



يوني ستيل
UNISTEEL
Formwork & Scaffolding

SOLDIER / WALER FORMWORK SYSTEM

WE ARE FORMING YOUR IDEAS

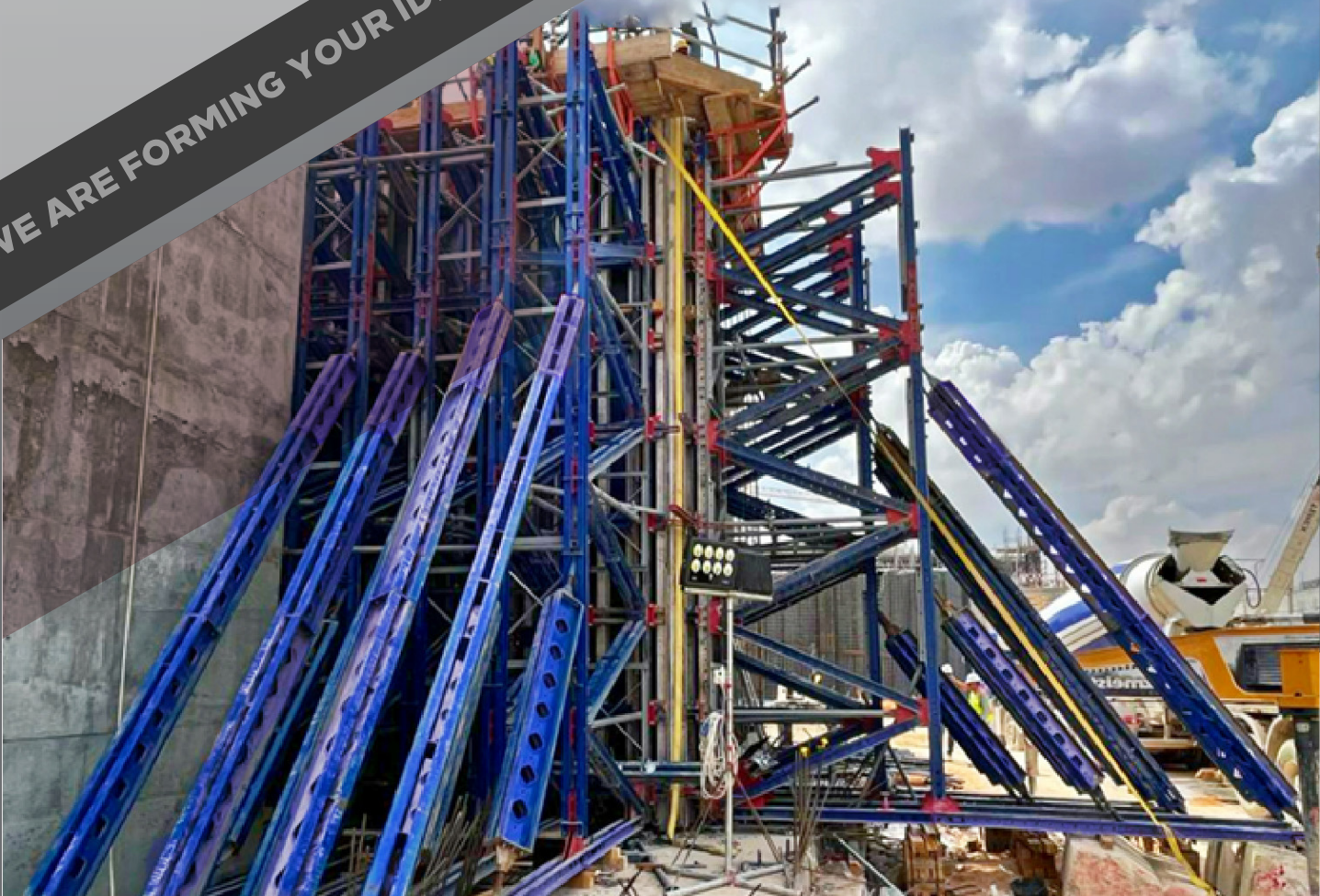


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SOLDIER / WALER FORMWORK SYSTEM

Unisteel Soldier / Waler Formwork system is one of the most flexible systems. In addition, it is a multipurpose system, which can be used in different applications.

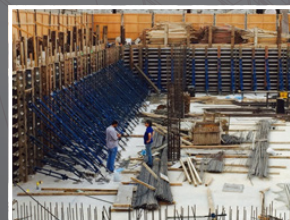
Soldier / Waler Formwork wall system formwork elements are easily and quickly assembled, Moreover, elements dismantling are done as easily as system erection.

The main system advantage is that it provides both high adaptation and easy re-assembling when structure ground plans are changed frequently.

In addition, this system proved to be one of the most economical alternatives compared with steel frame formwork panel system, where it comes to both complicated designs and numerous non-typical applications with the same wall heights.

APPLICATIONS:

- Building Walls | Double & Single-Sided Walls
- Retaining Walls
- Columns In different sizes
- Piers and Abutments
- Elevator Shafts
- Silos and Tanks
- Tunnels and Underground Structures
- Foundations
- Dams and Reservoirs

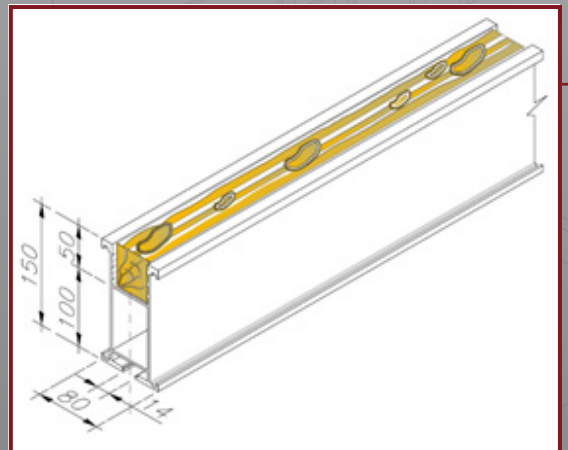


Twin Web Aluminum Beam

Extruded from 6082 T6 Aluminum Alloy Twin Web, extruded tolerance to BSEN 755-9:2001. Using aluminum is a great advantage over timber. Aluminum is lighter and stronger and therefore allows larger span of formwork which reduces the labor cost of erecting & dismantling.

