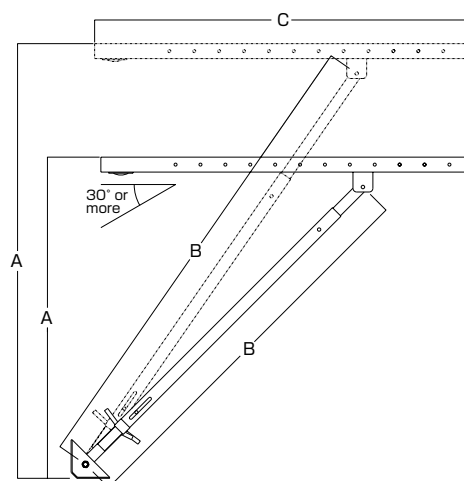
Division	Type	Standard (mm)			
		20 type	30 type	40 type	60 type
A	Minimum available length (mm)	600	900	1220	1820
	Maximum available length (mm)	1000	1500	2100	2900
B	Minimum available length (mm)	880	1055	1450	1900
	Maximum available length (mm)	1130	1555	2240	3100
C	Standard dimension (mm)	1500			
Pin hole spacing (mm)		100			
Number of holes		3	5	8	12
Screw adjusting range (mm)		110			
Weight (kg)		15	17	19	21

Best for slab work of bridges and elevated roads.

Allowable load 9.80kN (1000kgf)

Features

- High strength steel frame provides not only longer pitch of supports, but also accurate and safe formwork.
- Available for various angle of slab panels with its multiple adjustment functions.



ADEKA Ultra Ring

Hydrophilic rubber ring

Product No. B40-0010

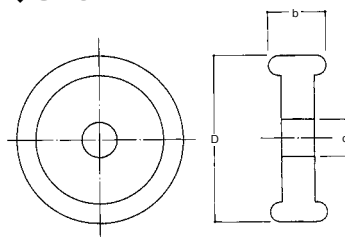
Features

- The ring is made of ADEKA Ultra Seal (B40-0110), water-swelling rubber. It swells the water and stops water penetration through the separator effectively.
- Easy installation.

Cautions

- If concrete structure is faulty, water penetration can't be stopped just by installing the product.
- Install two rings to the separator, avoiding the flat center (See the figure).
- Keep the product dry to prevent initial swelling before placing concrete.
- Wipe off oil on the surface of the separator, before installing the product.

Size



Product	Applicable separator	Quantity (pc/case)	Packing
Ultra Ring 8	W5/16	500×2	Case
9	W3/8	500×2	
12	W1/2	500×2	
16	W5/8	500	

Product	D	d	b
Ultra Ring 8	φ24.0	φ6.0	7.0
9	φ24.0	φ7.2	7.8
12	φ30.0	φ9.6	8.2
16	φ35.0	φ12.8	10.1

* ADEKA Ultra Ring 16 is Made-To-Order.

ADEKA Ultra C Ring

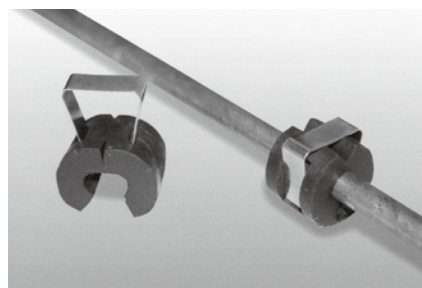
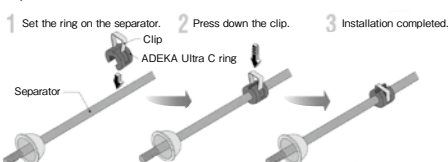
Post-fitting hydrophilic rubber ring

Product No. B40-0020

Features

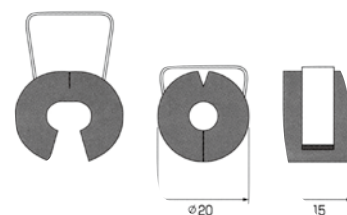
- The ring is made of ADEKA Ultra Seal (B40-0110), water-swelling rubber. It swells the water and stops water penetration through the separator effectively.
- Easy installation even after the completion of formwork assembly.

How to use



Product	Applicable type	Quantity (pc/case)	Weight (kg/case)	Packing
Ultra C Ring 8	W5/16	1000	7.0	Case
Ultra C Ring 9	W3/8	1000	7.0	

Size



Cautions

- If concrete structure is faulty, water penetration can't be stopped just by installing the product.
- Install two rings to the separator, avoiding the flat center (See the figure).
- Keep the product dry to prevent initial swelling before placing concrete.
- Wipe off oil on the surface of the separator, before installing the product.

ADEKA Ultra Seal

Hydrophilic sealants

Product No. B40-0110

Type :MC



Water-stop for concrete joints

Type: P-201 / P-101



Water-stop for variety of concrete joints, gaps and cracks.

Features

- Lightweight sealant with excellent workability.
- Water swelling in the longitudinal direction is restrained.

Features

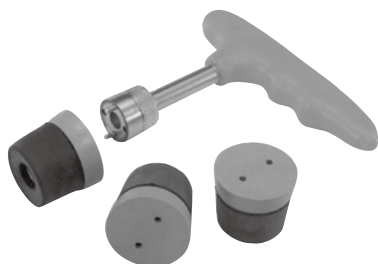
- One-component adhesive.
- Does not drip easily and offers excellent adhesive properties.

Product
Ultra Seal MC 2005T×10M
2010M×10M
2010M×25M
2010MP×25M
P-201
P-101
Ultra adhesive bond H-1000

ADEKA Ultra Cone

Hydrophilic sealing cone

Product No. B40-0210



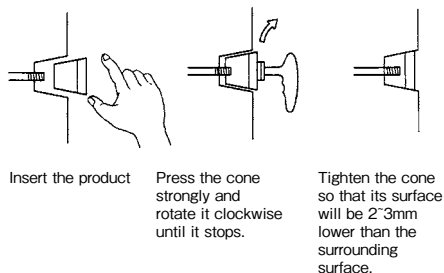
Product	Applicable plastic cone	Quantity (pc/case)	Packing
ADEKA Ultra Cone -8	12-8	100×5	Case
ADEKA Ultra Cone -9	12-9	100×5	Case

* One Ultra Wrench is included for each case.

Features

- Easy installation with Ultra Wrench (B40-0220).
- Stops water penetration by swelling water.

◆How to use



Cautions

- The product is designed according to the Plastic Cone dimensions. Be sure to use the right size of the product.
- Remove sand, dust, etc., from the holes before inserting the product.
- In order to strengthen the waterstop function, the installation of ADEKA Ultra Ring (B40-0010) or ADEKA Ultra C Ring (B40-0020) are highly recommended with the product.

Ultra Cone Wrench

Wrench for screwing ADEKA Ultra Cone

Product No. B40-0220

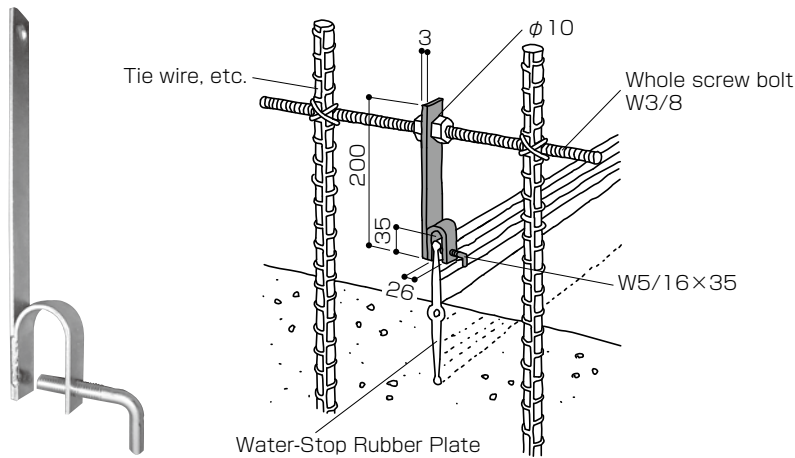


Product	Weight (kg/case)
Ultra Cone Wrench	0.15

Rubber Plate Hanging Hook

Hanging hook for water-stop rubber plate

Product No. B40-0310



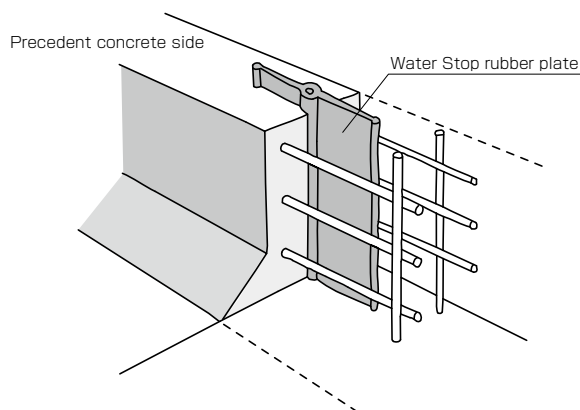
Features

- Enables accurate and easy installation of water-stop rubber plate.
 - Concrete can be placed uniformly around the product, so as to the board works properly to stop water penetration.
 - Can be easily adjusted for various sizes of concrete structures.
- * Use the product every 600-900 millimeters.
- * Made-To-Order is available for W3/8 whole screw bolt (Nut is sold separately).

Water-Stop Rubber Plate

Water sealing plate for concrete joint

Product No. B40-0320



Features

- Adheres as concrete hardens.
- Flexible and easy to fit various shapes of the structure.
- Does not melt in summer nor become brittle in winter.
- Excellent self-adhesiveness and workability.
- Adhesiveness and flexibility are hardly changed after installation.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

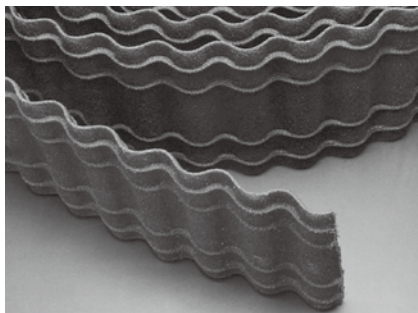
Civil Engineering

ADEKA Stopper

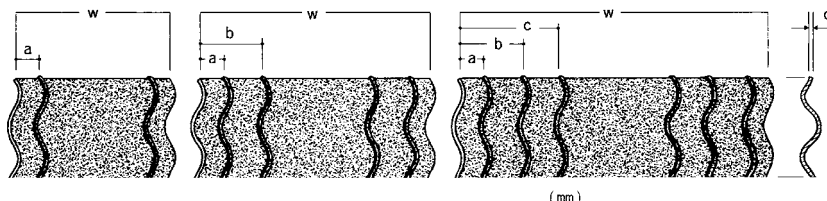
Product No. B40-0330

Post-installing polyethylene resin waterstop plate

◆Size



Excellent for preventing water penetration of floor and wall concrete joints, etc.



Product	a	b	c	d	Length (m)/box	Weight (kg)/box
VE-100	15	—	—	3	20	7
VE-150	15	40	—	3	20	11
VE-200	15	40	65	3	20	14

Features

- Water-pressure resistant capability is over 0.3MPa.
- Adheres firmly to concrete.
- Lightweight and easy to handle .
- Easy installation.
- Can nail the stopper.

Cautions

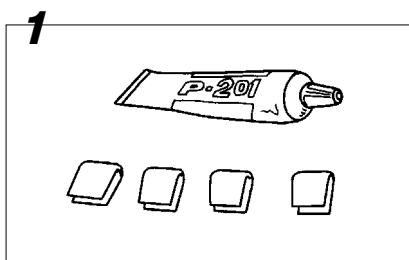
- Do not use the product in the part of expansion joints of concrete.

◆Installation Manual (for unhardened concrete)

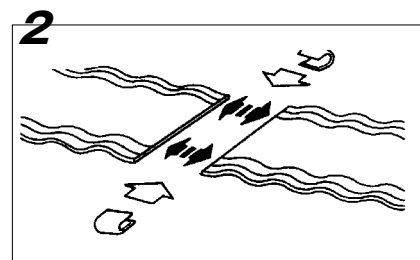


Push the product in the fresh concrete BEFORE it is hardened.

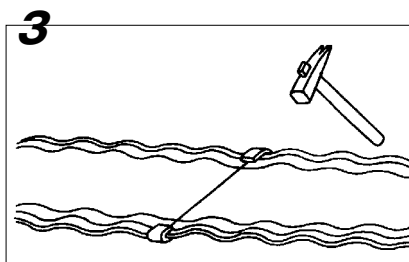
◆Jointing method



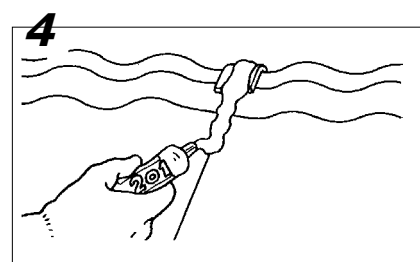
The set of the product consists of four pieces of connecting clips and one water swelling sealant P201.



Use two clips to connect the product.



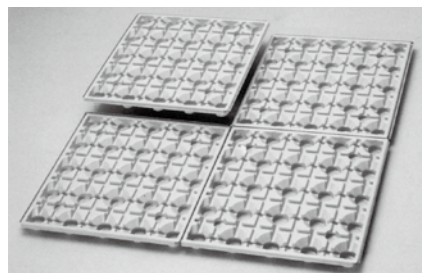
Tighten the clips with pliers, hammer, etc.



Apply P-201 on the front and the back surfaces of the connected part with the width of approximately 20mm. Be sure to cover the connecting clips with the sealant. Even if P-201 is not hardened, the product can be installed.

Seepage Water Treatment Panel

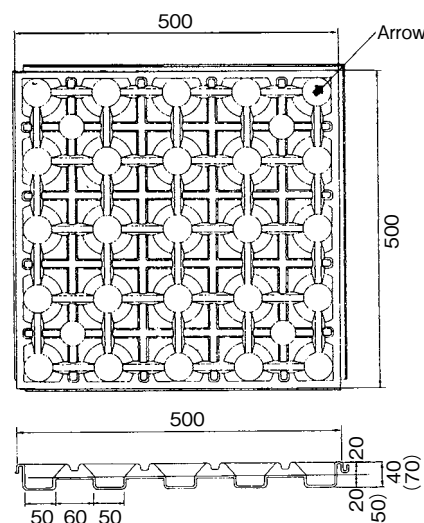
Treatment panel of seepage water



The conventional double slab structure consists of pressure-resistant board, footing beam, and upper slab.

However, the installation of this product enables the mat slab structure, and reduces the construction period and labors.

Size



Product	Dimensions (mm)	Weight (kg/pc)	Quantity (pc/band)	Weight (kg/band)	Packing
Type 40	500×500×40H	0.55	20	11	Secured with band
50	500×500×50H	0.58	20	12	Secured with band
70	500×500×70H	0.88	20	18	Secured with band

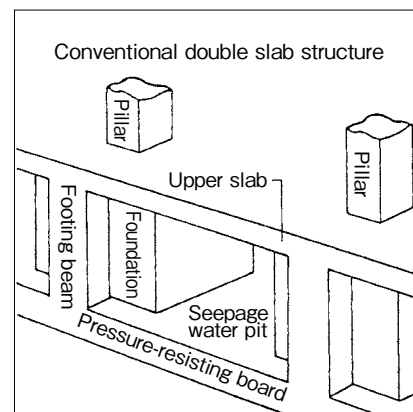
Features

- Very light and easy to handle on-site. Cutting and processing panels to adjust dimensions around pillars or walls are also easy.
- Rust-proof because of non-water-absorbing plastic panels.
- To connect the product, place the top rib of the product to the other.
- The product is impact-resistant plastic made of high impact poly-styrene and general-purpose polystyrene.
- Three different heights are available depending on the amount of seepage water (H40 as a standard size, and H50 and H70).

Cautions

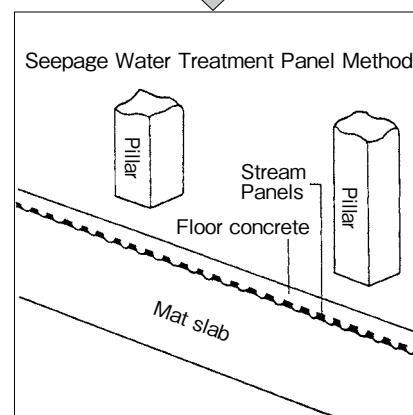
- When storing panels, beware of fire, since panels are made of plastic.
- Be sure to read the technical document when executing construction work.

Product No. B40-0410



Double slab structure requires...

- (1) Excavation of a deep pit requires digging out and disposing of a large amount of soil, as well as a high drainage cost;
- (2) Formwork construction workload increases; and
- (3) The construction period tend to be extended because of complicated assembly of rebar and formwork.



The mat slab structure can be applied by employing the above Method. As a result :

- (1) Reduce earthwork cost because of less earthwork volume.
- (2) Reduce formwork cost with a single slab structure.
- (3) Shorten work period with its simple structure.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

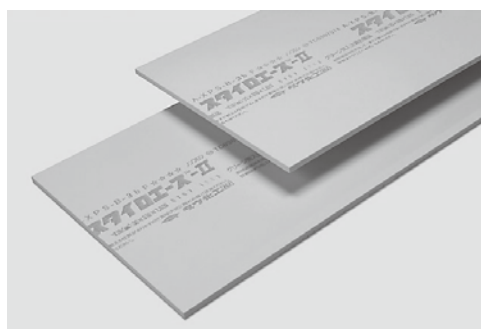
Styrofoam

Expanded polystyrene thermal insulation board

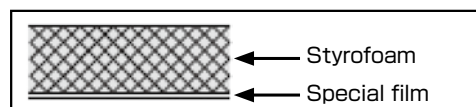
Product No. B50-0010

CFC-free

Type	Product	Thermal conductivity (W/m · K)	Thickness (mm)	Width (mm)	Length (mm)
1-b	IB	0.040 or less	15 · 20 · 25 · 30 · 35 · 40 · 50 · 75 · 100	910	1820
2-b	B 2	0.034 or less	20 · 25 · 30 · 40 · 50		
3-b	AC E II	0.028 or less	20 · 25 · 30 · 35 · 40 · 45 · 50 · 55 · 60 · 65 · 75 · 100		
3-b	EX	0.024 or less	25 · 30 · 45 · 50 · 55 · 60		
3-b	Pit Work *	0.028 or less	30 · 35 · 40 · 45 · 50		



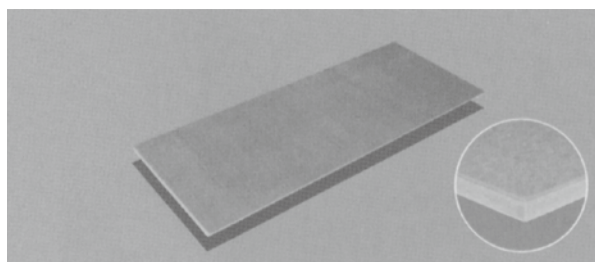
* Pit Work is a thermal insulation panel concurrently working as a slab formwork panel. Since it is not necessary to remove the panel after placing concrete, shortening of the work period and labor saving is possible.



NEOMA Foam : Fireproof

Fireproof phenolic-foam insulation board

Product No. B50-0110



Incombustible

Incombustible material: NM-3165

High density (40k) product

Foam material	Face plate	Density	Thermal conductivity *1
Phenolic foam	Polyester nonwoven fabric + special resin coat, inorganic board with 1mm in thickness	40kg/m ³ (Excluding inorganic boards)	0.021W/(m·k)

*1 The thermal conductivity for 12mm in thickness is 0.020 W/(m·k)

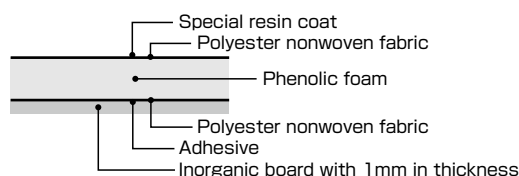
Product standard

Product made to order

Product number	Thickness (mm)		Width (mm)	Length (mm)	Thermal resistance [(m ² ·k)/W] ²	
	Foam	Total thickness				
13UF45	12	13	450	1800	0.60	
13UF90			900			
22UF90	21	22			1.00	
26UF90	25	26			1.19	
34UF90	32.5	33.5			1.54	

*2 The insulation performance of NEOMA Foam UF is represented by the insulation performance of the foam alone. (The insulation performance of the inorganic board is not included.)

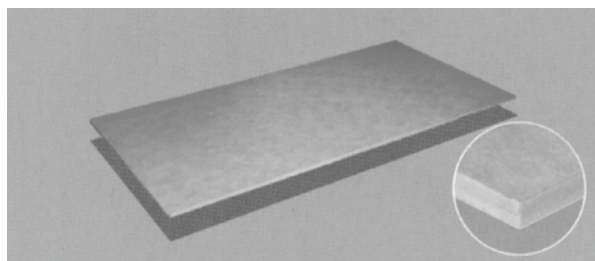
Cross section drawing



NEOMA Foam

Phenolic-foam insulation board

Product No. B50-0120



Insulation reinforcement

High density (40k) product

Foam material	Face plate	Density	Thermal conductivity *1
Phenolic foam	Polyester nonwoven fabric + special resin coat	40kg/m ³	0.021W/(m·k)

*1 The thermal conductivity for 12mm in thickness is 0.020 W/(m·k)

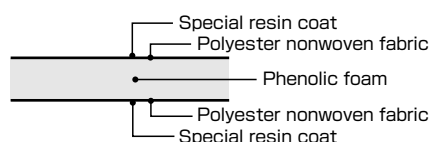
Product standard

Product made to order

Product number	Thickness (mm)	Width (mm)	Length (mm)	Thermal resistance [(m ² ·k)/W]
12DH45	12	455	1820	0.60
12DH49*2			2730	
12DH60		600	1820	
12DH69*2			2730	
12DH91	21	910	1820	1.00
21DH91				1.19
25DH91	25			

*2 The two items (12DH49 (12×455×2,730) and 12DH69 (12×600×2,730)) are limited to the Kanto-Koshinetsu and Tohoku regions.