PROPERTIES:

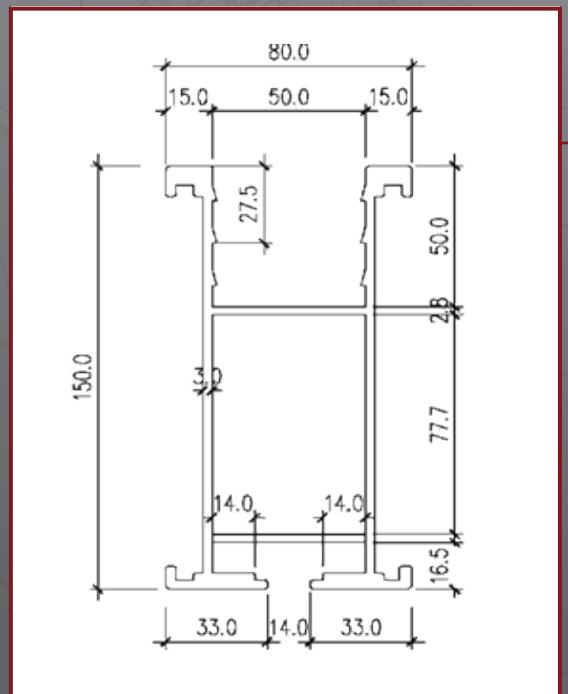
Moment of Resistance	9.4	kNm.
Weight	4.8	kg/m.
Area	1,628.0	mm ² .
Area x Centre of Gravity (y)	119,118.5	mm.
Area x Centre of Gravity (x)	64,313.0	mm.
Moment of Inertia, (I _y)	2,535,803,0	mm ⁴ .
Moment of Inertia, (I _x)	4,574,155.0	mm ⁴ .
Section of Modulus, S _y	64,197.5	mm ³ .
Section of Modulus, S _x	59,528.8	mm.



TW-150 Aluminum Beam weight without timber insertion

See available standard length

LENGTH (m.)	CODE NO. :	Weight (kg.)
1.20	120 - 019	5.71
1.50	120 - 024	7.14
1.80	120 - 017	8.57
2.00	120 - 015	9.52
2.40	120 - 014	11.42
3.00	120 - 012	14.28
3.60	120 - 009	17.14
4.00	120 - 008	19.04
4.20	120 - 007	19.99
4.80	120 - 005	22.85
5.40	120 - 004	25.70
6.00	120 - 003	28.56



Note: Any non-standard length available upon request

Single Web Aluminum Beam

The Secondary Beams are the Single Web SW-150 and the stronger Twin Web TW-150. Both SW-150 & TW-150 Beams can insert timber of 25 X 25mm. for suitable nailing of plywood.

Material: 6082 T6

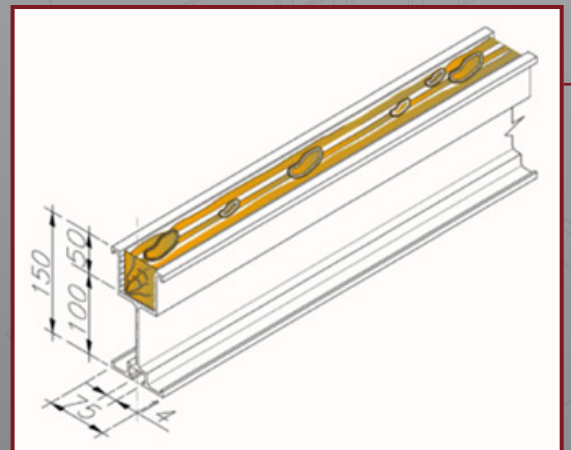
Equivalent to: Minimum Yield = 260 N/mm.2

Minimum Ultimate Tensile Strength = 310 N/mm.2

Elongation = 8 %

PROPERTIES:

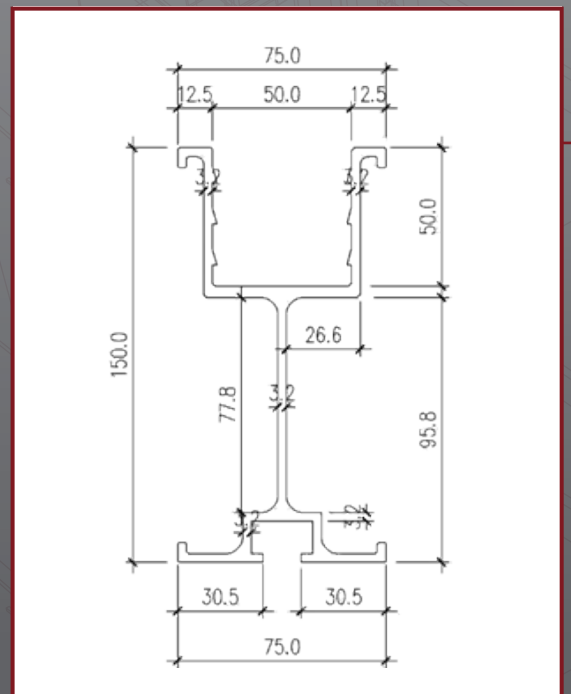
Moment of Resistance	6.6	kNm.
Weight	3.7	kg/m.
Area	1,352.0	mm ² .
Area x Centre of Gravity (y)	96,892.2	mm.
Area x Centre of Gravity (x)	50,710.1	mm.
Moment of Inertia, (I _y)	724,186.5	mm ⁴ .
Moment of Inertia, (I _x)	3,559,565.0	mm ⁴ .
Section of Modulus, S _y	19,312.6	mm ³ .
Section of Modulus, S _x	45,434.5	mm ³ .



SW-150 Aluminum Beam weight without timber insertion

See available standard length

LENGTH (m.)	CODE NO. :	Weight (kg.)
1.20	120 - 046	4.38
1.50	120 - 059	5.48
1.80	120 - 065	6.57
2.00	120 - 043	7.30
2.40	120 - 068	8.76
3.00	120 - 040	10.95
3.60	120 - 038	13.14
4.00	120 - 036	14.60
4.20	120 - 060	15.33
4.80	120 - 035	17.52
5.40	120 - 034	19.71
6.00	120 - 033	21.90



Note: Any non-standard length available upon request

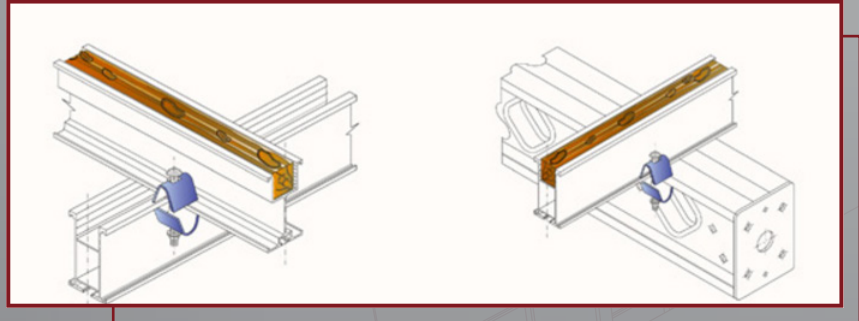
Aluminum Beam connections

Universal Clamp:

Used to secure or to connect two Aluminum Beams or an Aluminum to a variety of other Unisteel components like Column Arm ('Steel Waler') & Unisteel Soldier.

Weight: 0.47 kg.

Code No.: 120 – 061

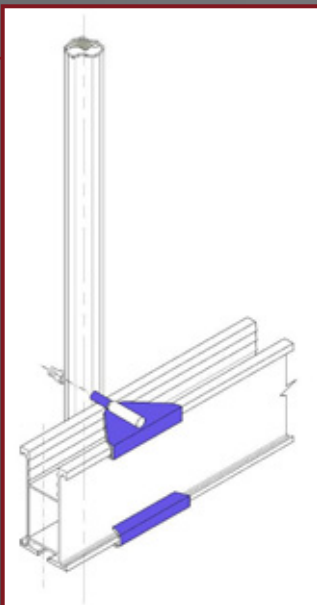
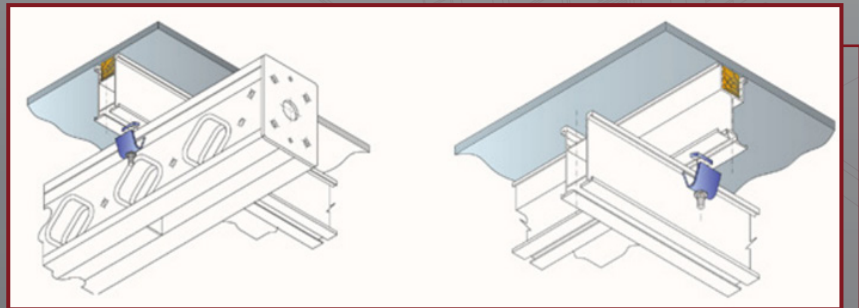


Universal Anchor Clamp:

A longer version of the T-Bolt combined with an Universal Clamp Arm & captive M12 nut. Using two Beams the TW-150 or SW-150 have been developed to utilized the slot in the bottom of the Beam against rolling when fixed.

Weight: 0.32 kg.

Code No. 120-063



Post Clamp Assembly:

An adaptable component easily fixed to all sizes of Aluminum Beam any place along their length without the need of drill holes.

This component also provides a post to which a Guardrail of steel scaffold tube can be fixed with standard scaffold couplers. It fits either the SW-150 or TW-150 Aluminum Beam. And can be fixed with Toe Board using Toe Board Clamp.

Weight: 6.55 kg.

Code No. 110-126

Timber Form H20 Beam

Flange: 40 X 80mm.

Web: Multi Ply Structure,
4+1+4 = 9 Plies, 27mm. thickness

End: Plastic End Protection.

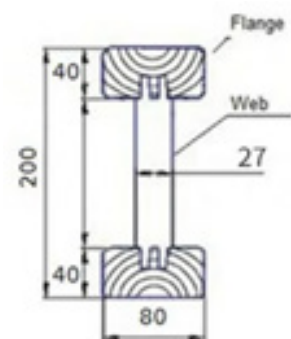
The multi-ply web gives the best support; the physical performance and service life is highly increased.

H20 Beam Tested Quality for Your Site:

- Ease of handling to it's very low weight of 5.0kgs per meter
- High quality flanges, achieved by 100% machine stress grading
- High load capacity despite having an overall height of 200mm.