Cross section drawing



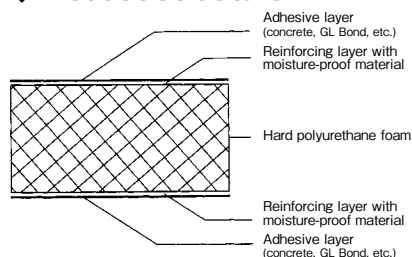
Achilles Thermal Insulation Board

Concrete-panel-free thermal insulation board

Product No. B50-0210

Product	Thickness (mm)	Width (mm)	Length (mm)
Vertical use NK-20	20	900 1200	1800 5000
NK-25	25		
NK-30	30		
Horizontal use (for slab) S-25	25		
S-30	30		

◆Product structure



▶ S-series(Horizontal Use) has polyethylene film on one side

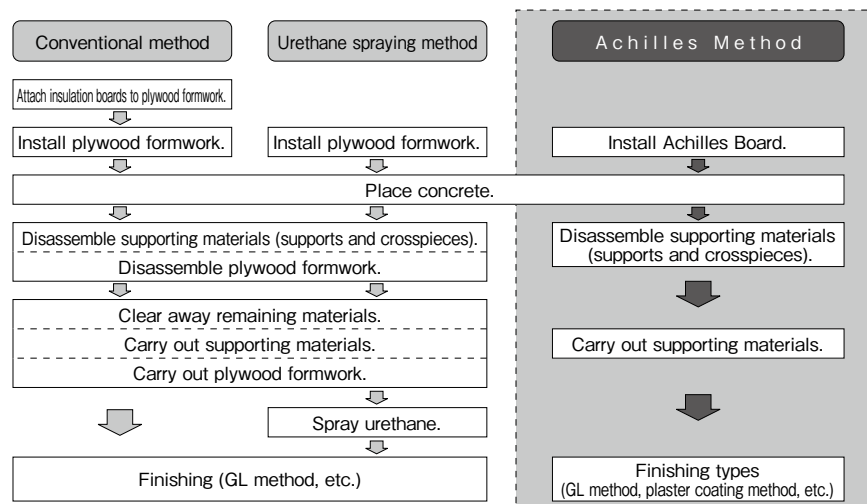
◆Adhesion performance of Achilles Thermal Insulation Board

Adherend	Unit	Material age			
		3 days	7 days	28 days	60 days
Concrete	N (kgf/cm ²)	Average 12.7 (1.3)	Average 13.7 (1.4)	Average 13.7 (1.4)	Average 19.6 (2.0)
GL Bond	N (kgf/cm ²)	Average 13.7 (1.4)	Average 13.7 (1.4)	Average 14.7 (1.5)	Average 19.6 (2.0)

Features

- Works as formwork panels.
- Solidly-made, and the wide spaced batten pitch of 200~250mm available.
- Contributes to energy saving provided by superior insulation performance of the hard poly-urethane foam.

◆Comparison



◆Specs

Item		Unit	Performance					Remarks
			Vertical Use (NK-series)			Horizontal Use (S-series)		
			20mm	25mm	30mm	25mm	30mm	
Form density		Kg/m ³	55	←	←	37	34	
Weight		Kg/m ²	2.78	3.06	3.34	1.73	1.86	
Thermal conductivity		kcal/mh°C	0.018	←	←	←	←	Compliant with ASTM C518 (0°C)
Flexural rigidity (EI value)	Longitudinal direction	kN/cm ² (kgf/cm ²)	94.0(0.96×10 ⁴)	147(1.50×10 ⁴)	211.0(2.16×10 ⁴)	92.0(0.94×10 ⁴)	132.0(1.35×10 ⁴)	Compliant with JIS A 1414
	width direction	kN/cm ² (kgf/cm ²)	39.0(0.40×10 ⁴)	61.7(0.63×10 ⁴)	88.0(0.90×10 ⁴)	38.0(0.39×10 ⁴)	54.0(0.56×10 ⁴)	
Shearing rigidity		kN(kgf)	1.42(145)	1.7(180)	2.1(215)	1.0(110)	1.1(120)	Compliant with ASTM D 732
Compressive strength		kN/cm ² (kgf/cm ²)	0.44(4.5)	←	←	0.24(2.5)	0.19(2.0)	Compliant with JIS A9514
Allowable bending stress	Longitudinal direction	kN/cm ² (kgf/cm ²)	1.17(120)	←	←	1.06(109)	←	
	width direction	kN/cm ² (kgf/cm ²)	0.63(65)	←	←	0.55(57)	←	
Vapor resistance		m ² ·h·mmHg/g	600以上	←	←	400以上	←	Compliant with JIS Z 0208

◆Option Parts

- S Joinder
- Form Tie with 3-Shaped Rib
 - Plastic Nail
 - Achilles Board tape
 - Board insert
- Resin cap
- V cutter for corner
- Floor transition materials for inner/ outer corners
- Board Keeper

◆Work examples

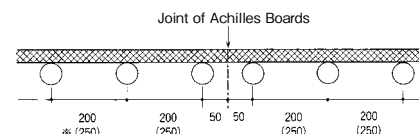


<Wall>



<Pillar>

◆Example of vertical supports



Board width	Direction of use	
	Portrait	Landscape
20, 25, 30mm	200mm	250mm

* The above figures in parentheses are applied in the case of the board used in landscape.

[Condition] ○ Lateral pressure: 39.2kN/m² (4tf/m²)
○ Use pipes.



<Beam>

Cautions

- Transport the product with care to avoid corner chipping and surface damage.
 - Place the product flatly on a level plane near the installation place.
 - As a precautionary measure, cover the products with a sheet, etc., to prevent exposure to direct sunlight and rain.
 - Do Not weld nor fuse the installed product. If welding or fusing are inevitable required during the construction process, pay sufficient attention. Make sure to prepare a fireproof sheet and fire extinguisher, and perform welding or fusing with the presence of a supervisor.
 - In exterior-wall finishing, dry the concrete as much as possible before applying exterior walls, particularly if they are hardly breathable.
- * Dry concrete until its moisture content becomes approximately 10% or less.

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

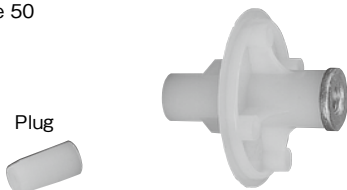
Civil Engineering

Separator Joint : Thermal Insulation Board

Product No. B50-0310

- Separator joint
- Holding plate for thermal insulation board

Type 50

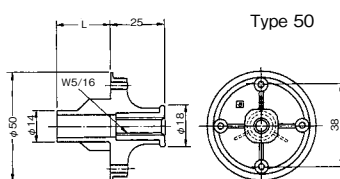


Type 80

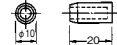


Product	Applicable insulator thickness	L mm	Thread diameter	Quantity (pc/case)	Weight (kg/case)	Packing
Type 50-20	20	20	W5/16	400	10	Case
Type 50-25	25	25			10	
Type 50-30	30	30			10	
Type 50-38	38	38			11	
Type 50-40	40	40			11	
Type 50-50	50	50			11	
Type 50	Free size	—	W5/16	500	12	Case
Type 80	Free size	—		500	16	

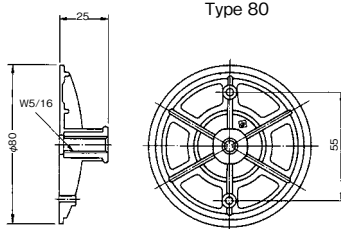
◆Size



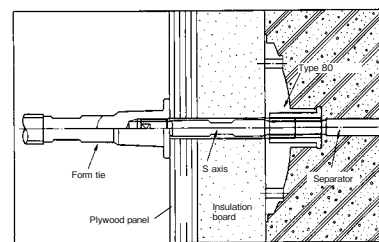
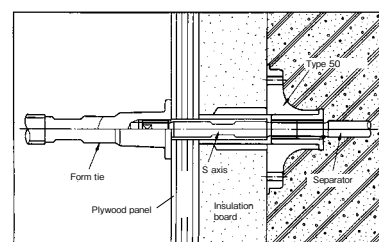
Plug



Type 80



◆How to use



Cautions

- The diameter of the separator hole in the formwork panel should be ϕ 10mm or less to keep the product from sticking out through the panel.
- Make sure to check the back side of the product for the applicable thickness of thermal insulation board (Type 50).
- Matched axis is required for the installation.
- Please purchase a tool separately to make holes in the thermal insulation board.

Board Holding Plate

Product No. B50-0320

Resin plate for temporary joint of thermal insulation board



A



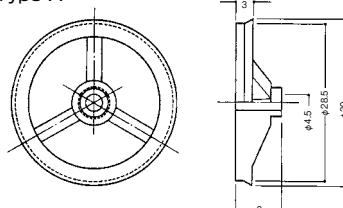
B

Features

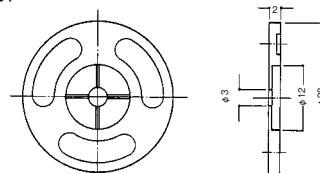
- Thermal insulation boards can be securely fixed on formwork panels.
- The product remains in the concrete, so that thermal insulation boards won't be damaged by removing formwork panels.

◆Size

(1) Type A

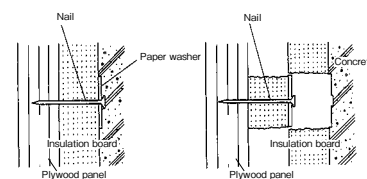


(2) Type B



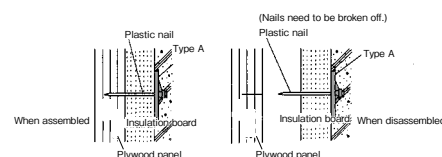
◆Comparison

Conventional method

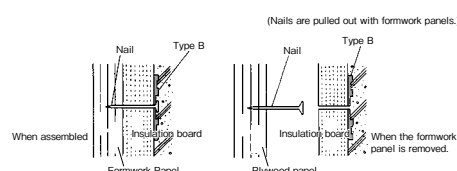


Board Holding plate method

(1) Type A

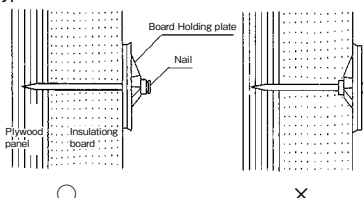


(2) Type B



Cautions

Type A

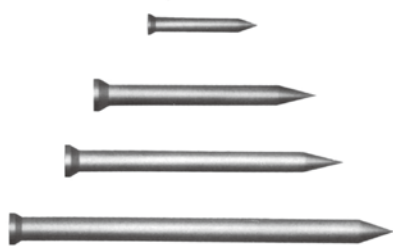


- To install the product, apply its flat side to the thermal insulation board. If it is installed the other way around, the concrete surface will come off and damage the thermal insulation board.
- Nail the product just enough to press down the thermal insulation board. Hitting the product too hard will cause it to sink in the thermal insulation board, resulting in the loss of the anchor effect.

Plastic Nail

Plastic resin nail

Product No. B70-0010



Features

- Easy post-treatment by smashing it with a hammer (Sander-less).
- Totally rustless.

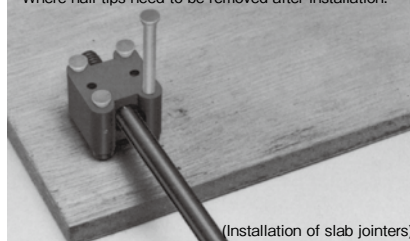
Cautions

- Make sure to hammer the product straight.
- Consider strength suitable for applications.

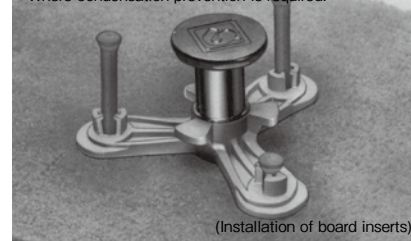
Product	Dimensions (mm)	Quantity (pc/case)	Weight (kg/case)	Packing
Plastic Nail 20	$\phi 2.7 \times 20$	300 × 50	15	Case
40	$\phi 3.8 \times 40$	100 × 50	5	
50	$\phi 3.8 \times 50$	100 × 50	5	
70	$\phi 4.5 \times 70$	50 × 50	5	

How to use

Where nail tips need to be removed after installation.



Where condensation prevention is required.



In addition, nails can be used to install chamfer strips, joint strips, wood blocks and various inserts.

Ceiling Insert

Ceiling insert with nails

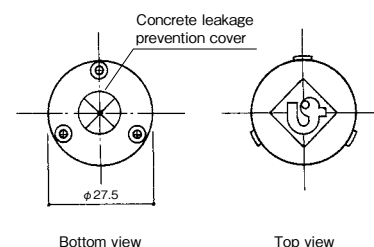
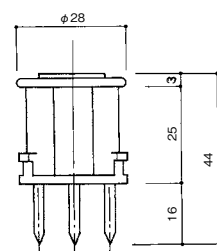
Product No. B70-0110



Features

- Easy installation with a hammer.
- The bolt hole in the resin part has a concrete leakage prevention cover.
- Five colors available.

Product	Thread diameter	Quantity (pc/case)	Weight (kg/case)	Packing
Ceiling Insert White	W3/8	500	15	Case
Red				
Green				
Yellow				
Blue				



A Temporary Construction

B Concrete Formwork

C Rebar Work

G Civil Engineering

Ceiling Insert : Steel Deck Plate

Product No. B70-0120

Ceiling insert for steel deck plate



Features

- Simple and functional workability.
- Can be securely fastened to a deck plate.
- Can be installed with one touch operation, just by making a hole.
- The head is embedded in concrete to obtain secure anchoring effects.

Product	Thread diameter	Drill diameter (mm)	Quantity (pc/case)	Weight (kg/case)	Packing
DC-3040 White	W3/8	15.0	250	10	Case
Red					
Green					
Yellow					
Blue					
DC-3060 White			200	11	Case
Red					
Green					
Yellow					
Blue					

Insert : Window Frame

Product No. B70-0210

Insert for window frames

L-Shaped Insert : Double-Deck



L-Shaped Insert



L-Shape Insert with Expanded Polystyrene



Product	Quantity (pc/case)	Weight (kg/case)
L-Shaped Insert : Double-Deck	500	19
L-Shaped Insert	—	—
L-Shape Insert with Expanded Polystyrene	—	—

Drafttight

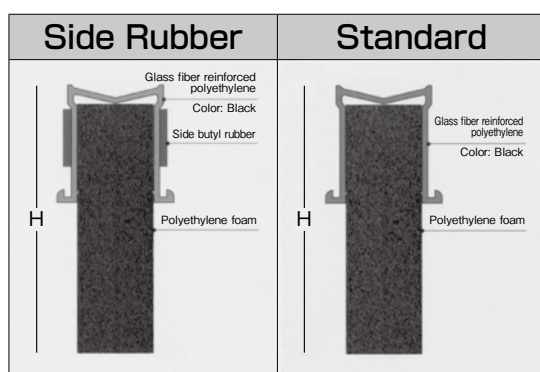
Elastic concrete joint filler

Product No. B80-0010



Features

- Excellent in functionality, aesthetics, workability and economy.
- Reliable and secured product.



- Length: 1,500mm
- Please specify H (height) when ordering
- Accessories

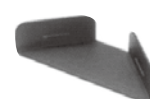
Base Plate
(3 pcs / product)



Joint Plate
(1 pc / product)



Corner Joint Plate
(0.7 pc / product)



A
Temporary
Construction

B
Concrete
Formwork

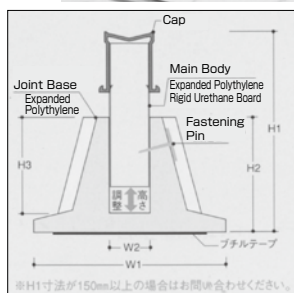
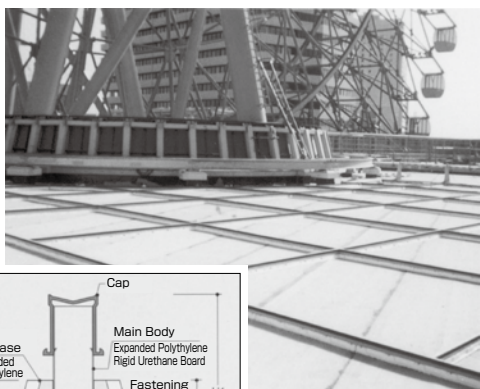
C
Rebar Work

G
Civil
Engineering

Mejitack

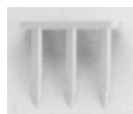
Elastic concrete joint filler

Product No. B80-0110

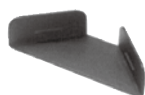


- Length: 1,000mm
- Adhesive tape is preset at the bottom.
- Accessories

Fastening Pin
(6 pcs / product)



Corner Joint Plate
(0.7 pc / product)



Joint Plate
(1 pc / product)



"Mejitack" consists of a joint base and a elastic joint filler.
To prevent cracks, Mejitack provides complete separation from the surface to the bottom of the covering concrete.

● Dimensions

Symbols on the Left Figure	Large Joint Base	Medium Joint Base
W1	95mm	80mm
W2	20mm	20mm
H1	60mm	40mm
H2	50mm	30mm

- Length: 1,000mm
- Adhesive tape is preset at the bottom.

- Side Rubber type and Standard type are available.

Sliton

Slit material for column & wall

Product No. B90-0210

■ Sliton Type A (vertical complete slit type)

	Type A2	Type AE2 (joint width 20mm type)
Shape		
Slit width W [mm]	25-30-35-40-50	25-30-35
Slit material	High-performance phenolic foam	High-performance phenolic foam
Fireproof material	2 hours	2 hours
Standard length	2m	2m
Minimum wall thickness [mm]	120 when W = 25, 30, 35 130 when W = 40, 50	115

⚠ Use reinforcing metal.

Joint strip (standard joint strip size)

	Type A2	Type AE2
Slit width W = 25mm		
Slit width W = 30, 35, 40, 50mm		

* Be sure to consult with us when applying different size of strip of its size.

⚠ The sealing depth may not be secured when applying an unlisted joint strip.

Features of type A2

- Meets all the requirements of fireproof, soundproof, and waterproof standards.
- High-performance phenolic foam (foam based on phenolic resins produced without using Freon gas) is an environment-friendly material with excellent heat, fire and chemical resistance.
- Shaped to be positioned between joint strips so that deformation due to lateral pressure can be reduced.
- Reinforcing metals can be used together, making installation with higher precision possible.
- The flashing functionality of ribs provides excellent water cut-off performance.

■ Sliton Type HW (horizontal complete slit type)

Type	HW-RW*1	HW-P
Shape		
Slit width W [mm]	20-25-30-35-40-50	20-25-30-35-40-50
Slit material	Polyethylene foam	Polyethylene foam
Fireproof material	Rock wool	—
Fire-resistance performance	2 hours	Non fire resistance
Standard length	2m	2m
Minimum body thickness t [mm]	80*2	30

*1 When the body thickness t is less than 110mm, the dimension differs from the above.

*2 When the desired body thickness t is less than 80mm, please consult us.

Features of type HW

- Meets all the requirements of fireproof, soundproof, and waterproof standards (except type P regarding fireproof).
- Complete (thorough) slit and partial slit are possible depending on the adopted dimension.
- Excellent one-site workability.
- Options are available such as cut type and waterproof type.

■ Sliton Type A (vertical complete slit type)

	Type A1	Type AE1 (joint width 20mm type)
Shape		
Slit width W [mm]	25-30-35	25-30-35
Slit material	High-performance phenolic foam	High-performance phenolic foam
Fireproof material	2 hours	2 hours
Standard length	2m	2m
Minimum wall thickness [mm]	110	105

⚠ Use reinforcing metal.

⚠ Use reinforcing metal.

Joint strip (standard joint strip size)

	Type A1	Type AE1
Slit width W = 25mm		
Slit width W = 30, 35mm		

* Be sure to consult with us when applying different size of strip of its size.

⚠ The sealing depth may not be secured when applying an unlisted joint strip.

Features of type A1

- Meets all the requirements of fireproof, soundproof, and waterproof standards.
- High-performance phenolic foam (foam based on phenolic resins produced without using Freon gas) is an environment-friendly material with excellent heat, fire and chemical resistance.
- Optimum in case Sliton is concealed when the interior wall is finished.
- The flashing functionality of ribs provides excellent water cut-off performance.

■ Sliton Type HW (horizontal slit type)

Type	HW Barrier X	HW Barrier	HW-G10
Shape			
Slit width W [mm]	25	20-25	20-25-30-35-40-50
Standard joint strip size	For W20: 25×25×20 (Separate) For W25: 25×25×20 (Separate) For W30, 35, 40, 50: —	20×20×15 (Separate) 25×25×20 (Separate) —	20×20×15 (Included) 25×25×20 (Included) 30×25×25 (Included)
Accessories	10 cut nails	10 cut nails	10 cut nails, foamed joint strip
Standard length	2m	2m	2m
Product dimensions [mm]	55*1	55 when W=20*1 70 when W=25*1	55*1*2

*1 HW auxiliary materials may have cross sectional defective areas. Please confirm with the structural engineer prior to use.

*2 When combined with diagonal cut type (type C), the product dimensions are 55 → 65 (with W=35), 55 → 70 (with W=40), and 55 → 80 (with W=50).

Features of HW barrier

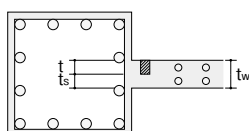
- For horizontal slits, 50mm of concrete cover depth can be secured (according to the Structural Slit Work and Control Manual issued in October 2001 by Building Contractors Society)
- Prevents "honeycombs" that tend to occur around construction joints.
- The product has air vent holes at 300mm intervals, which prevent air pockets below joints and "honeycombs," and allows concrete filling to be confirmed visually.
- When the product is formed, soft water stop is simultaneously formed to prevent water penetration through joints.

■Sliton Type G (partial slit type)

Type	G-5	G-6	G-7	G-9	G-10	G-11 (S)	G-11 (L)
Shape							
Slit width W	20	—	—	—	Joint strip 20×15×15	○	○
	25	○	Joint strip 20×20×15	○	Joint strip 25×25×20	Joint strip 25×15×20	○
	30	○	Joint strip 20×20×15	○	Joint strip 30×25×25	Joint strip 30×15×25	○
	35	○	Joint strip 20×20×15	○	Joint strip 30×25×25	Joint strip 30×15×25	○
	40	—	—	○	Joint strip 30×25×25	Joint strip 30×15×25	○
	50	—	—	○	Joint strip 30×25×25	Joint strip 30×15×25	○
Accessories	10 cut nails	10 cut nails Foamed joint strip	10 plastic nails	10 cut nails Foamed joint strip	10 cut nails Foamed joint strip	10 plastic nails	10 plastic nails
t dimension*1 (Product dimension)	50~70	60~80	50~70	60~80*3 65~80	30~70*2	30~70	70~100
Standard length	2m	2m	2m	2m	2m	2m	2m
Slit material/foamed polyethylene							

- ! *1 When the product dimension exceeds the above dimension t, separate reinforcement is required. *3 60~80 when 3W = 25, 30, 35
*2 The minimum product dimension is 30. 65~80 when 3W = 40, 50

<Concept of partial slit>



When the wall thickness (tw) is 140 or less, the remaining wall thickness (ts) is tw/2 or less.
(Example: When the wall thickness is 130, the remaining wall thickness is 65 or less, and the slit is 65 or more.)

When the wall thickness (tw) exceeds 140, the remaining wall thickness (ts) is 70 or less.
(Example: When the wall thickness is 150, the remaining wall thickness is 70 or less, and the slit is 80 or more.)

Features of type A1

- A complete (shear type) slit is formed depending on the combination.
- Specifications are available according to fitting.
- Use of reinforcing metals makes installation with a high degree of fixation possible.

Cautions

①Handling precautions

- Store the product avoiding exposure to direct sunlight and moisture.
- Avoid contact with sharp objects and corners to prevent physical damage.
- Dispose the product in accordance with the rules and regulations of its region.

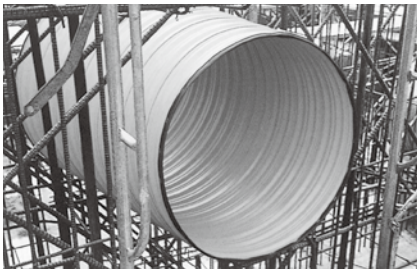
②Installation precautions

- Component materials of Sliton are combustible, except for some incombustible materials. When fire is used out of necessity, provide appropriate protection.
- Before using Sliton, be sure to confirm installation procedures, concrete placing conditions and method, as well as precautions for each type to ensure proper use.
- Be sure to wear safety glasses and dust mask when cutting the product.
- Be careful for the protruding nails on the formwork panels.

Winding Sleeve

Winding sleeve for through-hole

Product No. B90-0310



◆List of nominal diameters D φ

Nominal diameters
400
450
500
550
600
650
700
750
800
900
1,000

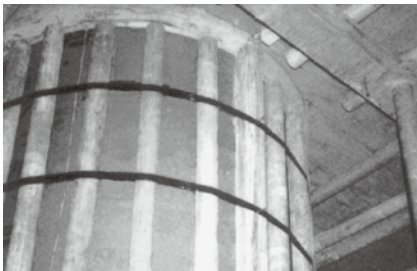
Features

- Highly durable.
- Made-To-Order is available
- Can be used as permanent formwork, and eliminates disassembly.
- Galvanizing and PVC coatings are available

Cylindrical Paper Formwork

Light-weight cylindrical paper formwork

Product No. B90-0320



◆Size

Inside diameter mm	50	75	90	100	125	150	175	200	250	300	350	400	450	500
Outside diameter mm	54	80	96	106	131	157	182	208	259	311	362	413	464	515
Inside thickness mm	2.0	2.5	3.0	3.0	3.0	3.5	3.5	4.0	4.5	5.5	6.0	6.5	7.0	7.5
Weight kg/4m	1.1	2.0	2.4	2.6	3.7	5.1	6.0	7.7	9.7	15	18	23	27	33
Inside diameter mm	550	600	650	700	750	800	850	900	950	1000	1100	1200		
Outside diameter mm	566	616	667	718	769	819	871	921	971	1021	1126	1228		
Inside thickness mm	8.0	8.0	8.5	9.0	9.5	9.5	10.5	10.5	10.5	10.5	13.0	14.0		
Weight kg/4m	38	45	48	55	63	67	79	83	88	92	126	147		

- The standard length is 4m.

Features

- Lightweight and easy to handle.
- Excellent durability.
- Tubes are made from special water-resistant board, and can be cut with a saw and nailed.
- Special film on the tube surface enables easy separation of formwork.
- Single-piece and Two-pieces are available.
- Please consult with us for the longer length.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

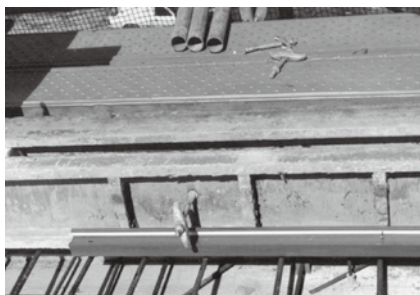
G

Civil Engineering

Balcony Chamfer

PVC chamfer for balcony gutter

Product No. B90-0330



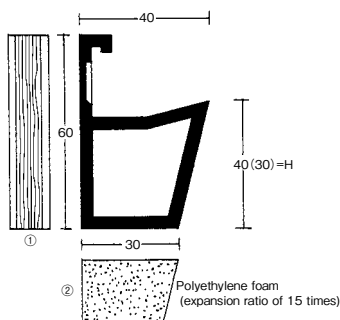
Features

- Since this product is made of PVC, it is free from warp or twist, and formwork can be cleanly removed.
- After the concrete hardens, no chipping work required for the slope or corner area of the balcony gutter.
- Can be reused at least 10 times, which substantially reduces the cost per use.
- Since the product is hollow, it is lightweight and easy to carry.
- Can be cut with a circular saw as necessary. The product be easily connected with the included joint material.
- Made-To-Order available ter curved-corners to your specifications.

Product	Total length (m)	Height H	Quantity(pc/case)
Balcony Chamfer H40	2	40	15
H30	2	30	25

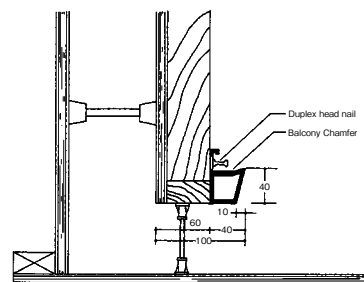
Size

- When the cutoff width is 100mm or more, attach plywood ①, etc.
- When the cutoff depth is 40mm or more, paste backup material ②.
- For cut ends, use joint material.



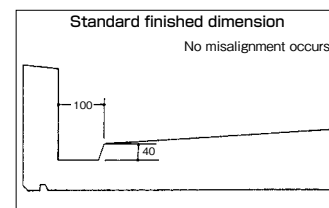
Working method

- (1) Fasten this product to a batten with duplex head nails, etc., as shown in the figure below.
 - (2) After placing concrete, be sure to remove the nails first, and then take out this product before disassembling formwork.
- * Do not open formwork with a pry bar, etc.
* For cut ends, use joint material.



Curved-corner, joint materials and nail size

Curved-corner material (universal)	Joint material	Duplex head nail



Air Fence

Product No. B90-0350

Concrete retaining air fence for concrete joint



Features

- Easy installation and workability.
- Lightweight and flexible.
- Concrete adherence-free material.
- Highly durable.

Cautions

- For quantity calculation, increase width, thickness, and length by 10% respectively.
- Air pressure should not exceed 6.8N/cm^2 (0.7kgf/cm^2). (Use a mini compressor.)
- Beware of fire and projections such as nails.

Installation process	Time required	
	Air fence	Conventional method
Install joint air fence (formwork).	4 hours	8 hours
Place concrete.	—	—
Remove air fence (joint formwork).	1 hours	3 hours
Clean the joint part.	2 hours	4 hours
Restore/adjust rebar.	0 hours	4 hours
Restore/adjust formwork.	2 hours	6 hours
Total	9 hours	25 hours

Product Line-ups

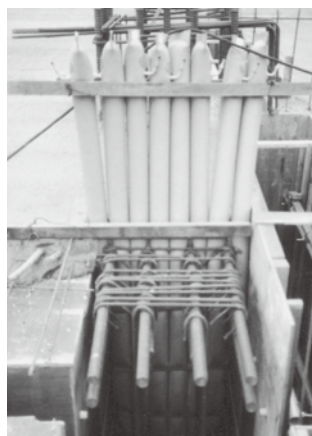
Types 50-1 (80-1, 100-1): One side is round (For vertical use).

Types 50-3 (80-3, 100-3): Both sides are flat (For horizontal use).

Diameter-Type \ Length	1.2m	2m	3m	4m	5m	6m	7m	8m
50-1 Vertical	○	○	○	○	○	○	○	△
50-3 Horizontal	△	△	○	○	○	○	△	○
80-1 Vertical	○	○	○	○	○	○	○	△
80-3 Horizontal	△	○	○	○	○	○	△	○
100-1 Vertical	○	○	○	○	○	○	○	△
100-3 Horizontal	△	△	○	○	○	○	△	○

• ○ indicates a standard products. △ indicates a made to order products.
(Please consult us about products 8m or more in length.)

Work examples



Installation to beam work



Installation to footing beam

A
Temporary
Construction

B
Concrete
Formwork

C
Rebar Work

G
Civil
Engineering

Metal Lath Formwork

Stay-in-place lath formwork for footing beam work

Product No. B90-0410



Application

- All foundation construction
- For Buildings: footing beam, footing, strip footing, mat foundation, pressure-resisting board, concrete stopper, etc.
- For Civil engineering construction: pillar foundation, retaining wall, concrete block, construction joint, etc.
- For other construction: steel tower foundation, wind turbine tower foundation, turbine tower foundation

Features

- **Efficient formwork installation**
Fully-systemized component parts of the product streamline the installation of formwork panels.
- **No need for formwork removal**
All components of the products are permanent. No need for formwork removal after concrete solidification, but just burying them in the ground.
- **Can place slab concrete simultaneously with f**
The vertical members of panels are highly rigid. Placing slab concrete simultaneously with footing beam concrete are applicable with flat deck plates.
- **Space-saving**
The volume of materials carried in is 1/7 compared with plywood panels, and the volume carried out is zero as no need for formwork removal.
- **Concrete filling conditions can be checked**
Concrete filling conditions can be visually checked because of the use of steel netting for formwork panels so that quality control is easy.

Parts

No	Component Parts	Size (mm)	Weight (PC)	Quantity(pc/bundle)	Packing
1	Panel	W = 600	1.70 (kg/m)	—	—
2	Batten 3MS600	3060	2.60 (kg)	20	Secured with PP strap
3	Bottom Runner	2000	0.38 (kg)	50	Secured with PP strap
4	Top Runner	2500	0.67 (kg)	50	Secured with PP strap
5	Nut (set outside the panel)	Distance between the parallel sides: 14	0.015 (kg)	2,000 nuts (500 nuts × 4 bags)	Case
6	Washer (set inside the panel)	Distance between the parallel sides: 14	0.003 (kg)	4,000 nuts (200 nuts × 20 bags)	Case
7	Joint	For ϕ 10 hole	—	5,000 nuts (1,000 nuts × 5 bags)	Case

Note 1: The standard Hight of the Panel is 500*4,000mm. Please consult our sales person when you need taller / shorter hight.

Note 2: The product is used to receive flat deck plates, when the concrete slab is placed at the same time.

How to use



(1) Fix Bottom runners (No.4) on the concrete with nails.



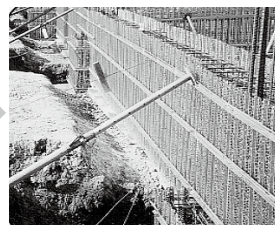
(2) Connect/Bend panels (No.1) and set them at the proper location.



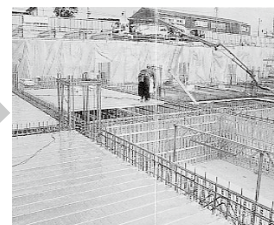
(3) Pass separators through Washers(No.7) ->panels (No.1) and battens (No.2,3) and tighten Nuts(No.6) from outside.



(4) Set the other side of panels (No.1) and fix them temporarily.



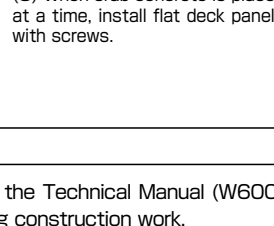
(5) Pass separators through Washers(No.7) ->panels(No.1) and battens(No.2,3) and tighten Nuts(No.6) from outside.
(6) Adjust the tilt of the panels.



(7) Install Top runners(No.5) with screws.



(10) Place concrete.

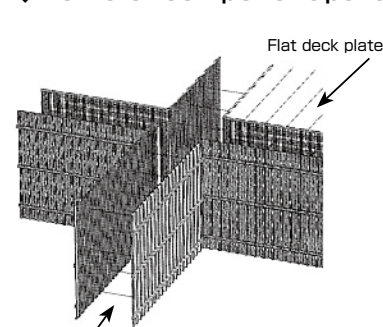


(8) When slab concrete is placed at a time, install flat deck panels with screws.

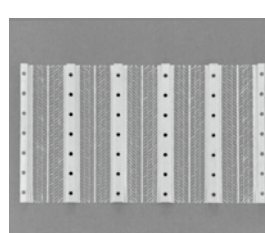
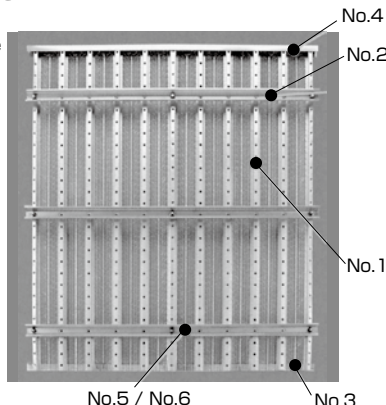
Cautions

- Please read and understand the Technical Manual (W600) before executing or designing construction work.

Name of component parts



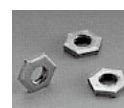
Separator Type C(20mm longer than the beam width for each end, 40mm longer in total.)



(No.1) Panel



(No.5) Nut



(No.6) Washer



(No.2) Batten 3MS600



(No.3) Bottom Runner

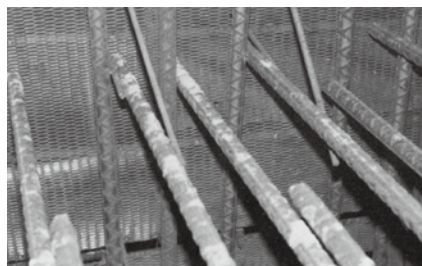


(No.4) Top Runner

Metal Lath

For concrete placing joint

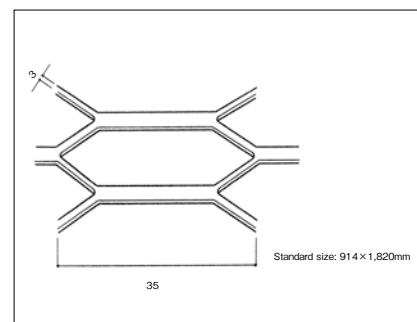
Product No. B90-0510



◆Application

- Best to use for a partition panel to stop concrete at a joint part of multiple concrete placement.

◆Size



◆Dimensions

Product	Steel plate thickness (mm)	Weight kg/m ² (including loss)	Product dimensions (mm)
Metal Lath 0.8	0.8	4.5	914×1,820
Metal Lath 1.2	1.2	6.8	

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

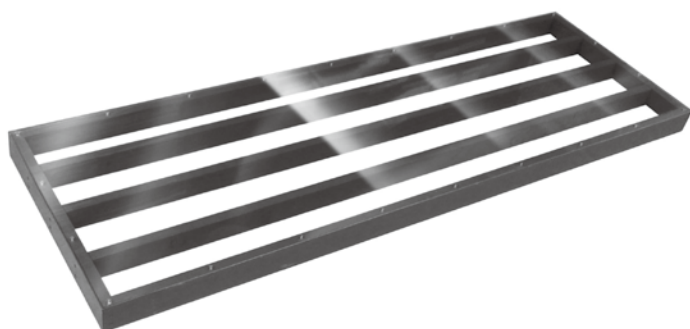
G

Civil Engineering

Transparent Formwork Panel

Methacryl resin formwork panel

Product No. B90-0610



Features

● Transparent Panels!

Easy to confirm visually the status of filling concrete.

◆Face plate

Unmodified methacrylate resin cast panel

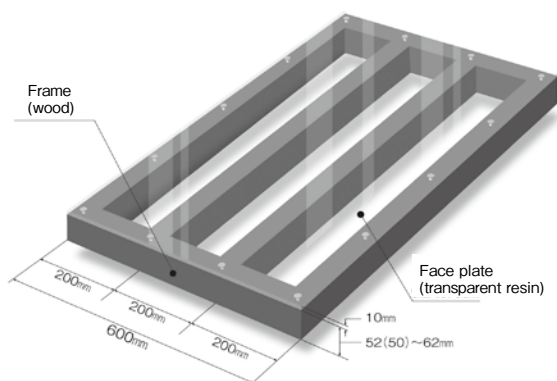
Excellent in transparency, durability, thermal tolerance, mechanical strength and moldability.

◆Frame

Urethane-resin coated lauan

Lightweight and excellent in workability.

* Other frames are also available.



◆Standard size

Symbol	Shape dimensions (mm)	Symbol	Shape dimensions (mm)
9018	900×1800	9015	900×1500
6018	600×1800	6015	600×1500
4518	450×1800	4515	450×1500
3018	300×1800	3015	300×1500
9012	900×1200	9009	900×900
6012	600×1200	6009	600×900
4512	450×1200	4509	450×900
3012	300×1200	3009	300×900
Others	Made-To-Order is available		

Cautions

This is a methacrylate resin product. Methacrylate resin is thermoplastic, combustible and organic solvent-soluble resin. The following are important points about handling this product. Please use the information to ensure safe use of the product.

● Precautions for use

When handling this product, please pay attention to the following points:

- The face plate is smooth and very slippery. Pay sufficient attention when storing, transporting, and working with the product.
- Concrete can be removed just by washing the product with water immediately after use and wiping it with a rag or towel.
- Note that the cut ends of the face plate may crack or chip etc.
- Be careful not to overtighten Form Ties.

- Use a special drill to make holes for inserting Separators. (Using a general type drill is dangerous.)
- To repair separator through holes, use stoppers, etc., available on the market. (Be careful not to break the product when striking the stopper.)
- In the case where Separators are used, use Plastic Cones with detachable axes, and pay attention so that the axes of the Separator do not get caught in the separator through holes during disassembly.
- Be sure to apply stripping agent before installation.
- It is difficult and dangerous to reprocess the product on-site. Please consult us about reprocessing.
- Avoid using a steel scraping bar or buff on the face plate surfaces.

Decorative Tile

Special resin/styrene tile for decorative formwork

Product No. B90-0620



◆Application

- For Construction work
- Outer wall, inner wall, pillar, ceiling, etc.
- Civil engineering
- Retaining wall, steep slope, residential development land, road side-wall, sound insulating wall, bridge, large-scale concrete structure, other secondary products

Features

- A large number of unique designs are available.
- Can be used in the same way as conventional form construction methods.
- No problem of peeling off or falling.

◆How to use

Five series: TSM, TSS, TSF, MP, and RC are available.

- For placing on-site
 - TSM: made of special resin and can be reused about 10 times.
 - TSS: made of special styrene and can be used once.
 - TSF: integrally molded with temporary formwork and can be reused five times.
- For production at factory
 - MP: reinforced glass fiber for PC-GRC is incorporated into the base to prevent elongation. Long products are available. Can be reused about 50 times.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

Decorative Tile : Civil Engineering

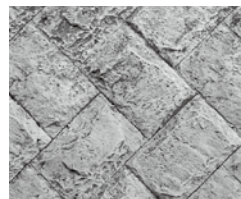
Product No. B90-0630

Special styrene tile for decorative civil engineering work

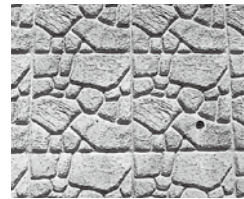
Types



Model	Area (m ²)	Weight(kg/pc)
B-9011-S	0.81	0.59
B-1509-S	0.135	0.09
B-3009-S	0.27	0.19
B-2203-S	0.0675	0.04
A-3008-S	0.24	0.11



Model	Area (m ²)	Weight(kg/pc)
74-A	0.54	0.37
74-B	0.262	0.17
74-C	0.1329	0.10
74-D右	0.1032	0.07
74-D左	0.1032	0.07
74-E右	0.0592	0.04
74-E左	0.0592	0.04



Model	Area (m ²)	Weight(kg/pc)
9009-A	0.81	0.57
9009-B	0.81	0.46

Features

- One-time use only
- Since the product is made of special styrene, it is elastic and offers excellent detachability. As a result, the concrete surface obtains a beautiful finish, rendering formwork joints inconspicuous.
- The surface of the concrete structure has natural stone patterns that add a sense of warmth, harmonizing well with the natural environment.