MECHANICAL SPECIFICATION:

Bending Moment	- Max. 5.0kN/m.
Cutting Action	- Max. 11 .0kN.
Bending	- Max. 1/500 Max.
Live Load (Bending Stiffness)	- Max. 500kN/m2



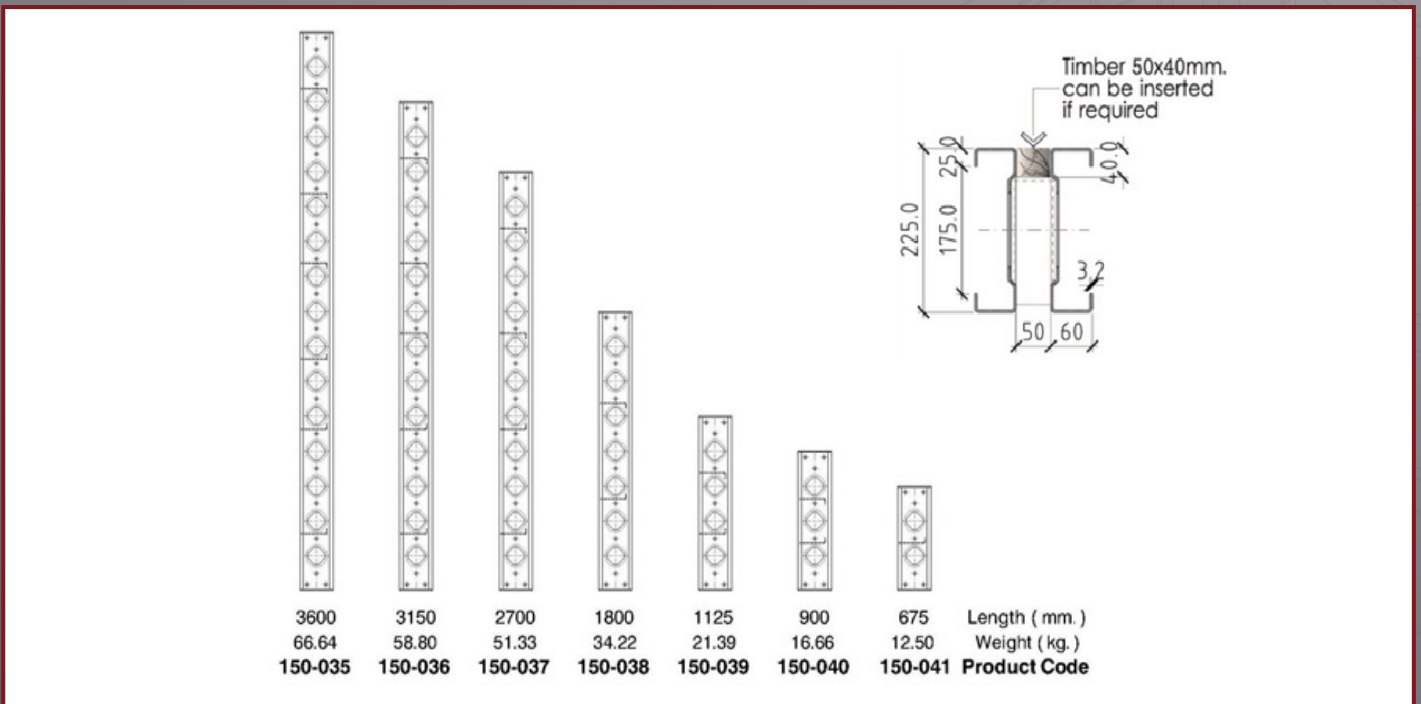
TIMBER H20 BEAM

LENGTH (m.)	CODE NO. :	Weight (kg.)
1.90	120 - 087	9.50
2.90	120 - 088	14.50
3.90	120 - 089	19.50
5.90	120 - 090	29.50

Steel Soldiers & Accessories (01)

UNISTEEL SOLDIER SYSTEM

Unisteel Soldier System can provide the most flexible and highly adaptable types of wall formwork. Having 7 different standard sizes of Steel Soldier & accessories enables the contractor to construct walls that will develop long established working relationships. Accounting to cost effective solutions, TW-150 and SW-150 Aluminum Form Beams wallings in conjunction with Unisteel Soldier intensifies the high strength that allows maximization of spacing. Using timber as wallings generally results to closer spacing between Unisteel Soldiers due to reduced strength compared to Aluminum Beams. The Unisteel Soldier Shoring System has a maximum capacity of 95 kN. each shore (depends on application and length) together with essential accessories can also be applicable as inclined, horizontal, and vertical shoring. Highly Adaptable and Economical





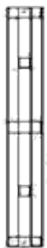




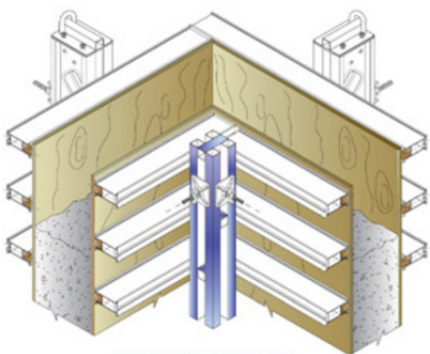
Specification / Properties:

Finished	Painted
Thickness	3.2 mm
Area	24.39 cm. ²
Moment of inertia (I _{xx})	1,453 cm. ⁴
Bending Moment	36 kN.m
Shear Maximum	95 kN
Weight (kg)	18.52 per m

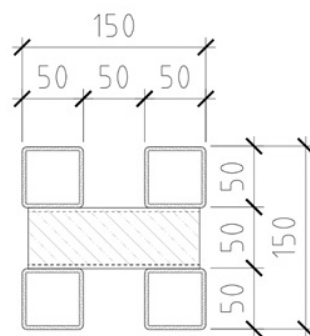
Steel Soldiers & Accessories (02)

The Corner Steel Soldier simplifies the construction. It allows form ties passage in both sides at 90° corner. These can reduce loadings on the external walling and also eliminates using 2nos. of Unisteel Soldiers. Maximum allowable tie load between 2 spacers in any one direction is 50 kN. Corner Steel Soldier is designed to be used in conjunction of Unisteel Soldier.

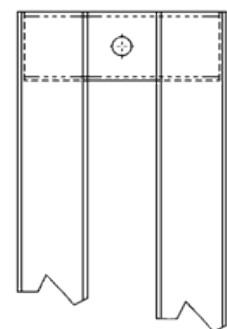
							
3600	3150	2700	1800	1125	900	675	Length (mm.)
76.08	66.96	57.19	38.29	24.29	19.40	15.36	Weight (kg.)
150-045	150-046	150-047	150-048	150-049	150-050	150-052	Product Code



**CORNER SOLDIER
INTERNAL**



PLAN CORNER SOLDIER



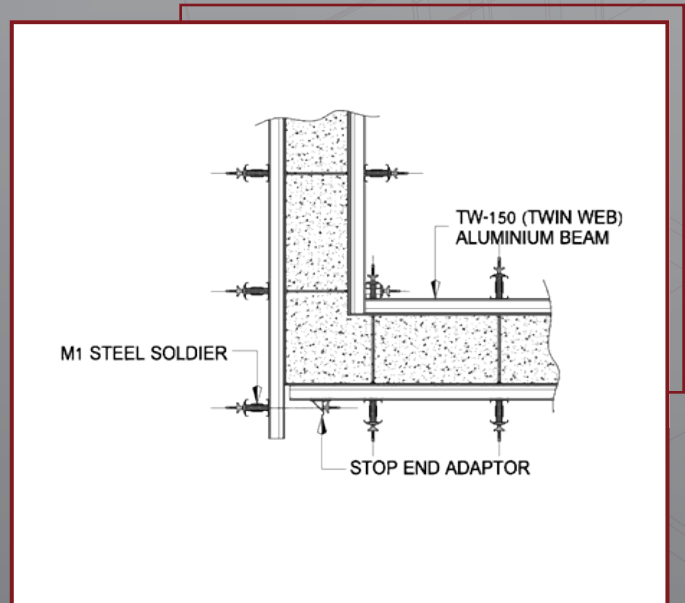
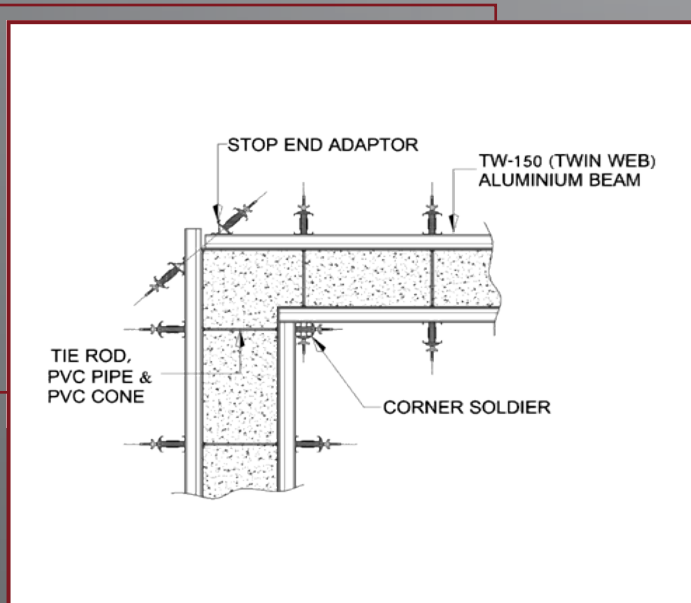
END DETAILS

Steel Soldiers & Accessories (03)

Unisteel Soldier can be used as a primary support beam for wall shuttering applications. Used with either TW-150 or SW-150 Aluminum Beams it provides economical and adaptable forming system.

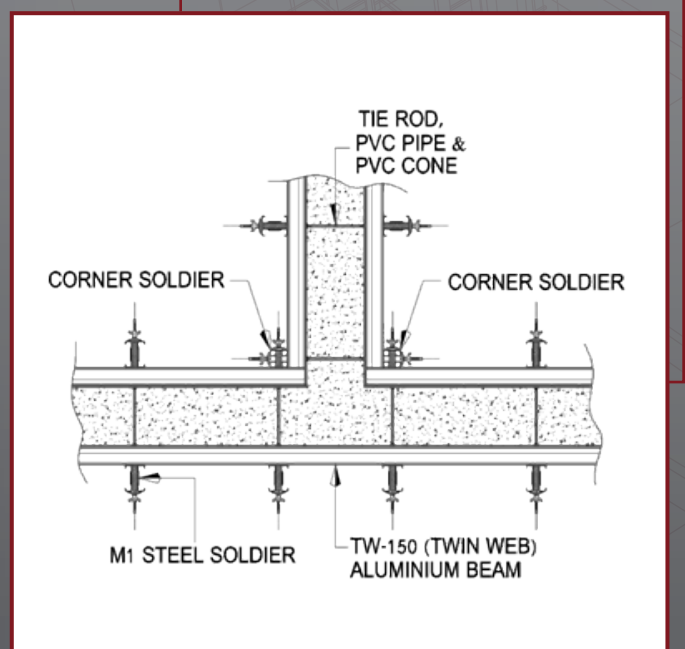
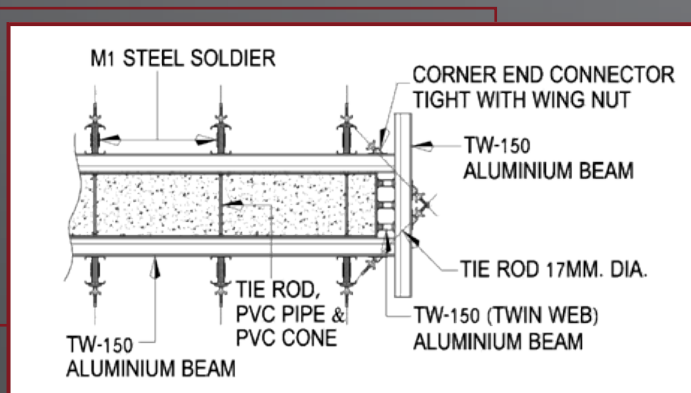
CORNER DETAILS:

Using Corner Steel Soldier & Stop End Adaptor required with TW-150 or SW-150



STOP END DETAIL:

Corner End Connector can be used with either TW-150 or SW-150 Aluminum



Steel Soldiers & Accessories (04)

Accessories:

- **M 16 X 35mm. Bolts & Nuts**

Joint to Joint Unisteel Soldier to connect Steel Soldiers using 4 nos. of M16 X 35mm. Bolts & nuts.