Model	Area (m ²)	Weight (kg)
9009-C	0.81	0.53
9009-D	0.81	0.47



Model	Area (m ²)	Weight (kg)
9009-T	0.81	0.42
6003-T	0.18	0.11
6006-T	0.36	0.17
9003-T	0.27	0.17

Cautions

- Keep the product away from fire and solvents.
- As the product is lightweight and easily blown off by the wind, be careful for when it's windy.
- Handle the product with care.

Examples



Coursed masonry



Kiso stone masonry



Teppei stone masonry

Work procedures

(1) Prepare formwork.

(2) Install formwork.

Follow decorative formwork installation procedures. (Note) After installing formwork, provide protection from rain, etc., until concrete is placed.

(3) Placing concrete.

For casting concrete, pay attention so as not to directly hit the decorative formwork surface. Avoid lateral movement inside the formwork.

(4) Concrete compaction.

Insert an internal vibrator as vertically as possible at uniform intervals in such a way that the vibrator does not touch the surface of the decorative formwork. The interval should generally be 50mm or less, the diameter in which vibration is recognized as effective.

(5) Remove formwork

(6) Completion.

Stripping agent

Special stripping agent

* Cebo #WS-1000 easily separates the product from concrete by reacting with alkali in concrete and forming a stripping film (lanolin fatty acid salt) between formwork and concrete.



Panel Fastener I

Product No. B90-0710

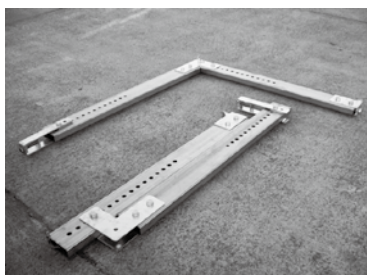
L-shaped fastening hardware for column panel (metalform)

"Panel Fastener I" is fastening hardware developed for independent columns for construction and civil engineering projects. Separators are not required. The high strength hardware can reduce the number of stages of horizontal form supporting members. Single columns can be used but systemized columns can further streamline construction projects.

Features

- The high strength hardware can reduce the number of stages of horizontal form supporting members. Separators are not required because of the outside tightening method. Applicable for the column size of 700mm~1,300mm (also applicable for rectangle columns).
- Assembly and disassembly of formwork is easy just by bolt-up of the corners.
- By using this hardware with fasten metalforms, the formwork can be lifted and moved, which enhances work efficiency.

[Panel Fastener I]



[Holder W]

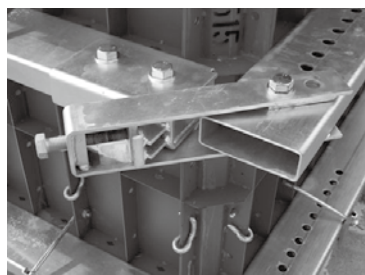


Shape dimensions	I (cm ⁴)	Z (cm ³)	Individual weight type L (kg/case)
□-150×50	315	42	42.5

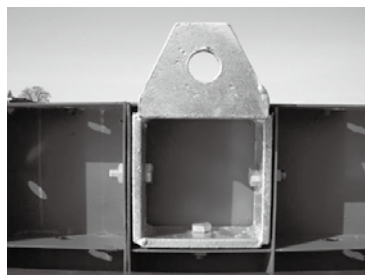
Work procedures

- (1) Erect metalforms by fastening with U clips.
- (2) Arrange and fasten holders the designated positions (8 positions/stage) (2 positions/face).
- (3) Open the product into an L-shape and attach hexagon head bolts and taper pins according to the size of the product (when shipped, it is set for the column size of 1,300mm).
- (4) Place the product on holders and fasten them.
- (5) After temporarily tightening the product with corner tightening hardware, adjust plumbing and tighten the product completely.

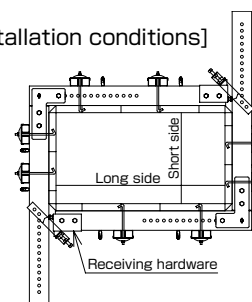
[Corner tightening part]



[Hanger S]



[Installation conditions]



For a rectangular column, make arrangements so that the receiving hardware will come on the long side, and set the products.

* If the corner is round, please consult us.

Necessary tools

- Ratchet spanner
 - Distance between the parallel sides: 21mm
 - Tightening Powder Holders
 - Distance between the parallel sides: 30mm
 - Tightening corners
- Hammer
- U Clips

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

Panel Fastener II

L-shaped fastening hardware for column panel

Product No. B90-0720

Features

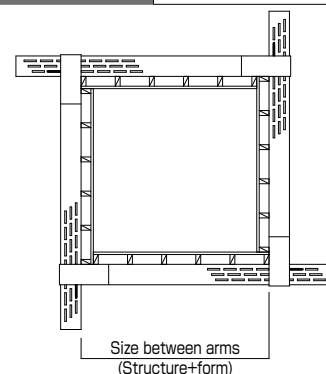
1. Quick assembly and disassembly, secure fastening.
2. Channel pin allows fine adjustment.

Shape & dimensions

Type 2H



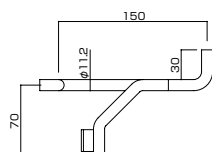
Type 3H



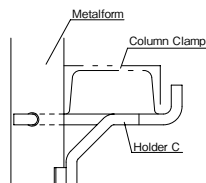
Model	Weight (kg)	Total length L (mm)	Effective working (main frame+form) (mm)	Shape dimensions	I (cm ⁴)	Z (cm ³)
2H	Type 100	9.9	1316	500~1000	Channel 5×40×75	75.3
	Type 130	11.9	1616	800~1300		
3H	Type 100	13.4	1345	520~1000	Channel 5×50×100	188.0
	Type 130	16.0	1645	750~1300		
	Type 150	17.7	1845	800~1500		
	Type 160	18.5	1940	960~1600		
	Type 180	19.4	2145	1000~1800		
Channel pin	0.5	300	—	—	—	—
Holder C	0.2	—	Temporary Panel Fastener II holder (for metal)	—	—	—

Holder C

Temporary holder for metalform

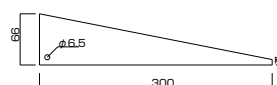


Installation drawing



* Approximate number of holders to be used: 6~8 holders/stage

Channel pin



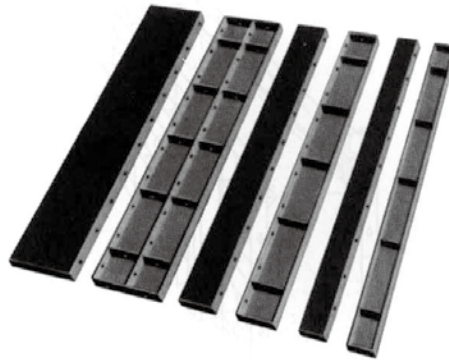
Usage example



Metal Form

Steel panel for formwork

Product No. B90-0810



◆Size

Division	Symbol	Size (mm)	Number used per m ²	Weight (kg/pc)
Flat Form	3018	300×1800	1.9	17.3
	3015	// ×1500	2.2	14.6
	3012	// ×1200	2.8	11.8
	3009	// × 900	3.7	8.9
	3006	// × 600	5.6	6.2
	2018	200×1800	2.8	13.5
	2015	// ×1500	3.3	11.3
	2012	// ×1200	4.2	9.1
	2009	// × 900	5.5	6.9
	2006	// × 600	8.3	4.8
	1518	150×1800	3.7	9.4
	1515	// ×1500	4.4	7.8
	1512	// ×1200	5.6	6.3
	1509	// × 900	7.4	4.8
	1506	// × 600	11.1	3.3
	1018	100×1800	5.6	7.4
	1015	// ×1500	6.7	6.2
	1012	// ×1200	8.3	5.0
	1009	// × 900	11.1	3.8
	1006	// × 600	16.7	2.6
Corner Form	CF1500	150×150×1500	2.2	11.9
	CF1200	// ×1200	2.8	9.6
	CF 900	// ×0900	3.7	7.3
	CF 600	// ×0600	5.6	5.0

Division	Symbol	Size (mm)	Weight (kg/pc)
Three-Face Form	3CF5545	150×150×450	4.1
	3CF5530	150×150×300	2.9
	3CF5515	150×150×150	1.8
Chamfered Forms	Beveled Corner Form	BF4515	45 1500 6.2
		BF4512	45 1200 5.0
		BF4509	45 900 3.8
		BF4506	// 600 2.6
		BF1712	17 1200 3.5
		BF1709	// 900 2.6
		BF1706	// 600 1.7
	Rounded Corner Form	BR3515	Face radius 35R 1500 6.3
		BR3512	// 1200 5.1
		BR3509	// 900 3.9
		BR3506	// 600 2.7
		BR2012	// 20R 1200 3.5
		BR2009	// 900 2.6
		BR2006	// 600 1.8
Corner Angle	CA 15	1500	3.2
	CA 12	1200	2.6
	CA 9	900	2.0
	CA 6	600	1.9

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

Manhole Formwork

Product No. B90-0820



◆Application

- Circular formwork for manholes.
- Circular formwork for other uses.

◆Size

Inside frame (mm)	Outside frame (mm)	Height (mm)
φ 900	φ 1300 (1400)	300
φ 1200	φ 1600 (1700)	600
φ 1500	φ 1900 (2000)	900
φ 1800	φ 2300 (2400)	1200
φ 2000	φ 2500 (2600)	1500
φ 2200	φ 2700 (2800)	600 · 900
		1200 · 1500

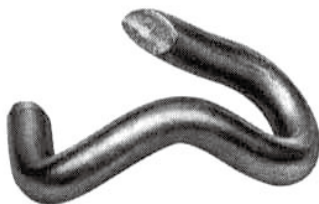
Features

- Lightweight and strong. Easy to assemble and disassemble.
- Enhanced accuracy by the use of stamped horizontal ribs, which allows for beautiful curved surface finishing.
- Can be assembled with only U-Clips for metal forms. Time and labor required is less than half compared to timber formwork.
- Steps can be easily attached. Block type formwork that does not require measurement determination is also available.

U-Clip

Joint hardware for metalform

Product No. B90-0830



◆Application

- Used to assemble metal forms.

Cautions

- Used to prevent metal forms from being displaced.

Product	Quantity (pc/case)	Weight (kg/case)	Packing
U-Clip	100	19	Case

L-Pin

Assembling pin for metalform

Product No. B90-0840



◆Application

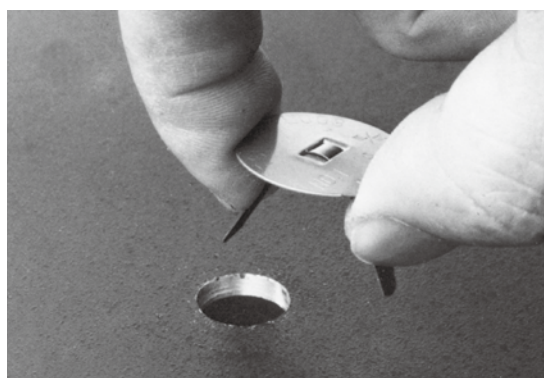
- Used to assemble metal forms. Generally used at edges.

Product	Quantity (pc/case)	Weight (kg/case)	Packing
L-Pin	50	18	Case

Sealing Plate : Metalform

Sealing plate for separator holes on metalform

Product No. B90-0850

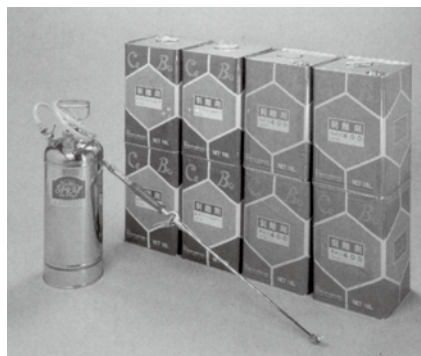


Product	Range of hole diameter	Quantity(pc/case)
No.1	9mm~18mm	500
No.3	7mm~13mm	500
No.4	25mm~32mm	100
No.5	35mm~50mm	25

Cebo : Releasing Agent

Concrete release agent for formwork panels

Product No. B90-0910



Features

- Chemical reaction causes stripping so suitable for various types of formwork. Effective for rust prevention when used for metal formwork. Effective for water penetration prevention when used for plywood panels or wood frames.

Product	Application	Coated area	Packing
#Form Coat	Formwork (steel, plywood, coated), secondary products (aluminum, stainless steel, galvanized)	15~20m ² /ℓ	18ℓ can 200ℓ drum
#400	Same as above (rust prevention intensifier)	15~20m ²	//
#460	Plywood and wooden formwork (impregnating stripping materials)	10~15m ²	//
#Centre Coat	Tunnel formwork, steel and coated formwork	10~15m ²	//
#PC-30X	Formwork (special decorative rubber, steel, plywood)	10~15m ²	//
#AZ-3	Formwork (stainless steel, aluminum, galvanized, steel, coated) for exposed concrete only	10~15m ²	//
#1000	Plywood and wooden formwork	10~15m ² /ℓ of diluted solution	//
#WS1000	Expanded polystyrene formwork (also applicable for plywood and wooden formwork)	10~15m ² /ℓ of diluted solution	18ℓ can
#PC1	Secondary products, steel formwork, tiles simultaneous placement for exposed concrete	10~15m ²	200ℓ drum
#Eye Coat	Resin coating agent for plywood and wooden formwork (gray), special thinner is required.	400cc/m ² (two coating)	18ℓ can 16ℓ can (thinner)
#ND-3	For removing rust and concrete leakage from steel products such as steel formwork	Dilute with water depending on the extent of rust and concrete leakage	20kg plastic container

Corrosion Inhibitor

Quick-drying corrosion inhibitor

Product No. B90-0920



Product
Corrosion Inhibitor 4 ℓ
Corrosion Inhibitor 18 ℓ

Features

- Can be directly applied to corrosion.
- Quick-drying
- Hardened film is strong enough and cannot be easily affected by any kind of solvent.

1. Lightly remove loose scales and top coat with a wire brush, and wash away oil, dirt, and salt.
2. Use a brush, roller brush or spray gun suitable for the use and site
3. Apply approximately 1kg per 10m².
4. The coating dries in 1 or 2 hours, but allow at least 1 day for curing before placing concrete.

Cautions

- Since the product contains xylene, use a gas mask, etc., when using the product in a poorly ventilated place.
- Since the product is made of special resin, use goggles to protect eyes
- Use rubber gloves to prevent skin irritation.
- Take extra precautions against fire.

A
Temporary
Construction

B
Concrete
Formwork

C
Rebar Work

G
Civil
Engineering

Plastic Plug

Product No. B90-0930

Plastic Plug for separator holes on formwork panels



Features

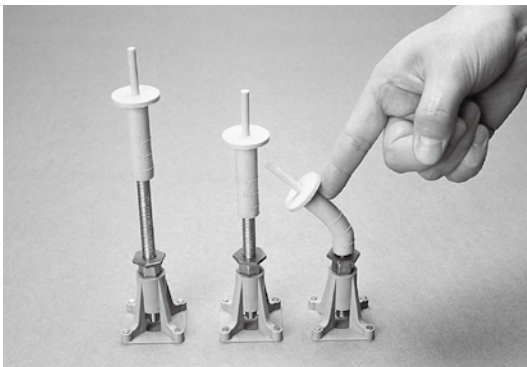
- Prevents throwaway of concrete panels.
- Low-priced.
- Ribbed and tapered so that the plug can be easily driven into a concrete panel and cannot come off easily.
- Long service life because of the use of weather resistant material.

Product	Hole diameter	Color	Dimensions	Quantity (pc/case)
Small	For ϕ 9	Green	$9\phi \times 10\phi \times 12t$	3000
Medium	For ϕ 12	Black	$12\phi \times 13\phi \times 12t$	2000
Large	For ϕ 15	Brown	$15\phi \times 16\phi \times 12t$	1000
Oversize	For ϕ 18	Green	$18\phi \times 20\phi \times 12t$	500

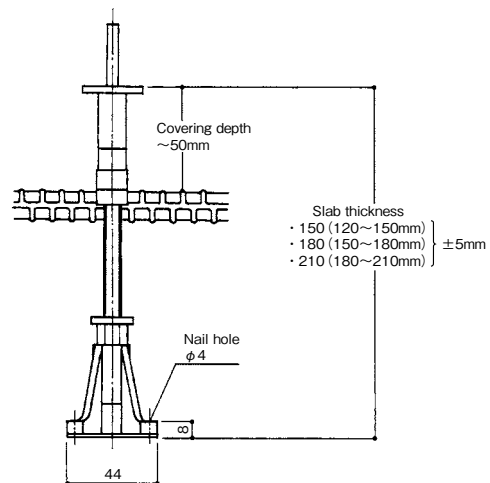
Covering Depth Marker

Product No. B90-0980

Measuring tool for covering depth on slope work



Size



Product	Slab thickness (mm)	Quantity (pc/case)	Weight (kg/case)	Packing
150	120~150	100	6	Case
180	150~180	100	7	
210	180~210	100	8	

Features

- Suitable for any type of slab with its long adjusting width.
- Does not fall over even if it is hit by a pressure hose.
- Thermal insulating material is also acceptable because of its wide base.
- Easy post-treatment after placing concrete.

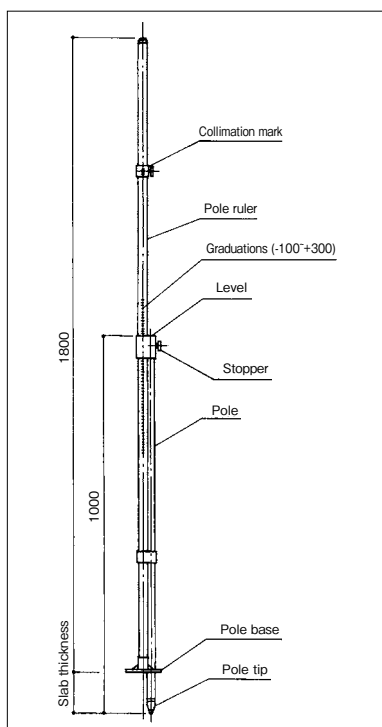
Cautions

- Install the product near a spacer.
- Fasten the product securely to formwork with nails or plastic nails.
- Applicable to the covering depth of up to 50mm.

Measuring Pole

Measuring pole for formwork and concrete top-end

Product No. B90-0990



Product	Weight (kg/case)
Measuring Pole	1

Features

- No measuring errors because the pole tip is designed with a shape that avoids concrete adhesion and adoption of wear resistant resin coating.
- The product consists of two components of a pole and a pole ruler - to enable simultaneous measuring of the formwork level and the concrete top end level, which facilitates execution of exposed concrete finish.
- Top end of the pole base is a concrete slab top end, which facilitates trowel finishing of reference slab.
- The pole ruler is treated with alumite and has a gold finish as well as highly precise graduations printed in black.
- Speedy collimation because of the slip prevention mechanism provided for the collimation mark.
- Speedy plumbing due to the level positioned at the upper part of the pole.
- Made of aluminum alloy.

Cautions

- The reference black ink should be marked 1,000mm from the slab formwork top end.
- After use, wash away adhered concrete with water immediately.

A

Temporary
Construction

B

Concrete
Formwork

C

Rebar Work

G

Civil
Engineering

Foamed Chamfer/Joint Strip

Expanded polystyrene chamfer/joint strip

Product No. B96-0110

Foamed chamfer bars ◆Tapered on both sides

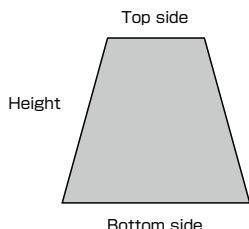
L dimensions = 2,000mm

In order of product number

Product number	Base × height × upper side (mm)	Quantity (pc/case)
KM-1W	30 × 25 × 25	50
KM-2W	25 × 20 × 20	50
KM-3W	20 × 15 × 15	100
KM-4W	30 × 15 × 20	50
KM-5W	25 × 15 × 20	50
KM-6W	20 × 10 × 15	100
KM-12W	30 × 20 × 25	50
KM-13W	30 × 30 × 20	50
KM-14W	30 × 15 × 25	50
KM-15W	40 × 25 × 30	30
KM-17W	25 × 25 × 20	50
KM-18W	40 × 20 × 35	25
KM-19W	30 × 25 × 20	50
KM-20W	20 × 20 × 15	100
KM-21W	15 × 15 × 10	100
KM-22W	15 × 10 × 10	100
KM-24W	15 × 12 × 11	100
KM-25W	15 × 9 × 12	100
KM-28W	9 × 6 × 7	200
KM-33W	20 × 12 × 14	100
KM-40W	40 × 30 × 30	25
KM-41W	30 × 30 × 25	25
KM-42W	50 × 30 × 40	25
KM-43W	70 × 30 × 60	15
KM-44W	30 × 30 × 20	40
KM-50W	100 × 30 × 90	10

In order of size

Base × height × upper side (mm)	Product number	Quantity (pc/case)
9 × 6 × 7	KM-28W	200
15 × 9 × 12	KM-25W	100
15 × 10 × 10	KM-22W	100
15 × 12 × 11	KM-24W	100
15 × 15 × 10	KM-21W	100
20 × 10 × 15	KM-6W	100
20 × 12 × 14	KM-33W	100
20 × 15 × 15	KM-3W	100
20 × 20 × 15	KM-20W	100
25 × 15 × 20	KM-5W	50
25 × 20 × 20	KM-2W	50
25 × 25 × 20	KM-17W	50
30 × 15 × 20	KM-4W	50
30 × 15 × 25	KM-14W	50
30 × 20 × 20	KM-13W	50
30 × 20 × 25	KM-12W	50
30 × 25 × 20	KM-19	50
30 × 25 × 25	KM-1W	50
30 × 30 × 20	KM-44W	40
30 × 30 × 25	KM-41W	25
40 × 20 × 35	KM-18W	25
40 × 25 × 30	KM-15W	30
40 × 30 × 30	KM-40W	25
50 × 30 × 40	KM-42W	25
70 × 30 × 60	KM-43W	15
100 × 30 × 90	KM-50W	10



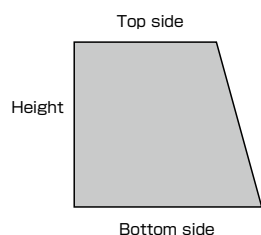
◆Tapered on one side

In order of product number

Product number	Base × height × upper side (mm)	Quantity (pc/case)
KM-1S	30 × 25 × 25	50
KM-2S	25 × 20 × 20	50
KM-3S	20 × 15 × 15	100
KM-4S	30 × 15 × 20	50
KM-5S	25 × 15 × 20	50
KM-6S	20 × 10 × 15	100
KM-12S	30 × 20 × 25	50
KM-13S	30 × 20 × 20	50
KM-14S	30 × 15 × 25	50
KM-15S	40 × 25 × 30	30
KM-17S	25 × 25 × 20	50
KM-18S	40 × 20 × 35	25
KM-19S	30 × 25 × 20	50
KM-20S	20 × 20 × 15	100
KM-21S	15 × 15 × 10	100
KM-22S	15 × 10 × 10	100
KM-23S	10 × 10 × 8	100
KM-24S	15 × 12 × 13	100
KM-25S	15 × 10 × 12	100
KM-28S	9 × 6 × 7	200
KM-31S	15 × 15 × 12	100
KM-33S	20 × 12 × 14	100
KM-40S	40 × 30 × 30	25
KM-41S	30 × 30 × 25	25
KM-42S	50 × 30 × 40	25
KM-43S	70 × 30 × 60	15
KM-44S	30 × 30 × 20	40

In order of size

Base × height × upper side (mm)	Product number	Quantity (pc/case)
9 × 6 × 7	KM-28S	200
10 × 10 × 8	KM-23S	100
15 × 10 × 10	KM-22S	100
15 × 10 × 12	KM-25S	100
15 × 12 × 13	KM-24S	100
15 × 15 × 10	KM-21S	100
15 × 15 × 12	KM-31S	100
20 × 10 × 15	KM-6S	100
20 × 12 × 14	KM-33S	100
20 × 15 × 15	KM-3S	100
20 × 20 × 15	KM-20S	100
25 × 15 × 20	KM-5S	50
25 × 20 × 20	KM-2S	50
25 × 25 × 20	KM-17S	50
30 × 15 × 20	KM-4S	50
30 × 15 × 25	KM-14S	50
30 × 20 × 20	KM-13S	50
30 × 20 × 25	KM-12S	50
30 × 25 × 20	KM-19S	50
30 × 25 × 25	KM-1S	50
30 × 30 × 20	KM-44S	40
30 × 30 × 25	KM-41S	25
40 × 20 × 35	KM-18S	25
40 × 25 × 30	KM-15S	30
40 × 30 × 30	KM-40S	25
50 × 30 × 40	KM-42S	25
70 × 30 × 60	KM-43S	15



Foamed Chamfer/Joint Strip

Expanded polystyrene chamfer/joint strip

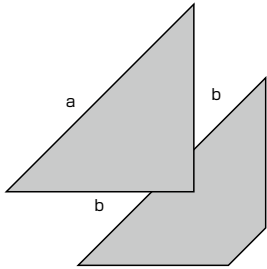
Product No. B96-0110

Features of expanded polystyrene chamfer strips/bars

L dimensions = 2,000mm

- Does not absorb water and free from warp, distortion, etc.
- Can be easily cut with a saw.
- Delivers beautiful finishing surface as concrete hardly adheres.

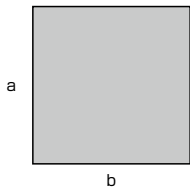
Expanded polystyrene chamfer strips



* The corners of KA-70 and KA-100 are cut.

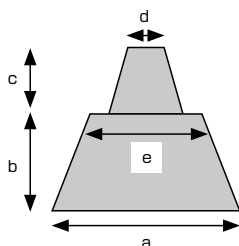
Product number	a (mm)	b (mm)	Quantity(pc/case)
KA-10	10	7	200
KA-15	15	10	200
KA-20	20	15	200
KA-25	25	17	100
KA-30	30	21	100
KA-35	35	25	100
KA-40	40	28	50
KA-45	45	31	50
KA-50	50	36	50
KA-60	60	42	30
KA-70	70	49	20
KA-100	100	71	12

Square expanded polystyrene chamfer bars



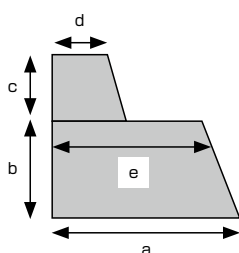
Product number	a (mm)	b (mm)	Quantity(pc/case)
KB-10	10	10	200
KB-15	15	15	100
KB-20	20	20	50
KB-25	25	25	50
KB-30	30	30	40

Two-stage expanded polystyrene chamber bars



◆Tapered on both sides

Product number	a (mm)	b+c (mm)	d (mm)	e (mm)	Quantity(pc/case)
KE-1	30	15+10	7	25	50
KE-3	25	15+10	7	20	50
KE-5	30	20+10	8	20	50
KE-7	40	20+10	10	35	25



◆Tapered on one side

Product number	a (mm)	b+c (mm)	d (mm)	e (mm)	Quantity(pc/case)
KE-2	30	15+10	8	25	50
KE-4	25	15+10	8	20	50
KE-6	30	20+10	8	25	50
KE-8	40	20+10	10	30	25
KE-10	50	20+10	12	45	25

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

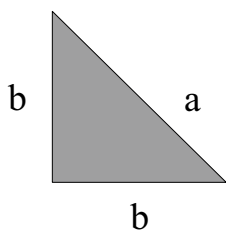
G

Civil Engineering

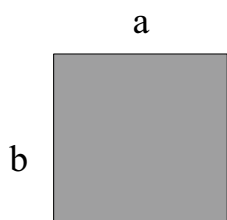
Foamed Chamfer/Joint Strip (Black)

Product No. B96-0210

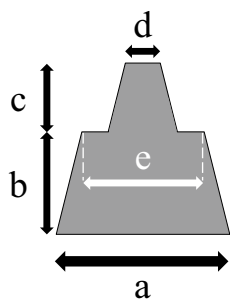
Expand polystyrene chamfer/joint strip



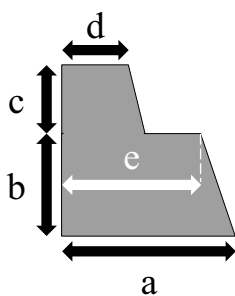
Product	Length (mm)		Quantity (pcs/case)
	a	b	
PA-10	10.00	7.00	200
PA-15	15.00	10.00	200
PA-20	20.00	15.00	200
PA-25	25.00	17.00	100
PA-30	30.00	21.00	100
PA-35	35.00	25.00	100
PA-40	40.00	28.00	50
PA-45	45.00	31.00	50
PA-50	50.00	36.00	50



Product	Length (mm)		Quantity (pcs/case)
	a	b	
PB-10	10.00	10.00	200
PB-15	15.00	15.00	100
PB-20	20.00	20.00	50
PB-25	25.00	25.00	50



Product	Length (mm)				Quantity (pcs/case)
	a	b + c	d	e	
PE-3	25.00	15.00+10.00	7.00	20.00	50



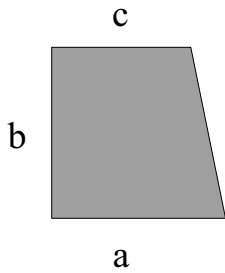
Product	Length (mm)				Quantity (pcs/case)
	a	b + c	d	e	
PE-2	30.00	15.00+10.00	7.00	25.00	50
PE-4	25.00	15.00+10.00	8.00	20.00	50



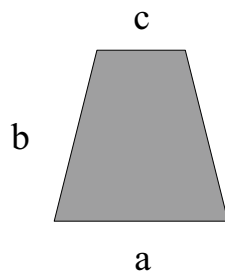
Foamed Chamfer/Joint Strip (Black)

Product No. B96-0210

Expand polystyrene chamfer/joint strip



Product	Length (mm)			Quantity (pcs/case)
	a	b	c	
P-1 W	30.00	25.00	25.00	50
P-2 W	25.00	20.00	20.00	50
P-3 W	20.00	15.00	15.00	100
P-4 W	30.00	15.00	20.00	50
P-5 W	25.00	15.00	20.00	50
P-6 W	20.00	10.00	15.00	100
P-12 W	30.00	20.00	25.00	50
P-17 W	25.00	25.00	20.00	50
P-20 W	20.00	20.00	15.00	100
P-21 W	15.00	15.00	10.00	100
P-22 W	15.00	10.00	10.00	100
P-24 W	15.00	12.00	11.00	100



Product	Length (mm)			Quantity (pcs/case)
	a	b	c	
P-1 S	30.00	25.00	25.00	50
P-2 S	25.00	20.00	20.00	50
P-3 S	20.00	15.00	15.00	100
P-4 S	30.00	15.00	20.00	50
P-5 S	25.00	15.00	20.00	50
P-6 S	20.00	10.00	15.00	100
P-12 S	30.00	20.00	25.00	50
P-17 S	25.00	25.00	20.00	50
P-20 S	20.00	20.00	15.00	100
P-21 S	15.00	15.00	10.00	100
P-22 S	15.00	10.00	10.00	100
P-23 S	10.00	10.00	8.00	100
P-24 S	15.00	12.00	13.00	100

A

Temporary
Construction

B

Concrete
Formwork

C

Rebar Work

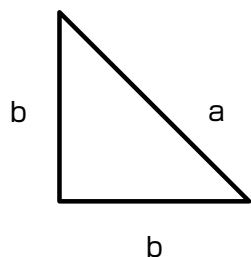
G

Civil
Engineering

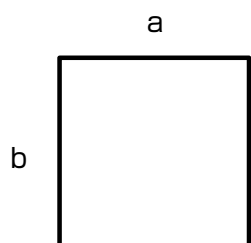
Plastic Chamfer/Joint Strip

Product No. B96-0310

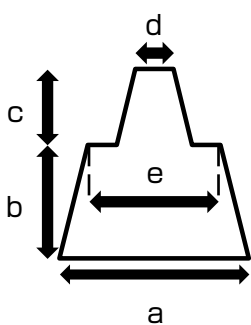
Polypropylene midair chamfer/Joint Strip



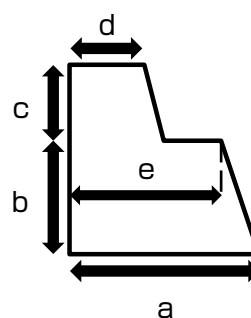
Product	Length (mm)		Quantity (pcs/case)
	a	b	
O-15	15.00	10.60	200
O-20	20.00	14.10	100
O-25	25.00	17.70	100
O-30	30.00	21.20	100
O-35	35.00	24.80	50
O-40	40.00	28.30	50
O-45	45.00	31.80	50
O-50	50.00	35.40	50



Product	Length (mm)		Quantity (pcs/case)
	a	b	
OL-15	15.00	15.00	100
OL-20	20.00	20.00	50
OL-25	25.00	25.00	50



Product	Length (mm)				Quantity (pcs/case)
	a	b + c	d	e	
E3	25.00	15.00+10.00	7.00	20.00	50



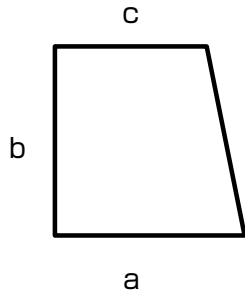
Product	Length (mm)				Quantity (pcs/case)
	a	b + c	d	e	
E2	30.00	15.00+10.00	8.00	25.00	50
E4	25.00	15.00+10.00	8.00	20.00	50



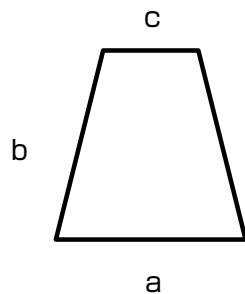
Plastic Chamfer/Joint Strip

Product No. B96-0310

Polypropylene midair chamfer/Joint Strip



Product	Length (mm)			Quantity (pcs/case)
	a	b	c	
OK-10	10.00	10.00	7.00	300
OKS-15	15.00	10.00	10.00	100
OK-15	15.00	15.00	10.00	100
OKS-20	20.00	10.00	15.00	100
OK-20	20.00	15.00	15.00	100
OK-20A	20.00	20.00	15.00	50
OKS-25	25.00	15.00	20.00	50
OK-25A	25.00	20.00	20.00	50
OK-25	25.00	25.00	20.00	50
OKS-30A	30.00	15.00	20.00	50
OK-30A	30.00	20.00	20.00	50
OK-30B	30.00	20.00	25.00	50
OK-30	30.00	25.00	25.00	50
OKS-40	40.00	20.00	35.00	40



Product	Length (mm)			Quantity (pcs/case)
	a	b	c	
OMS-15	15.00	10.00	10.00	100
OM-15	15.00	15.00	10.00	100
OMS-20	20.00	10.00	15.00	100
OM-20	20.00	15.00	15.00	100
OM-20A	20.00	20.00	15.00	100
OMS-25	25.00	15.00	20.00	50
OM-25	25.00	20.00	20.00	50
OM-25A	25.00	25.00	20.00	50
OMS-30	30.00	15.00	20.00	50
OM-30	30.00	20.00	20.00	50
OM-30A	30.00	25.00	25.00	50
OMS-40	40.00	20.00	35.00	40

A

Temporary
Construction

B

Concrete
Formwork

C

Rebar Work

G

Civil
Engineering

CS Rebar Joint

Mechanical joint for rebar

Product No. C10-0010

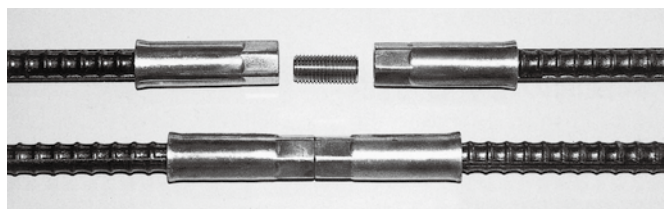
CS Rebar Joint is:
Mechanical joint for rebars by connecting them with a relay bolt.
Applicable for rebar diameters of D13 to D51.
Compression of the sleeve is even available to the construction site.

Features

- Reliable joint strength
- Quick tightening with a torque wrench.
- Only one-day training session required for qualification.
- Portable crimping device is available.
- Jointable up to 2-size differences in diameters.
- Jointable up to 1 rank difference in material.



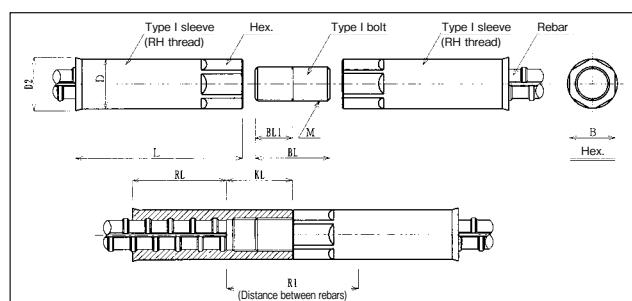
Type I



Dimension

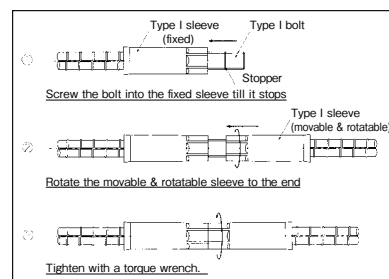
Rebar Dia.	M	D	D2	L	RL	KL	R1	B	(mm)	
D13	M14×2.0	21.3	24	80	53	27	54	19	BL1	BL
D16	M18×2.5	25.6	30	95	62	33	66	24	20	40
D19	M20×2.5	30.1	32	102	63	39	78	27	22	44
D22	M24×3.0	33.5	37	115	70	45	90	32	26	52
D25	M27×3.0	39.9	43	129	83	46	92	36	30	60
D29	M30×3.5	44.9	49	144	88	56	112	41	33	66
D32	M33×3.5	48.2	52	155	97	58	116	46	36	72
D35	M36×4.0	53.5	57	170	111	59	118	50	40	80
D38	M39×4.0	57.6	61	187	121	66	132	55	43	86
D41	M42×4.5	62.9	65	195	127	68	136	60	47	94
D51	M52×5.0	78.5	83	243	154	89	178	75	57	114

* L, RL, KL, and R1 are standard dimensions obtained by calculation.

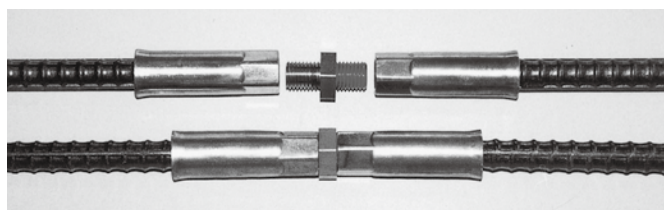


Either side is axially movable and rotatable.

Working procedures



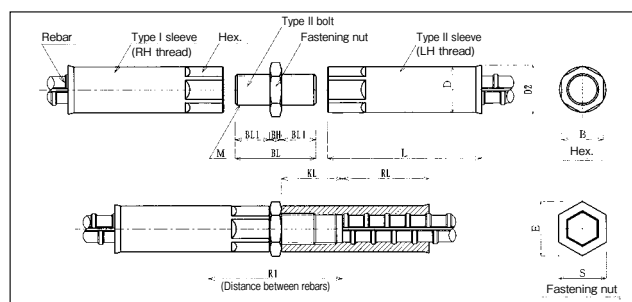
Type II



Dimension

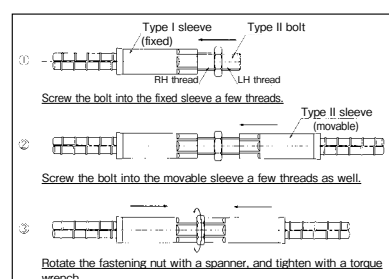
Rebar Dia.	M	D	D2	L	RL	KL	R1	B	(mm)				
D13	M14×2.0	21.3	24	80	53	27	64	19	BL1	BH	BL	S	E
D16	M18×2.5	25.6	30	95	62	33	77	24	20	11	51	27	31.2
D19	M20×2.5	30.1	32	102	63	39	89	27	22	11	55	32	37.0
D22	M24×3.0	33.5	37	115	70	45	102	32	26	12	64	36	41.6
D25	M27×3.0	39.9	43	129	83	46	104	36	30	12	72	41	47.3
D29	M30×3.5	44.9	49	144	88	56	127	41	33	15	81	46	53.1
D32	M33×3.5	48.2	52	155	97	58	131	46	36	15	87	50	57.7
D35	M36×4.0	53.5	57	170	111	59	133	50	40	15	95	55	63.5
D38	M39×4.0	57.6	61	187	121	66	147	55	43	15	101	60	69.3
D41	M42×4.5	62.9	65	195	127	68	154	60	47	18	112	65	75.0
D51	M52×5.0	78.5	83	243	154	89	198	75	57	20	134	80	92.4

* L, RL, KL, and R1 are standard dimensions obtained by calculation.

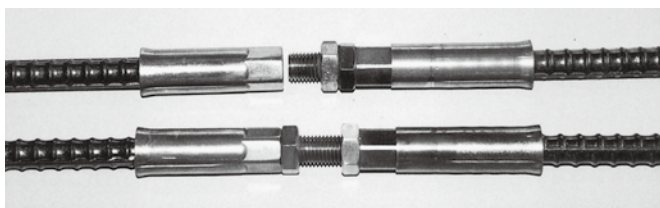


Either side is non-rotatable, but axially movable.

Working procedures



Type III

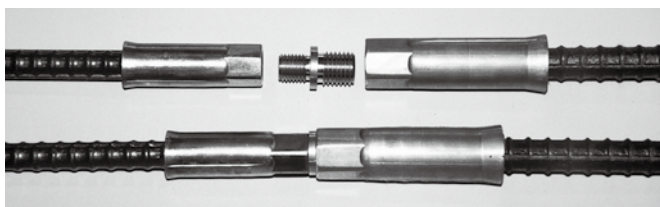


Sleeve dimension Unit (mm) Relay bolt dimension

Rebar name	M	D	D2	L	RL	KL	R1	C1	C2	B	BL1	BH	BL	S	E
D13	M14×2.0	21.3	24	106	53	53	117	5	37	19	16	8	69	22	25.4
D16	M18×2.5	25.6	30	121	62	59	139	5	47	24	20	11	87	27	31.2
D19	M20×2.5	30.1	32	129	63	66	156	5	51	27	22	12	95	30	34.6
D22	M24×3.0	33.5	37	144	70	74	178	5	59	32	26	14	111	36	41.6
D25	M27×3.0	39.9	43	163	83	80	193	5	67	36	30	16	127	41	47.3
D29	M30×3.5	44.9	49	186	88	98	233	10	79	41	33	18	145	46	53.1
D32	M33×3.5	48.2	52	199	97	102	246	10	86	46	36	20	158	50	57.7
D35	M36×4.0	53.5	57	218	111	107	258	10	92	50	40	21	172	55	63.5
D38	M39×4.0	57.6	61	237	121	116	281	10	99	55	43	23	185	60	69.3
D41	M42×4.5	62.9	65	253	127	126	306	15	112	60	47	25	206	65	75.0
D51	M52×5.0	78.5	83	308	154	154	377	15	134	75	57	31	248	80	92.4

* L, RL, KL, and R1 are standard dimensions obtained by calculation.