Weight : 0.12 kg./pc.

Code No. 150-090

- **Universal Anchor Clamp**

Designed to fix TW-150 or SW-150 Aluminum Beams to Unisteel Soldiers.

Weight : 0.32 kg.

Code No. 120-063

- **Corner Soldier Connector**

Joint to Joint Corner Steel Soldiers to connect using 2 nos. of M1/2" X 4" Bolts & Nuts.

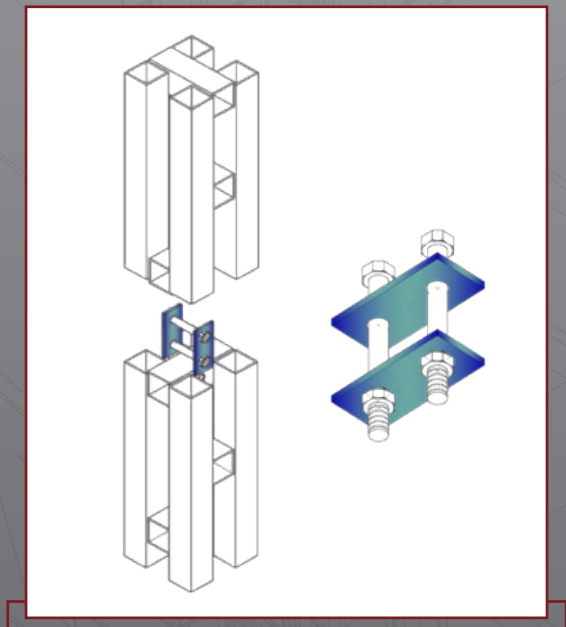
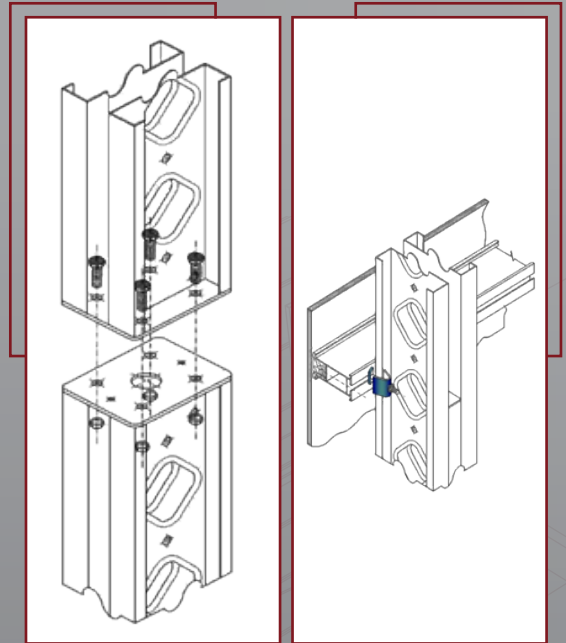
Weight : 0.28 kg.

Code No. 150-109

- **M1/2" X 4" Bolts & Nuts**

Weight : 0.09 kg./pc.

Code No. 150-108



Spacing of Waling depends on different factors including the Plywood type, Steel Soldier center, concrete pressures and the type of structure. For any assistance, please contact our local technical offices.

Steel Soldiers & Accessories (05)

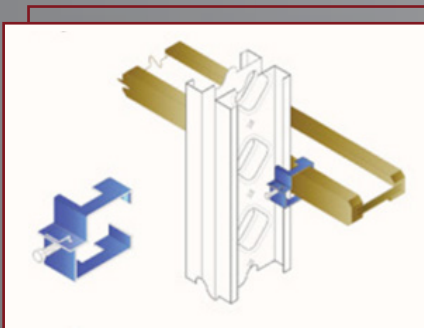
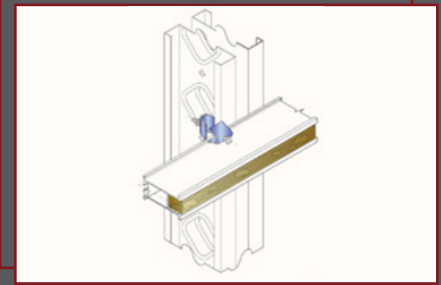
- **Universal Clamp**

Designed to fix TW-150 or SW-150 Aluminum Beams to Unisteel Soldiers.

Universal Clamp

Weight : 0.47 kg.

Code No. 120-061



Universal Clamp

Weight : 2.9 kg.

Code No. 150-158

- **Universal Clamp**

Designed for self-gripping H20 beam to a Steel soldier.

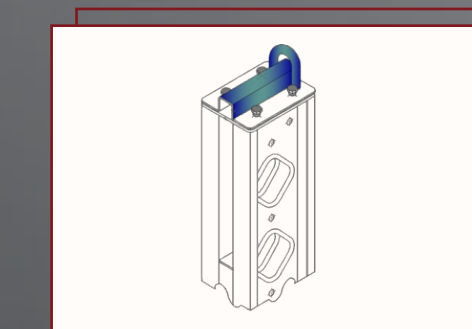
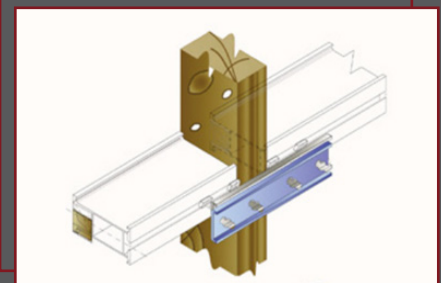
- **Splice Channel**

Timber Infills can be made up by a splice channel. It can either overlap and connect to both aluminum beams or to be fixed on one aluminum beam only and support the timber on the cantilever. 4 nos. of T Bolt required

Splice Channel

Weight : 1.46 kg.

Code No. 150-122



Lifting Bracket

Weight : 3.27 kg.

Code No. 150-056

- **Lifting Bracket**

Placed & bolted to the top of Unisteel Solider to provide crane for lifting, two nos. should be used per Form or Shutter

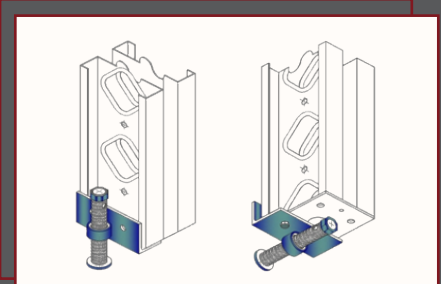
- **Form Jack**

Mainly used for leveling the shutter of form, it can be used also horizontally as a plumbing mechanism. Two nos. required per Form Side.

Form Jack

Weight : 3.27 kg.

Code No. 150-031



Steel Soldiers & Accessories (06)

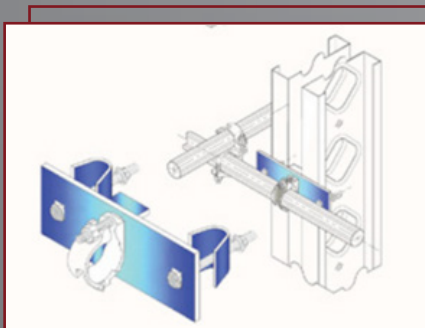
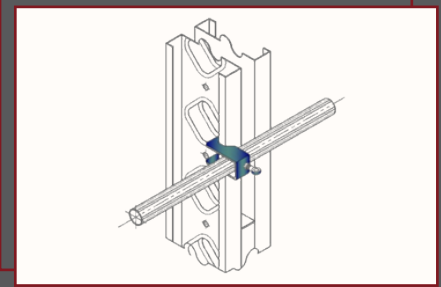
- **Waling Clamp or Patent Clamp**

An optional clamp used to attach a Scaffold Tube to a Unisteel Soldier.

Waling Clamp or Patent Clamp

Weight : 0.68 kg.

Code No. 150-058



Soldier Bracing Coupler

Weight : 2.93 kg.

Code No. 150-156

- **Soldier Bracing Coupler**

Fixed to the Soldier, with a coupler attachment to secure Scaffold Tube, required for butting & bracing, is to be fixed for applications such as unattached or freestanding falsework.

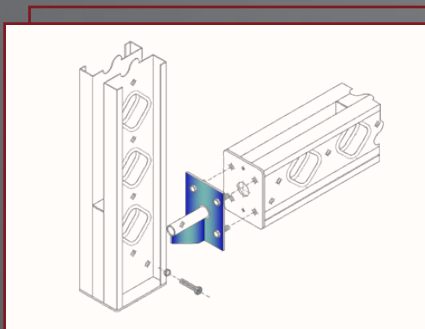
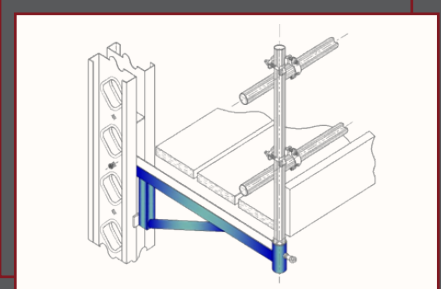
- **Access Bracket**

Fixed at any of the holes between the square holes. It is designed to support 3 nos. of planks with the toe board installed to the guardpost. Planks can be nailed with timber insert on Access Bracket. Timber Insert not supplied

Access Bracket

Weight : 5.78 kg.

Code No. 150-029



Floor Angle Connector

Weight : 3.62 kg.

Code No. 150-023

- **Floor Angle Connector**

This connector has two purposes, it can fixed on vertical Steel Soldier & horizontal, and with conjunction of Uplift bracket. Solder with 4nos. M15 X 35 bolt & nut

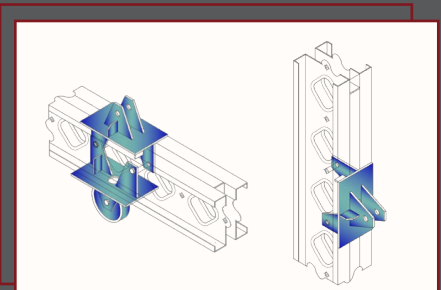
- **Shoring Wheel Connector**

This connector has two purpose, it can be a shoring adaptor on Heavy Jacks and can also be made as a mobile shutter fix with the Unisteel Soldier. A wheel of 150mm. diameter connector fix using two numbers M16 X 90 bolt & nut

Shoring Wheel Connector

Weight : 6.31 kg.