Type IV (Different diameters)



Rebar Dia. Difference of 2 sizes Unit (mm)

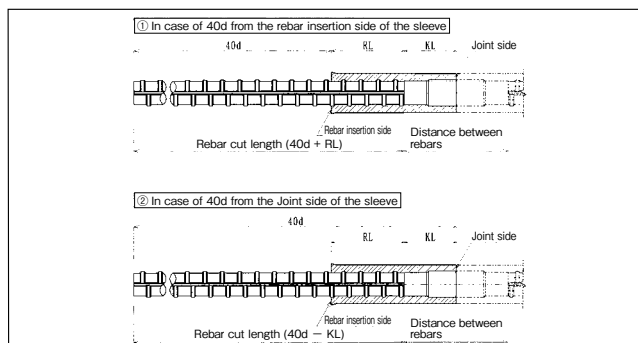
Rebar Dia.	RL	KL	R1	1BL	1D
D13-D16	53-62	27-33	65	41	24
D16-D19	62-63	33-39	77	47	27
D19-D22	63-70	39-45	89	53	30
D22-D25	70-83	45-46	96	61	36
D25-D29	83-88	46-56	107	68	40
D29-D32	88-97	56-58	119	74	45
D32-D35	97-111	58-59	122	81	48
D35-D38	111-121	59-66	130	88	55
D38-D41	121-127	66-68	139	95	60
D41-D51	127-154	68-89	162	109	66

* RL, KL, R1 and R2 are standard dimensions obtained by calculation.

Torque Value

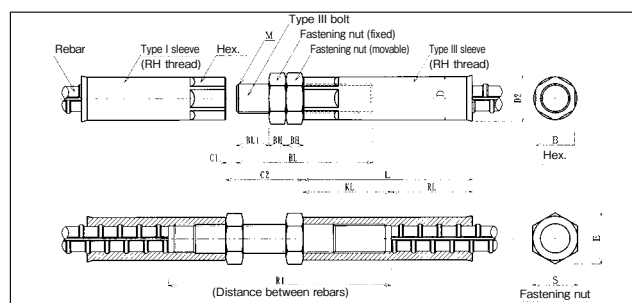
Rebar Dia.	D13	D16	D19	D22	D25	D29	D32	D35	D38	D41	D51
Torque value N · m	25	55	75	130	190	260	350	440	570	650	1010
kg · m	3.0	6.0	8.0	13.5	19.5	27.0	36.0	45.0	58.5	66.5	103.5

Rebar cut length



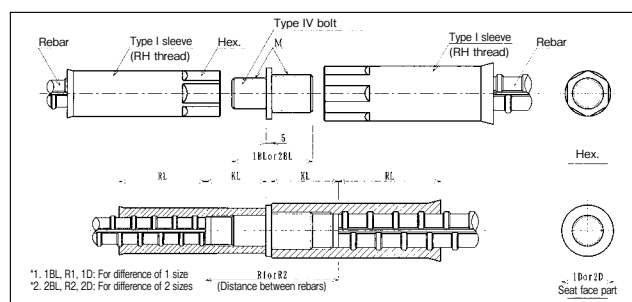
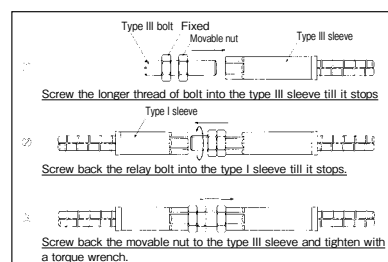
Calculation examples (using Type I, D25)

- ① In case of 40d from the rebar insertion side of the sleeve: Rebar length = 40d + RL = 40 × 25 + 83 = 1,083mm
- ② In case of 40d from the joint side of the sleeve: Rebar length = 40d + KL = 40 × 25 + 46 = 954mm



Neither sleeves is movable nor rotatable.

Working procedures



Either side is axially movable and rotatable.

Working procedures

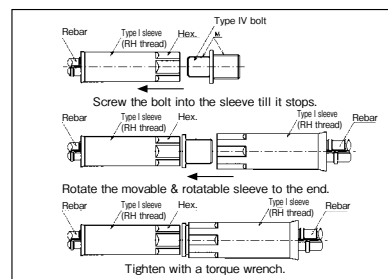


Table of standard rebar cut lengths (in case of 40d) Unit (mm)

Rebar Dia.	40d	RL	KL		In case of [1]	In case of [2]	
			Type I, II	Type III		Type I, II	Type III
D13	520	53	27	53	573	493	467
D16	640	62	33	59	702	607	581
D19	760	63	39	66	823	721	694
D22	880	70	45	74	950	835	806
D25	1,000	83	46	80	1,083	954	920
D29	1,160	88	56	98	1,248	1,104	1,062
D32	1,280	97	58	102	1,377	1,222	1,178
D35	1,400	111	59	107	1,511	1,341	1,293
D38	1,520	121	66	116	1,641	1,454	1,404
D41	1,640	127	68	126	1,767	1,572	1,514
D51	2,040	154	89	154	2,194	1,951	1,886

Disclaimer

Should a malfunction occur to the CS Rebar Joint, we will respond in accordance with the disclaimer below. We are not liable for the following cases:

- Any malfunction caused by failure to observe precautions specified in this catalog.
- Any malfunction caused by design or work which is contrary to what is mentioned in this catalog.
- Any malfunction caused by use for other than intended purpose specified in this catalog.
- Any malfunction caused by work or handling according to specifications (other than standard specifications) instructed by users such as designers or contractors.
- Any malfunction caused by changes in specifications and performance after delivery.
- Any malfunction caused by use, storage, transport, etc., under conditions other than those of the generally anticipated environment for development, manufacturing, sales, etc.
- Any malfunction caused by force majeure (natural disaster, land deformation, ground subsidence, fire, explosion, riot, etc.)
- Any defect which was not reported immediately after its discovery.

CS Rebar Joint : Concrete Joint

Product No. C10-0110

Mechanical joint for concrete joint



Features

- No drilling on formwork panels.
- Post-assembly enables the secure and wide working space.
- Secures the bearing force of rebar.
- Attendance of one-day training course required for qualification of sleeve compression.

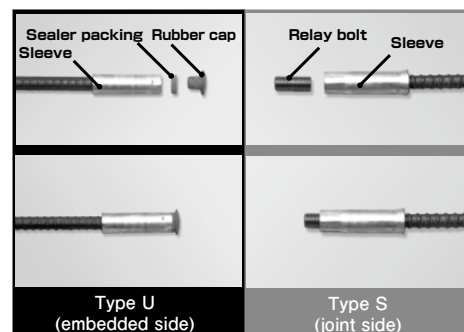
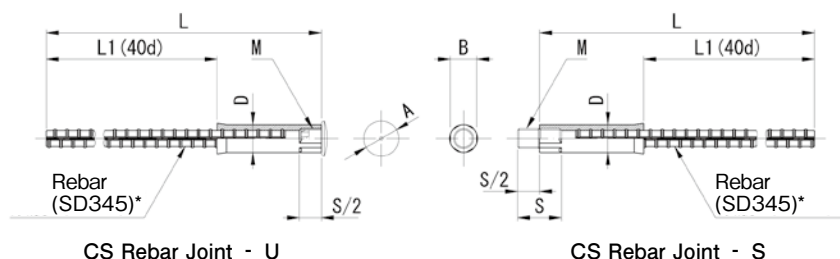
Applicable Rebar

- Diameter: D13, D16, D19, and D22
- Material : SD295A, SD295B, SD345

※ Please consult with us for the installation of the product.

Mechanical joint for rebars, consisting of CS Rebar Joint-U (embedded side) and CS Rebar Joint-S (joint side), used for reinforced concrete construction joint in an opening, etc.

◆Standard dimensions



Cautions

- Do Not use the product once deformation is found.
- Make sure to read the instruction manual before use.
- Do Not purposely change the shape of the product.

Table of standard dimensions

Unit: mm

Rebar Dia.	Location of use	Product	Screw diameter	Total length	Embedment length	Relay bolt length	Outer diameter	Width between 2 sides	Cap diameter
			M	L	L1	S	D	B	A
D13	Embedded side	CS Rebar Joint-U D13	M14×2.0	600	520	32	21.3	19	28
	Joint side	CS Rebar Joint-S D13							
D16	Embedded side	CS Rebar Joint-U D16	M18×2.5	735	640	40	25.6	24	32
	Joint side	CS Rebar Joint-S D16							
D19	Embedded side	CS Rebar Joint-U D19	M20×2.5	862	760	44	30.1	27	38
	Joint side	CS Rebar Joint-S D19							
D22	Embedded side	CS Rebar Joint-U D22	M24×3.0	995	880	52	33.5	32	42
	Joint side	CS Rebar Joint-S D22							

List of mass

Unit: kg

Name	D13	D16	D19	D22
CS Rebar Joint-U	0.70	1.34	2.19	3.50
CS Rebar Joint-S	0.73	1.41	2.28	3.65

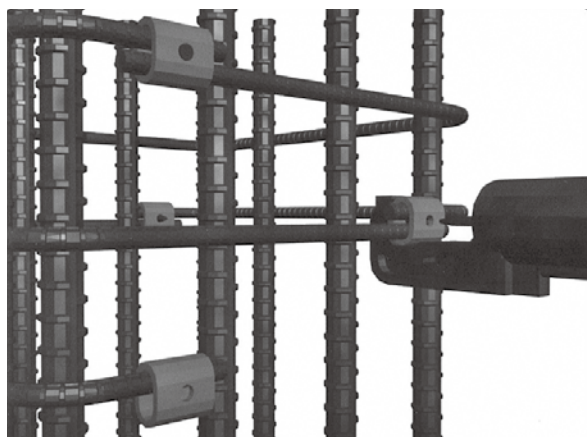
List of mass

Name	D13	D16	D19	D22
Working torque value (N·m)	25	55	75	130

OS Rebar Sleeve

Splicing sleeve for rebar joint

Product No. C10-0210



● OS Rebar Sleeve is:

Mechanical joint for rebars, connecting with a sleeve and a wedge. at which two rebars are joined by press fitting a wedge by hydraulic equipment into the insertion holes in the elliptic cylinder sleeve which is fitted to the overlapping part of the rebars.

◆Applicable Rebar

Diameter: D10, 13, 16, and 19

Material : SD295A, SD295B, SD345

※ Please consult with us for the installation of the product

◆Shape & dimensions

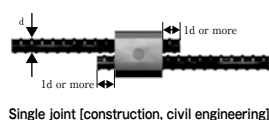
■Sleeve

Rebar Diameter	Sleeve length L	Outer diameter 1 OD1	Outer diameter 2 OD2	Thickness t	Hole diameter WH
D10	36	30	18.2	3.1	10.2
D13	40	39	24.6	4.5	10.2
D16	60	46.3	29	5	14.8
D19	70	56.5	34	6	16.8

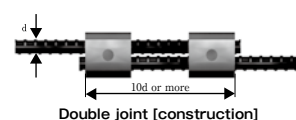
■Wedge

Rebar Diameter	Wedge length L	Wedge diameter D	L1	Shape
D10/D13	37	10	12	
D16	43	14	10	
D19	48	16	10	

◆Joint method



Single joint [construction, civil engineering]



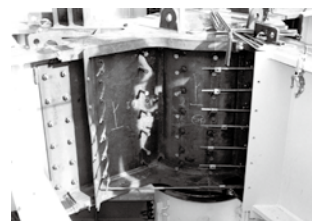
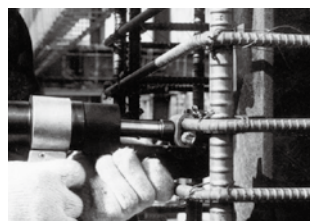
Double joint [construction]

◆Press fit equipment

■Necessary work space (separate type)

	A	B	C	D	E	F
D10	66	76	72	25	26	52
D13			79			
D16	87	97	102	35	32	65
D19	99	109	104			

◆Usage examples



Cautions

Please read the technical documents and instruction manual before designing and work.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

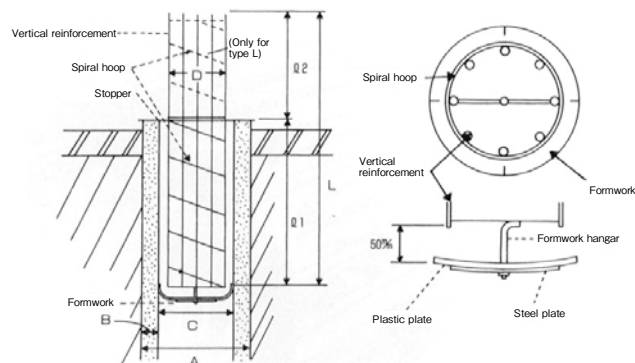
G

Civil Engineering

Pile Head Basket

Basket-shaped assembled reinforcement bar for pile head

Product No. C20-0010



Pile Head Basket
300 ϕ
350 ϕ
400 ϕ
450 ϕ
500 ϕ
600 ϕ

Features

- Installation is completed just by inserting the product into the pile from the pile head.
- Reinforcement of the inside of the pile and concrete form work can be performed simultaneously.

Size	Concrete pile		Pile head rebar unit					
	Outside diameter (A)	Inside diameter (C)	Outside diameter (D)	Total length L	ℓ_1	ℓ_2	Vertical reinforcement/Quantity	Spiral hoop/pitch
P B-300	300	180	120	1050	450	600	D-13/6	D-10 / 100
P B-350	350	220~230	160	1125	525	600	D-13/6	D-10 / 100
P B-400	400	250~260	190	1200	600	600	D-13/6	D-10 / 100
P B-450	450	290~300	210	1275	675	600	D-13/8	D-10 / 100
P B-500	500	320~340	240	1350	750	600	D-13/8	D-10 / 100
P B-600	600	400	320	1500	900	600	D-13/8	D-10 / 100

* Please contact us for special order items.

Pile Head Cover

Prevention cover for concrete infiltration on pile head

Product No. C20-0110



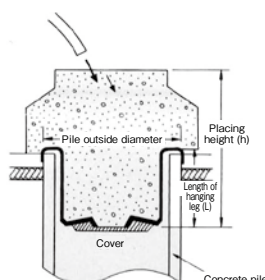
Product	Concrete pile used		Quantity (pc/case)
	Outside diameter	Inside diameter	
P250	250	150	30
P300	300	180	30
P350	350	220~230	30
P400	400	250~260	30
P450	450	290~300	30
P500	500	320~340	30
P600	600	400	15

Features

- Installation is easy with three hanging legs.

Cautions

- Do not apply ready-mixed concrete directly to the cover with concrete pump.
- When the placing height (h) from the concrete pouring position to the cover is 2m or more, or the chipped surface of the pile and the hanging legs are not engaged sufficiently, provide the following reinforcing measures.
- Before placing leveling concrete, place ready-mixed concrete approximately 100mm~150mm in thickness from the bottom of the cover, and cure it for two to three days.
- Bind the main reinforcement of the pile and the hanging legs with tie wire, etc.



Hanging leg	Quantity (pc/case)
L 200	30
L 300	30
L 400	30
L 500	30
L 600	30
L 700	15
L 800	15
L 900	15
L 1000	15
L 1100	15
L 1200	15

* Other sizes are made to order.
* The legs fit any cover.

Slab Bolster

Steel bolster for slab / bottom beam work

Product No. C30-0010

Features

- Special steel wire enables the higher strength than the conventional bolster.
- Coated with compressive-resistant high performance resin.

Connecting bolster

■ Bar type bolster



Slab bolsters

■ For upper rebar
(black finish/rust-proof)



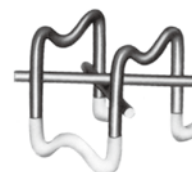
■ For upper rebar
(with plates)



■ For lower rebar
(black finish/rust-proof)



■ For lower rebar
(with a reinforcing cross)
(black finish/rust-proof)



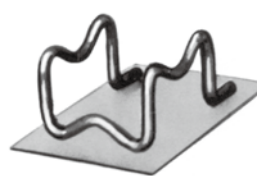
■ For upper rebar
(with a reinforcing cross)
(black finish/rust-proof)



■ For upper rebar
(with poly-caps)
(black finish/rust-proof)



■ For lower rebar
(with a plate)



■ For lower rebar
(with poly-caps)



		For lower rebar [height (mm)]	For upper rebar [height (mm)]
Slab Bolster	Black finish	10-40 (5 spacing)	50-160 (10 spacing)
	Rust-proof		
	With a plate	20-40 (5 spacing)	50-160 (10 spacing)
	With poly-caps		
Bolster with a reinforcing cross	Black finish	20-40 (5 spacing)	50-230 (10 spacing)
	Rust-proof		
Bar type bolster	Black finish	20-40 (5 spacing) × 900 [length (mm)]	50-200 (10 spacing) × 900 [length (mm)]
	Rust-proof		
	With a plate		

A

Temporary
Construction

B

Concrete
Formwork

C

Rebar Work

G

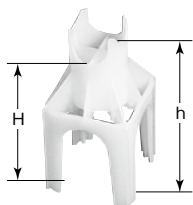
Civil
Engineering

Plastic Spacer

Plastic Spacer for securing covering depth

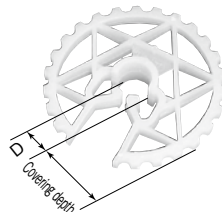
Product No. C30-0110

Tower type
(for slab upper rebar)



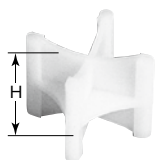
Size (H×h)
70× 80
90×100
110×120

Donut type
(for wall, column and beam)



Size (H×h)
D 9×30
D 9×40
D10×30
D10×40
D10×50
D10×60
D13×30
D13×40
D13×50
D16×40
D16×50
D16×60
D19×50
D19×60
D19×70

Dice type
(for slab lower rebar)



Size (H×h)
20
25
30
30×40
50×60

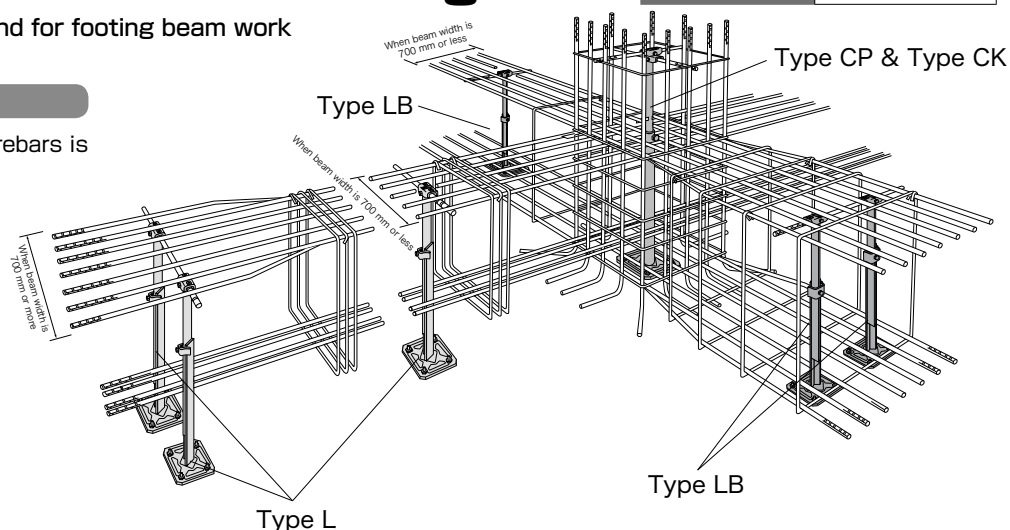
Footing Beam Stand : Large

Rebar assembling stand for footing beam work

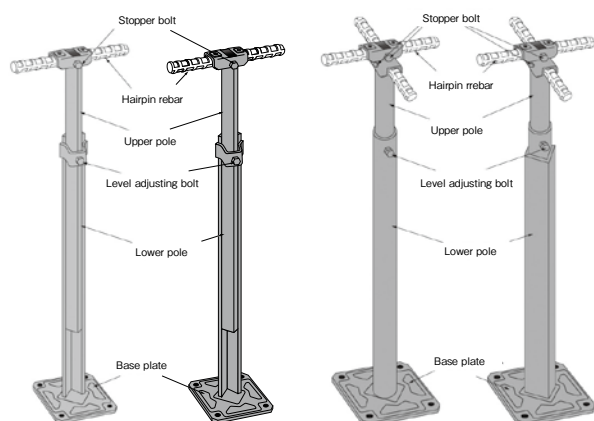
Product No. C40-0010

Features

- Scaffolding for assembling rebars is not necessary.
- Height adjustment function enables accurate rebar arrangement.
- Hairpin rebar can be easily fixed.



Size



Type L - For beam - Type LB

Type CP - For pillar - Type CK

	Model	Adjustment height H (mm)	Pole		Base plate size	Applicable beam width (mm) per 1 Unit	Allowable load kN (kgf)	Weight (kg/pc)
For beam	L 507	400~ 640	L30×30×3	L40×40×3	□150×2.6	700 or less	3.92 (400)	2.0
	609	500~ 840			□200×2.6			2.3
	1015	800~1440			□250×2.6			3.3
	1217	1150~1740			□250×2.6		2.94 (300)	4.4
	1520	1450~2040	L40×40×3	L50×50×4	□250×2.6		1.96 (200)	4.8
	LB1520	1150~2130			□250×2.6		3.92 (400)	5.4
	1625	1550~2540			□250×2.6		2.94 (300)	6.8
	2030	1880~3140			□250×2.6		2.94 (300)	10.0
For pillar	CP1625	1550~2540	φ34×2.3	φ42.7×2.3	□250×3.2	800 or less	3.92 (400)	7.1
	2030	1850~3170		φ42.7×2.3	□250×3.2			8.1
	CK2035	2050~3590		□50×50×2.3	□250×3.2			11.1

Use D25 hairpin rebar (not included in the product configuration).

Cautions

- The vertical load allowed for each product is up to the above-mentioned "allowable load."
- Be sure to align the top end level of all products so that they will receive a uniform load.
- Perform plumbing and correction of the product before arranging reinforcement.
- Arrange the product vertically through the use of a stay bar, etc., to prevent lateral movement as shown in Fig. 1.
- Do Not use the product as scaffolding.
- Precautions for arrangement
 - Space the products so that they will not receive a load that exceeds the allowable load.
 - Supporting the product is complicated where beam reinforcements are crossed or around pillars. Therefore, be sure to examine load before arranging the product.
 - The top end of the leveling concrete on which the baseplate is installed should be finished level.
 - Be sure to secure the baseplate with four anchor bolts.
 - Cure the leveling concrete until its compressive strength is enough to obtain the predetermined anchor bolt strength.
 - Tighten the level adjusting bolt with a tightening torque of approximately 2.94kN·cm (300kgf·cm). In case the bolt may be loosened due to vibration, etc., reinforce the bolt by welding.

[Example of reinforcement of level load]

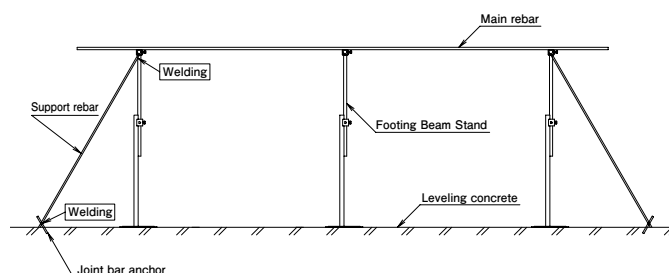


Fig. 1 Example of reinforcement

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

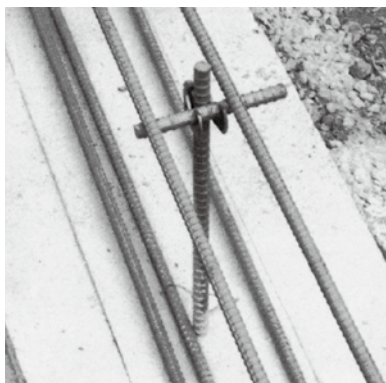
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Civil Engineering

Footing Beam Stand : small

Main reinforcement supporting stand for small footing beam work

Product No. C40-0110



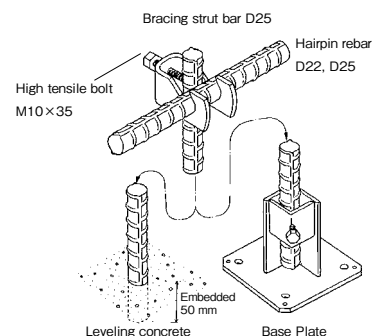
Features

- Rebars (D25) on-site can be used.
- Hairpin rebar can be mounted easily with a 3/8" spanner.
- Deformed bars (D25, D22) can be used as hairpin rebar.
- Hairpin rebar can be fixed at any position (height).
- After marking, the product can be fixed at a precise position by using the product base.

Allowable load 2.94kN (300kgf)

Product	Weight (kg/pc)	Quantity (pc/bag)	Weight (kg/bag)	Packing
Stand	0.50	50	25	PP bag
Base Plate	0.85	—	—	—

* D29 is also available as Made-To-Order.



Cautions

- Use a rebar (D25) as a bracing strut bar.
- Secure the product base firmly to the leveling concrete with concrete anchors or concrete nails.
- Use the product where beam height is 1m or less and width is 400mm or less.
- Be sure to use the product within the allowable load.

Beam Lowering Stand I

Lowering device for assembled beam rebars

Product No. C50-0310



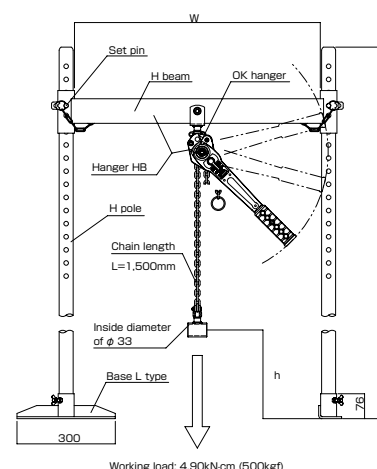
Features

- The lowering device (lever hoist) rotates horizontally for easy operation in any direction.
- By pulling either side of the chain, the lowering device and steel beam bar can be easily set.
- Assembly, disassembly and height adjustment can be easily performed with 'set pins'.

Allowable
load

4.90kN (500 kgf)/stand

Shape & dimensions



Example of use



Specs

Part name		Weight (kg)	W (mm)
Hanger HB	750	8.4	750
	1000	9.2	1000
Product	L (mm)	Weight (kg)	W (mm)
H pole	800	2.3	500
	1200	3.5	900
	1600	4.8	1300
	2000	6.0	1700
	2500	7.8	2200
Base L type		1.2	—

Cautions

- Please read the instruction manual.
- Use the product within the allowable load.
- When using the product, adjust it with the H pole holes so that the beam materials become horizontal.
- Never suspend the materials in such a way that they receive eccentric load.
- Be sure to avoid excessive hoisting or rewinding as either can cause damage or an accident.
- Be sure to inspect the product before use.
- Never modify the product or its accessories, or use the product for any purpose other than its intended purpose.

* One set consists of ————

- 1 Hanger HB750
- 2 H poles 1600
- 2 Bases L type

[Weight (set): 20.5kg/set]

A

Temporary
Construction

B

Concrete
Formwork

C

Rebar Work

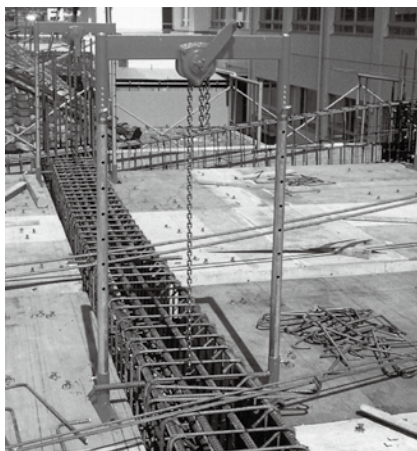
G

Civil
Engineering

Beam Lowering Stand II

Lowering device for assembled beam rebars

Product No. C50-0320

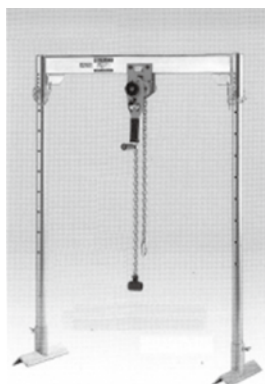


Features

- Large force is not required when hoisting because of the use of a chain block.
- Assembly, disassembly and height adjustment can be easily performed with 'set pins'.

Allowable load	4.90kN (500 kgf)/stand
----------------	------------------------

1t (HJN-1110)



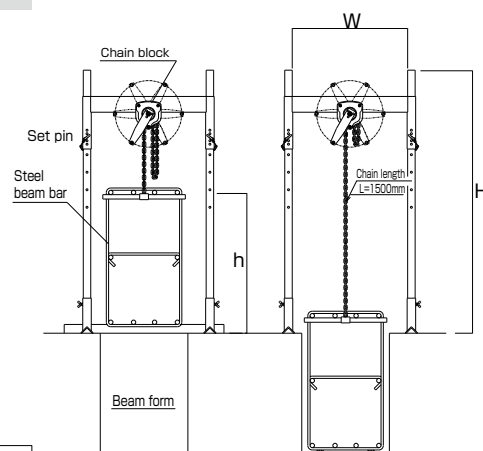
Specs

Height (mm)	1,500
Effective dimensions (mm)	950
Lifting capacity (kg)	1,000
Weight (kg)	30

Size	W	650				
	H	800	1200	1600	2000	2500
Range of use	h	500	900	1300	1700	2200
Lowering method	Rotate the chain block 360° to lower.					
Allowable load	4.9kN/Jack					
Weight	21kg/Jack (standard 650×1600)					

* One set consists of
[Weight (set): 21kg/set]

Shape & dimensions



Cautions

- See precautions for Beam Lowering Stand.

- 1 arm
- 2 H poles 1600
- 2 bases.

Unit-Type Sliding Form

Large size sliding formwork for civil engineering work

Product No. G-0010

The Sliding Form Unit has been developed to realize efficient formwork for large concrete structure, such as culverts, water channels, noise insulating walls, wave breakers, bank protections.

◆Examples of use



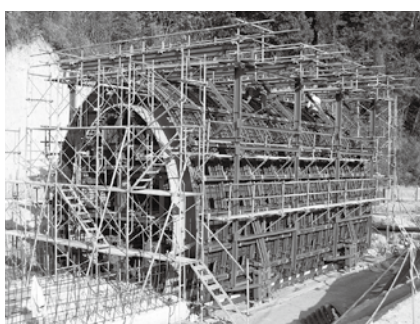
Wave breaker upper formwork



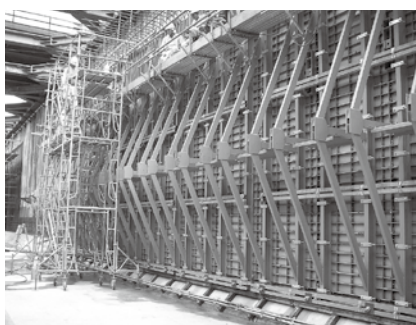
Bank protection



Slip form



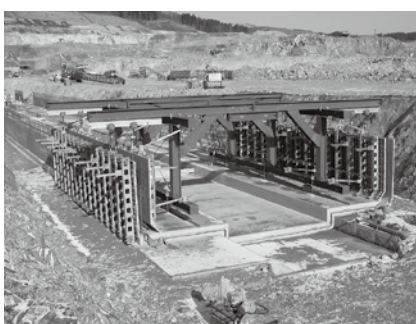
Arched culvert



Box culvert side wall



Inverted T retaining wall



Water channel



Flood barrier



Lark 60 System (falsework)



Retaining wall

Features

- By assembling Wide Panel Beams (general-purpose battens) and Okabe's original construction materials, USF method can be applied to many types of construction projects.
- Assembly and disassembly of

formwork can be easily performed with a ratchet spanner, etc.

- Many design patterns are available.
- As supporting material, Lark 60 System (maximum bearing capacity: 60 tons/piece) is used.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

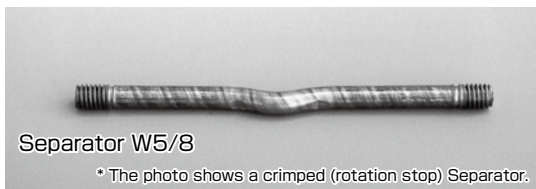
Inner Unit W5/8

For large size formwork

Product No. G-0110

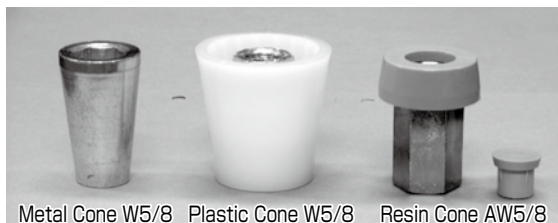


Form Tie W5/8



Separator W5/8

* The photo shows a crimped (rotation stop) Separator.

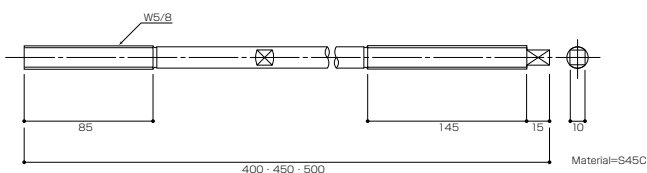


Metal Cone W5/8 Plastic Cone W5/8 Resin Cone AW5/8



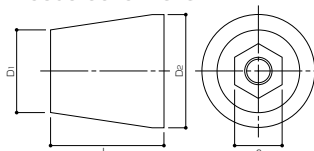
K-Rib W5/8 (S45C)

Form Tie W5/8

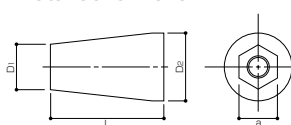


Cones

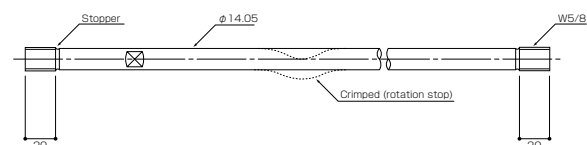
Plastic Cone W5/8



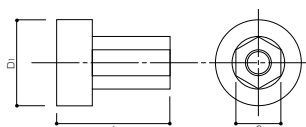
Metal Cone W5/8



Separator W5/8



Resin Cone A W5/8



Product	D ₁	D ₂	L	a
Plastic Cone W5/8	36	50	50	21
Metal Cone W5/8	20	30	50	17
Resin Cone A W5/8	38	—	50	23

Made-To-Order is also available.
Please specify the total length (wall thickness), thread length, material, and whether crimped or not (Separator).

Product	Weight (pc/kg)	Quantity (pc/bundle)	Weight (kg/bundle)	Packing
Form Tie W5/8 – 400 (S45C)	0.55	25	14	Secured with rope
– 450 //	0.61	25	15	Secured with rope
– 500 //	0.67	25	17	Secured with rope
Separator W5/8	—	—	—	—
W5/8 (S45C)	—	—	—	—
Product	Weight (pc/kg)	Quantity (pc/bag)	Weight (kg/bag)	Packing
Plastic Cone W5/8	0.135	100	14	PP bag
Resin Cone A W5/8	0.11	200	22	PP bag
Metal Cone W5/8	0.125	200	25	PP bag
Flat Rib K W5/8 ^{*1}	0.428	50	21.4	PP bag
Flat Rib RB 16-9-150 ^{*2}	1.40	—	—	—

*1 Strong Washer 5/8 (King Washer) with allowable load of 72kN (7,200kgf) is also available.

*2 Made-To-Order for different size of Flat Rib RB is available. Please specify the dimensions, thickness and hole diameter.

◆Allowable load

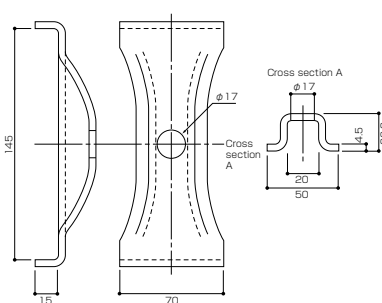
Designation	Material	Breaking load kN (tf)	Allowable load kN (tf)
Form Tie W5/8	—	SS400 equivalent	60 (6.0)
	S45C	S45C	103 (10.3)
			42 (4.2)
			72 (7.2)

* W3/4, W7/8 and larger diameters are available.

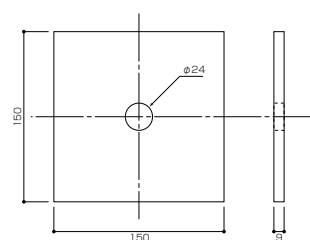
Please specify the thread diameter, thread length, and total length. When ordering square washers, please specify the dimensions, thickness and hole diameter.

Washers

Flat Rib K W5/8 (S45C)



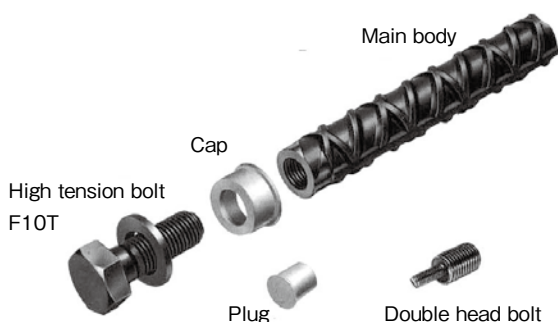
Flat Rib RB 16-9-150



Falsework Bracket Insert

Insert for falsework bracket

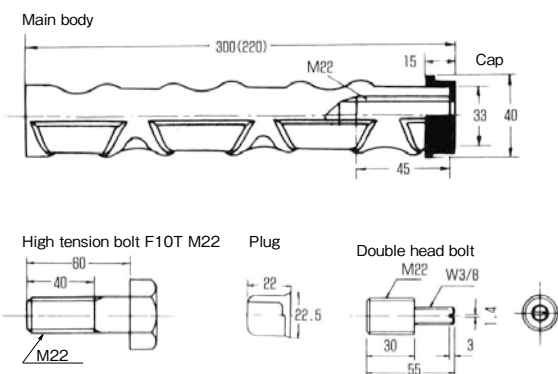
Product No. G-0120



If you use double head bolt to temporarily fasten the product, the drill holes in the face plate of metalform can only be clearance holes of W3/8, resulting in easy repairs.

Product	Quantity (pc/case)	Weight (kg/case)	Packing
Main Body 35-220	15	22	Case
35-300	10	20	Case
35-400	—	—	—
Bolt M22-60 (with washer)	75	24	Case
Double Head Bolt for Metalform for 12mm	100	8	Case
Plug	500×7	18	Case
Cap	250×6	8	Case

Size



Allowable load

- Allowable shearing load: 58.0kN/pc (6,000kgf/pc)
- Allowable tensile load: 49.0kN/pc (5,000kgf/pc)
- * Concrete compressive strength: 21N/mm² (210kgf/cm²).

Cautions

- Main Body 35-220 must be used only for a channel brackets with rebar attached below.
- For High Bracket, use the product Main Body 35-300.
- The allowable load may vary according to the installation spacing. Please consult us about designing and execution of work.
- Installation rebar plates (High Form for metal, High Plate for plywood) are available to secure accuracy of the product installation.

Cone : Falsework Bracket

For falsework bracket insert to secure covering depth

Product No. G-0210

Features

- Cone shape does not apply the bending stress to the attaching bolt, and enables the secure installation of falsework bracket.
- Reusable and easy extraction.
- The surface of the product is covered with the heat-shrinkable tube and easy to extract from the concrete.



How to use

- Use the product with Falsework Bracket Insert. Falsework brackets can be installed directly to the product.
- After the removal of the bracket, extract the product and cover the hole with mortar, etc.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

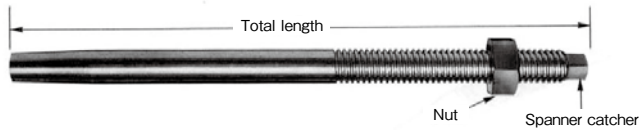
G

Civil Engineering

She Bolt

Positioning & fastening bolt for dam formwork panel

Product No. G-0310

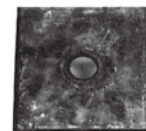


Diameter	Inside screw diameter	Length (mm)						
		300	350	400	450	500	550	600
		Weight (PC)(kg)						
φ22	W1/2	0.82	0.94	1.04	1.20	1.36	1.52	1.64
φ25	W5/8	—	1.40	1.40	1.60	1.80	1.95	2.15
φ28	W3/4	—	1.55	1.75	2.00	2.25	2.50	2.75
φ32	W3/4	—	2.07	2.33	2.67	3.00	3.33	3.67

* Made-To-Order is also available.

Features

- Designed to secure positioning and tightening of dam formwork.
- The guide hole at the tip enables quick assembly.
- Can be used for tightening large formwork instead of using Form Tie and Plastic Cone, and even attachable from outside with Separators attached.



Parts for She Bolt

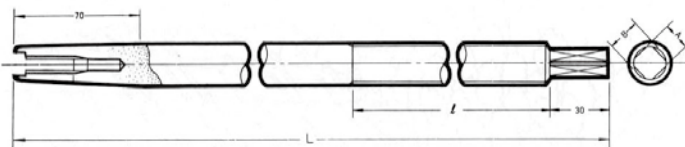
Square washer for She Bolt

Unit: mm

She Bolt	Washer dimensions
φ22~25	125×125×9
φ22, 25, 28, 32, 36, 38, 42	150×150×9
φ22, 25, 28, 32, 36, 38, 42	150×150×12
φ22, 25, 28, 32, 36, 38, 42	150×150×16

Unit: mm

Size



Outside diameter	φ22	φ25	φ28	φ32	φ36	φ38	φ42
Inside screw diameter	W1/2	W5/8	W3/4	W3/4	W7/8	W7/8	W1
Inside screw depth	25	35	40	40	45	45	50
Outside screw length (ℓ)	100 up to the total length L=300		150 up to the total length L=350		200 up to the total length L=400		
Corner joggle	13×13	13×13 (15×15)	17×17	19×19	22×22	24×24	27×27
Thickness of nut	18	20	22	25	28	30	35

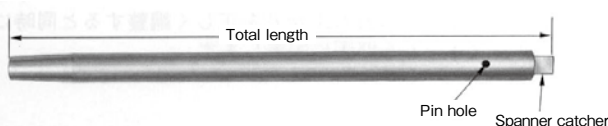
Dummy Bolt

Bolt for installing Pig-Tail Anchor

Product No. G-0320

Examples of use

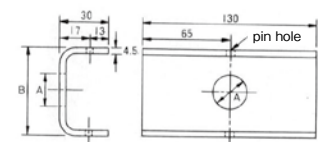
Parts for Dummy Bolt



Holder



Holder pin

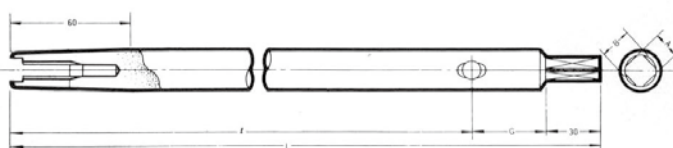


Unit: mm

Dummy bolt outer diameter	φ22	φ25	φ28	φ32
Holder hole diameter (A)	φ24	φ28	φ33	φ36
Width (B)	55	55	55	60
Pin diameter	φ6	φ6	φ6	φ6

Unit: mm

Size



Outside diameter	φ22	φ25	φ28	φ32	φ36	φ38	φ42
Inside screw diameter	W1/2	W5/8	W3/4	W3/4	W7/8	W7/8	W1
Inside screw depth	25	35	40	40	45	45	50
First pin hole location (ℓ)	As per your specification.						
Corner joggle	13×13	15×15	17×17	19×19	22×22	24×24	27×27

Pig-Tail Anchor

Slip-proof hook anchor

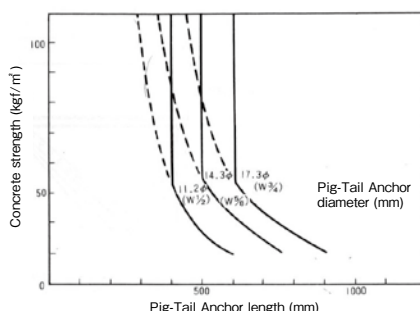
Product No. G-0330



◆Example of use



The relationships between concrete strength and embedding length of Pig-Tail Anchors



Features

- Secured non-slip effect solves a weakness of conventional hook anchors.
- By being attached to the Dummy Bolt, the anchor can be set from outside of the formwork.

Thread diameter	Length (mm)	Weight (kg/pc)	Quantity (pc/bundle)	Weight (kg/bundle)	Packing
W1/2	460	0.36	40	14	Bundle
W1/2	610	0.47	40	19	Bundle
W5/8	460	0.58	25	14	Bundle
W5/8	610	0.76	25	19	Bundle
W3/4	610	1.12	20	22	Bundle
M12/	460	0.33	50	16	Bundle

* We also manufacture Pig-Tail Anchors of other sizes as made to order.

◆Characteristics

Thread diameter	Cross section (mm ²)	Breaking load Pb kN (tf)	Yield load Pb _{0.7} kN (tf)
W1/2	89	44.1 (4.5)	30.4 (3.1)
W5/8	146	72.6 (7.4)	50.0 (5.1)
W3/4	217	107.9 (11.0)	75.5 (7.7)
W7/8	299	149.0 (15.2)	104.0 (10.6)

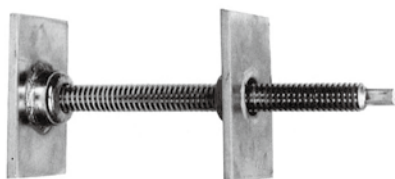
◆Allowable load

Thread diameter	Embedding length (mm)	Load kN(tf) when displacement is 3 mm
W1/2 (φ 11.2)	460	35.3 (3.6)
	610	37.3 (3.8)
W5/8 (φ 14.3)	460	44.1 (4.5)
	610	62.8 (6.4)
	760	70.6 (7.2)
W3/4 (φ 17.3)	460	58.8 (6.0)
	610	82.4 (8.4)
	760	86.3 (8.8)

Angle-Adjuster Bolt

Angle-adjusting hardware for dam formwork

Product No. G-0340

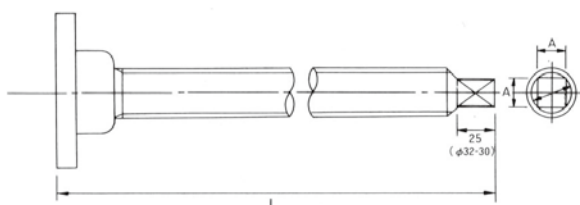


(Universal type, without coating)

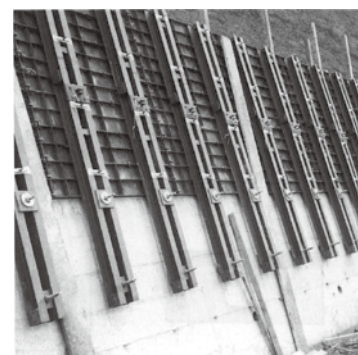
Features

- Firmly fastens dam formwork, especially the erection of cantilever.

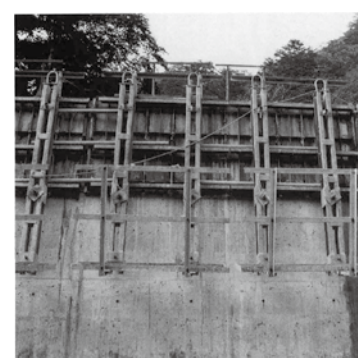
◆Size



◆Examples of use



Erosion-control dam



Retaining wall

Outside diameter	φ22	φ25	φ28	φ32
Corner joggle A	13×13	15×15	17×17	19×19
Jack bolt length (L)	300, 350, 400, 450, 500, 550, 600			

Cebo Hardener 20

Surface preparation agent for concrete joint

Product No. G-0410



◆Usage instructions

- After placing and breathing of concrete are done, spread Cebo Hardener 20 with sprayers or water pots.
- Application amount: 300g/m², 60m²/can

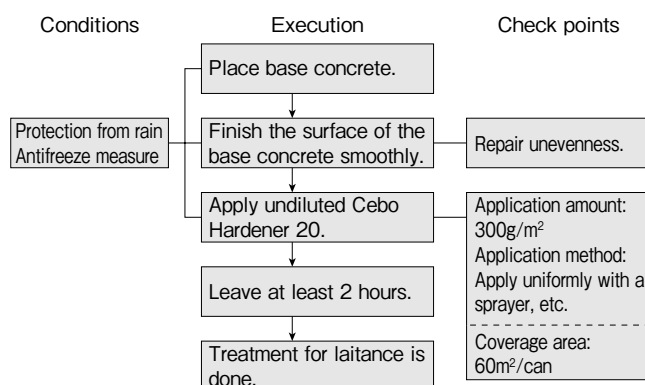
Cautions

- Do not use the product under rainy and freezing weather.
- Store the product at temperatures of 5~40°C.
- The product freezes at 0°C or below and coagulates at 60°C or above, and does not return to the original condition.
- Storage period is approximately 6 months.

Features

- The polymer concrete layer covers the concrete surface and laitance, and also prevents hair cracks caused by drying shrinkage.
- Works perfect at the congested rebar areas, and can shorten the work periods.
- The polymer concrete layer formed on the concrete surface is effective for preventing hair cracks caused by drying shrinkage.
- Enhances wear-resistance and effective for preventing dust.

◆Working method



Disparlight

Product No. G-0420

Surface preparation agent for concrete joint

Spray type for horizontal joints



Disparlight CR 18kg

◆Performance

Specific gravity	Condition	PH	Viscosity (20°C)	Etching depth	Usage instructions	Sprayed surface	Standard coating amount
1.07	Light brown liquid	7.5 ± 0.5	100Pa · s	3 ~ 5mm	Spray with a watering can or sprayer.	Concrete surface	300g/m ²

How to use

- Exposes aggregates on the surface by uniform osmotic force, resulting in enhanced adhesion and waterproof performance of the joints.
- Does not deteriorate the concrete strength. Forms economical and highly water-tight joints compared to the conventional green cut method.
- No harmful substances are used as main ingredients.

Cautions

- To wash away Disparlight CR, use a high pressure washer (approximately 30kg/cm²).
- Provide protection with cover plate, etc., before spraying in order to prevent Disparlight CR from flowing in directly between the formwork and concrete.(If Disparlight CR flows in, etching may occur on the concrete surface after the formwork is removed.)
- Spray Disparlight CR uniformly with sufficient care. (Insufficient or uneven spray causes uneven etching.)
- Disparlight CR is stable until -5°C but store it in such a way as to avoid freezing.

Application type for vertical joints



Disparlight DV 18kg

◆Performance

Specific gravity	Condition	PH	Viscosity (20°C)	Etching depth	Usage instructions	Sprayed surface	Standard coating amount
1.1	Light brown viscous liquid	8.0	14000 ± 1000Pa · s	3 ~ 5mm	Apply with a brush or roller brush.	Formwork surface	350 ~ 450g/m ²

How to use

1. Apply Disparlight DV to formwork before placing concrete
2. Curing of concrete
3. Remove formwork within a certain time
4. Wash concrete surface

Cautions

- The retardation effects of Disparlight DV are affected by temperature. Therefore, pay sufficient attention when washing the concrete after removing formwork.
- Provide protection such as covering with a sheet in order to prevent outflow due to rain etc.
- Twice application of Disparlight DV is recommended to prevent uneven exposure of aggregates by washing. The amount of each coat should be approximately 1/2 of the standard application amount of Disparlight DV.
- After application of Disparlight DV, the coat dries up but when it comes into contact with fresh concrete, it becomes wet and effective again.

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

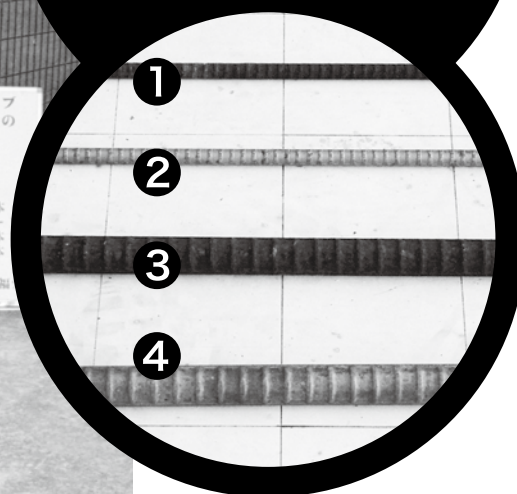
Rust-proof Tube

Rust-proof tube for rebar

Product No. G-0430



The result of an exposure comparison test
《after lapse of 3 years》
1 & 3: W/O Product
2 & 4: With Product

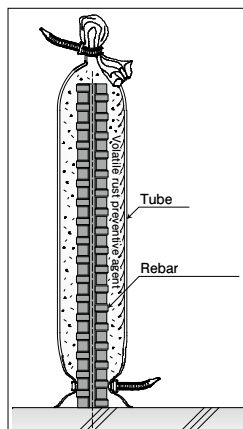


Features

- Easy application by putting the product over the rebar.
- Significantly reduces cleaning work of the rebar.
- Visually observable.

◆ Rust Prevention

The rust preventive component mixed in the product evaporates, and dissolves in the water vapor inside the tube which, forms a rust preventive film on the surface of the rebar. (See the figure below.)



◆ Comparison with conventional working method

	Rustect	Application type agent
Workability	Put a tube over a rebar, fold down the ends and close it with a string, tape, packing tape, band, etc.	Uneven application may occur.
Worker	No skills required.	Skills required.
Curing period	For both long and short periods.	The agent needs to be selected depending on the curing period.
Handling and storage	Avoid direct sunlight.	Fire is strictly prohibited as it is volatile.

◆ Size

Product	Applicable rebar diameter	Size width (mm) × length (m)	Quantity (pc/case)	Weight (kg/case)	Packing
Rustect 40	~D16	40×200	6	9.6	Case
Rustect 50	~D22	50×200	5	9.5	Case
Rustect 60	~D29	60×200	4	9.2	Case
Rustect 80	~D38	80×200	3	9.3	Case
Rustect 100	~D51	100×200	3	11.4	Case

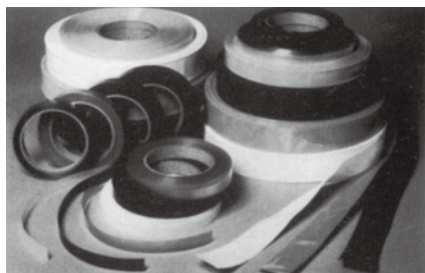
Cautions

- Check the product for holes, damage, etc., before use.
- Inspect again after the installation.
- Be sure to fold down the end of the product to avoid water exposure.
- Avoid direct sunlight and high temperatures for storing.
- Make sure to avoid fire, etc as the product may catch a fire.
- The color of the product may be change, but does not affect the rust preventive effect.

Heat-Shrinkable Masking Tube

Product No. G-0510

Masking tube for rebar



Features

- Curing of rebars and anchor bolts.
- Prevention of concrete leakage adhesion to rebars.
- When heated, the product shrinks and fits the surface of rebars regardless of the shapes.

Product	Length (m)
Heat-Shrinkable Masking Tube D10	200
D13	
D16	
D19	
D22	
D25	
D29	
D32	

Anti-Galling Spray

Product No. G-0520



Features

- Excellent lubricity with added fluorine compound.
- Quick-drying and non-sticky.
- Transparent film does not affect aesthetics of the material.

Application

- Anti-seizing lubricant for stainless bolts and nuts.
- Prevents tightening troubles for various steel screws.

Cautions

- Since this is a combustible product contains high pressure gas, please confirm precautions specified on the product label before use.

Product	Weight (kg/pc)	Quantity (pc/case)	Packing	Weight (kg/case)
Anti-Galling Spray	0.3	12	Case	3.9

A

Temporary Construction

B

Concrete Formwork

C

Rebar Work

G

Civil Engineering

Alphabetical Order

A

Achilles Thermal Insulation Board	79 (B50-0210)
ADEKA Stopper	76 (B40-0330)
ADEKA Ultra C Ring	73 (B40-0020)
ADEKA Ultra Cone	74 (B40-0210)
ADEKA Ultra Ring	73 (B40-0010)
ADEKA Ultra Seal	73 (B40-0110)
Air Fence	89 (B90-0350)
Angle-Adjuster Bolt	123 (G-0340)
Anti-Galling Spray	127 (G-0520)
Assembly Securing System	29 (A80-0020)

B

Balcony Chamfer	88 (B90-0330)
Balcony-Wall Joint I	19 (A30-0430)
Balcony-Wall Joint II	20 (A30-0440)
Balcony-Wall Prop : Inside	67 (B30-0310)
Balcony-Wall Prop Hook	68 (B30-0320)
Balcony-Wall Support : Outside	65 (B30-0110)
Beam Clamp	5 (A10-0040)
Beam Clamp Multipurpose	6 (A10-0050)
Beam Formwork Holder	63 (B30-0050)
Beam Lowering Stand I	117 (C50-0310)
Beam Lowering Stand II	118 (C50-0320)
Beam-Tie Joint	17 (A30-0340)
Board Holding Plate	80 (B50-0320)
Bottom Hanging Joint	57 (B14-0030)
Bottom Pipe Supporting Hook	51 (B10-0570)

C

Cable Protection Bridge	25 (A60-0010)
Cantilever	72 (B30-0530)
Cebo : Releasing Agent	99 (B90-0910)
Cebo Hardener 20	124 (G-0410)
Ceiling Insert	81 (B70-0110)
Ceiling Insert : Steel Deck Plate	82 (B70-0120)
Chain Hanging Loop : Beam	15 (A30-0310)
Chain Hanging Loop : Insert	15 (A30-0320)
Clamp Cover	7 (A10-0120)
Cone	36 (B10-0110)

Cone : Falsework Bracket	121 (G-0210)
Cone Bond	39 (B10-0240)
Corner Fastener	48 (B10-0530)
Corrosion Inhibitor	99 (B90-0920)
Covering Depth Marker	100 (B90-0980)
CS Rebar Joint	108 (C10-0010)
CS Rebar Joint : Concrete Joint	110 (C10-0110)
Cylindrical Paper Formwork	87 (B90-0320)

D

Decorative Tile	93 (B90-0620)
Decorative Tile : Civil Engineering	94 (B90-0630)
Demolition Support Falsework	66 (B30-0210)
Disparlight	125 (G-0420)
Drafttight	83 (B80-0010)
Dummy Bolt	122 (G-0320)

F

Falsework Bracket Insert	121 (G-0120)
Flat Rib	42 (B10-0340)
Flat Rib with Wedge	43 (B10-0350)
Flat Rib with Wedge	43 (B10-0360)
Floating Formwork Support : Rebar	53 (B10-0590)
Floating Formwork Support : Slab	53 (B10-0600)
Floor Mat : Slab Rebar	27 (A60-0040)
Floor Mat : Walkway	27 (A60-0030)
Floor Plate : Heavy Machinery	26 (A60-0020)
Foamed Chamfer/Joint Strip	102 (B96-0110)
Foamed Chamfer/Joint Strip (Black)	104 (B96-0210)
Footing Beam Stand : Large	115 (C40-0010)
Footing Beam Stand : small	116 (C40-0110)
Form Tie	40 (B10-0310)
Form Tie Spanner	45 (B10-0420)
Form Tie with 3-Shaped Rib	42 (B10-0320)

G

Girder Stabilizer	62 (B30-0040)
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H

H-Beam Scaffolding Hanging Frame : Welding	18 (A30-0410)
H-Beam Scaffolding Hanging Frame : Welding-Free	19 (A30-0420)
Heat-Shrinkable Masking Tube	127 (G-0510)

I

Inner Unit W5/8	120 (G-0110)
Insert : Window Frame	82 (B70-0210)

J

Jack Base	13 (A30-0080)
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L

L-Pin	98 (B90-0840)
Ladder Formwork support	52 (B10-0580)
Leakage cover	55 (B10-0620)
Light-Weight Beam AX	71 (B30-0520)
Light-Weight Beam SX	70 (B30-0510)

M

Manhole Formwork	98 (B90-0820)
Measuring Pole	101 (B90-0990)
Mejittack	84 (B80-0110)
Mesh Plate	30 (A80-0030)
Metal Form	97 (B90-0810)
Metal Lath	91 (B90-0510)
Metal Lath Formwork	90 (B90-0410)
Mortar Cone	39 (B10-0230)

N

NEOMA Foam	78 (B50-0120)
NEOMA Foam : Fireproof	78 (B50-0110)

O

OS Rebar Sleeve	111 (C10-0210)
Overtightening Restrainer	44 (B10-0410)

P

Panel Adjuster	49 (B10-0540)
Panel Adjuster : Vertical	55 (B10-0630)
Panel Adjuster : Vertical & Horizontal	56 (B10-0640)
Panel Fastener I	95 (B90-0710)
Panel Fastener II	96 (B90-0720)
Pig-Tail Anchor	123 (G-0330)
Pile Head Basket	112 (C20-0010)

Pile Head Cover	112 (C20-0110)
Pipe Hanging Chain	16 (A30-0330)
Pipe Holder Cup	11 (A30-0020)
Pipe Joint	13 (A30-0060)
Pipe Stabilizer	62 (B30-0030)
Plastic Chamfer/Joint Strip	106 (B96-0310)
Plastic Nail	81 (B70-0010)
Plastic Plug	100 (B90-0930)
Plastic Spacer	114 (C30-0110)
Prop Overturn-Preventive Hook	62 (B30-0020)

R

Rebar/Pipe Cap	7 (A10-0110)
Rib Clip	54 (B10-0610)
Rubber Plate Hanging Hook	75 (B40-0310)
Rust-proof Tube	126 (G-0430)

S

Safety Hook : Column Work	28 (A80-0010)
Safety Net : Fireproof	33 (A80-0240)
Safety Net : Horizontal	32 (A80-0210)
Safety Net : Vertical	33 (A80-0230)
Safety Net Hook : Beam	31 (A80-0040)
Safety Net Hook : Insert	32 (A80-0050)
Safety Net Hook : Pipe	33 (A80-0220)
Safety Sign	7 (A10-0130)
Scaffolding Base Plate	13 (A30-0070)
Scaffolding Bracket	12 (A30-0040)
Scaffolding Rubber Strap	14 (A30-0220)
Scaffolding Walk Board	13 (A30-0210)
Sealing Cone : All-In-One	38 (B10-0210)
Sealing Cone + Tube Bond	38 (B10-0220)
Sealing Plate : Metalform	98 (B90-0850)
Seepage Water Treatment Panel	77 (B40-0410)
Separator	34 (B10-0010)
Separator Joint	50 (B10-0550)
Separator Joint : Sheet Pile	58 (B20-0010)
Separator Joint : Soldier Pile	60 (B20-0040)
Separator Joint : Thermal Insulation Board	80 (B50-0310)
Separator Joint : Timber Lagging	59 (B20-0020)
Separator Joint : Timber Lagging	59 (B20-0030)
Separator Joint Pocket	46 (B10-0510)

Separator-Beam Joint	56 (B14-0010)
Separator-Beam Joint : Welding	57 (B14-0020)
Separator-Rebar Joint	47 (B10-0520)
She Bolt	122 (G-0310)
Shoring Prop	61 (B30-0010)
Shoring Prop Base	64 (B30-0060)
Slab Bolster	113 (C30-0010)
Slab Jinter	50 (B10-0560)
Slide Bracket	12 (A30-0030)
Sliton	85 (B90-0210)
Slope Bracket Hook	22 (A30-0530)
Slope Bracket I	21 (A30-0510)
Slope Bracket II	21 (A30-0520)
Slope Scaffolding	23 (A30-0540)
Styrofoam	78 (B50-0010)

T

Transparent Formwork Panel ...	92 (B90-0610)
Triple Clamp	4 (A10-0030)

U

U-Clip	98 (B90-0830)
Ultra Cone Wrench	74 (B40-0220)
Unit-Type Sliding Form	119 (G-0010)

W

Wall Prop	69 (B30-0410)
Wall-Tie	10 (A30-0010)
Wall-Tie Insert	8 (A20-0010)
Wall-Tie Insert : Bolt-In	8 (A20-0020)
Wall-Tie Insert : Cast-In	9 (A20-0030)
Water-Stop Rubber Plate	75 (B40-0320)
Winding Sleeve	87 (B90-0310)

Number • Others

3-Shaped Rib	42 (B10-0330)
φ42.7-φ48.6 Compatible Clamp	4 (A10-0020)
φ48.6 Clamp	4 (A10-0010)



Okabe Co., Ltd.

2-8-2 Oshiage Sumida-Ku Tokyo Japan 131-8505

Telephone: +81-3-3624-5306 / Facsimile: +81-3-3624-5307

<http://www.okabe.co.jp/english>