Code No. 150-021



Steel Soldiers & Accessories (07)

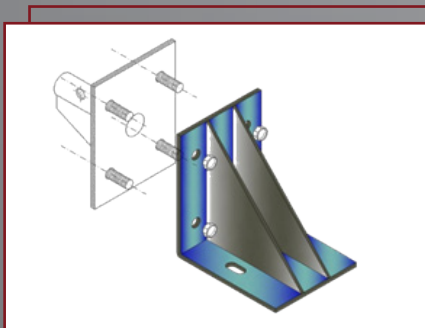
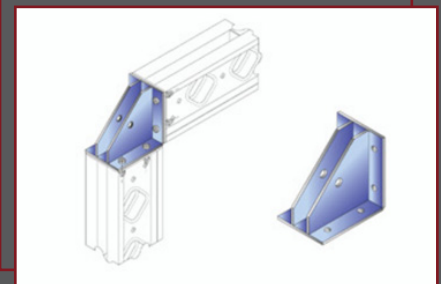
- **Right Angle Adaptor**

It is designed for fixing Steel Soldiers end to end plate at right angle.

Right Angle Adaptor

Weight : 9.03 kg.

Code No. 150-125



Uplift Bracket

Weight : 6.25 kg.

Code No. 150-123

- **Uplift Bracket**

This Bracket is designed with the conjunction of Floor Angle Connector to support from moving on high pressure concrete.

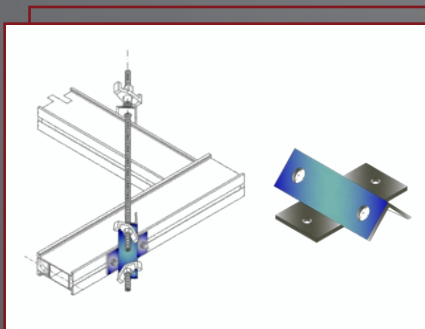
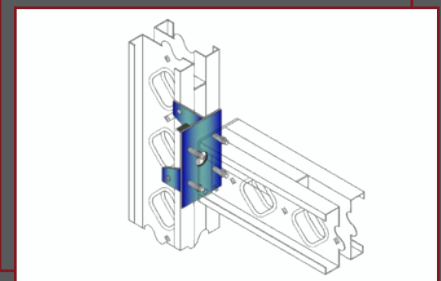
- **Shear Adaptor**

Fixed with Steel Soldier using 2nos. M16 X 90mm. bolts & nuts. In vertical and horizontal position with welded bolt & nut M16 X 35mm.

Shear Adaptor

Weight : 5.49 kg.

Code No. 150-124



Corner End Connector

Weight : 1.50 kg.

Code No. 150-120

- **Corner End Connector**

Fixed to either "TW & SW" Aluminum Beams using T-Bolt, Designed for Joining Forms at Corner, 2 Nos. of T-bolts & nuts

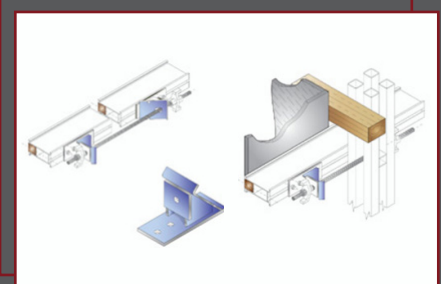
- **Stop End Adaptor**

Fixed to TW-150 or SW-150 Aluminum Beam with 2 nos. of T-bolt & nut. Joining Forms end to end, Joining Forms at corner, Stop End Outline with Corner Soldier It can secure forms also on existing structure

Stop End Adaptor

Weight : 3.42 kg.

Code No. 150-100



Steel Soldiers & Accessories (08)

For Longer, heavier support condition Unisteel Soldier can be used in conjunction with Shoring Fixed Adaptor & Threaded Shoring Adaptor to a maximum 8mtr. length.

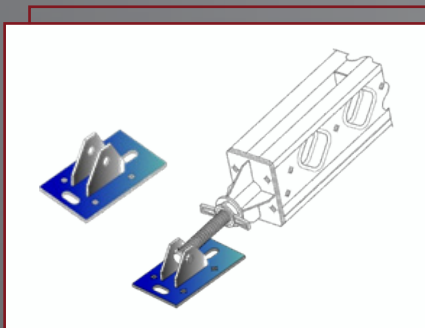
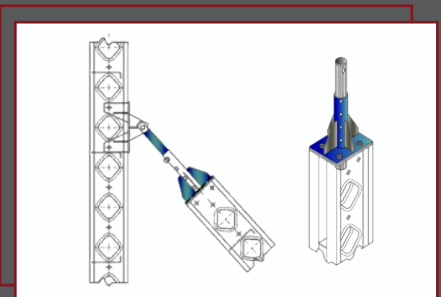
- **Showing Fixed Adaptor**

This Adaptor provides adjustment in fixed. Total height varies from 335-560mm. in 75mm. Increments. In conjunction the Shoring Threaded Adaptor it is usable on heavy shoring. Required M24 x 90 Grade 8.8 Bolt & Nut 1 No. & Load Pin with Pin Lock

Showing Fixed Adaptor

Weight : 7.06 kg.

Code No. 150-119



Shoring Base Plate

Weight : 6.14 kg.

Code No. 150-121

- **Shoring Base Plate**

Is designed for use in conjunction with either the Shoring Fixed Adaptor or Shoring Threaded Adaptor and it is suitable for inclined shoring. Required M24 x 90 Grade 8.8 Bolt & Nut 1No.

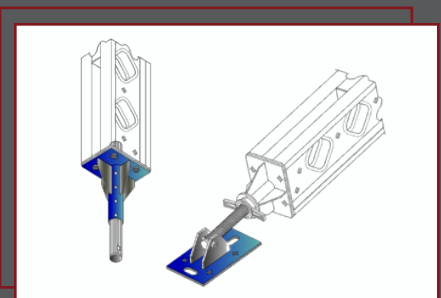
- **Shoring Threaded Adaptor**

This adaptor provides a maximum adjustment of up to 360mm. In conjunction with the Shoring Base Plate. Required M24 x 90 Grade 8.8 Bolt & Nut 1 No. & Load Pin with Pin Lock

Shoring Threaded Adaptor

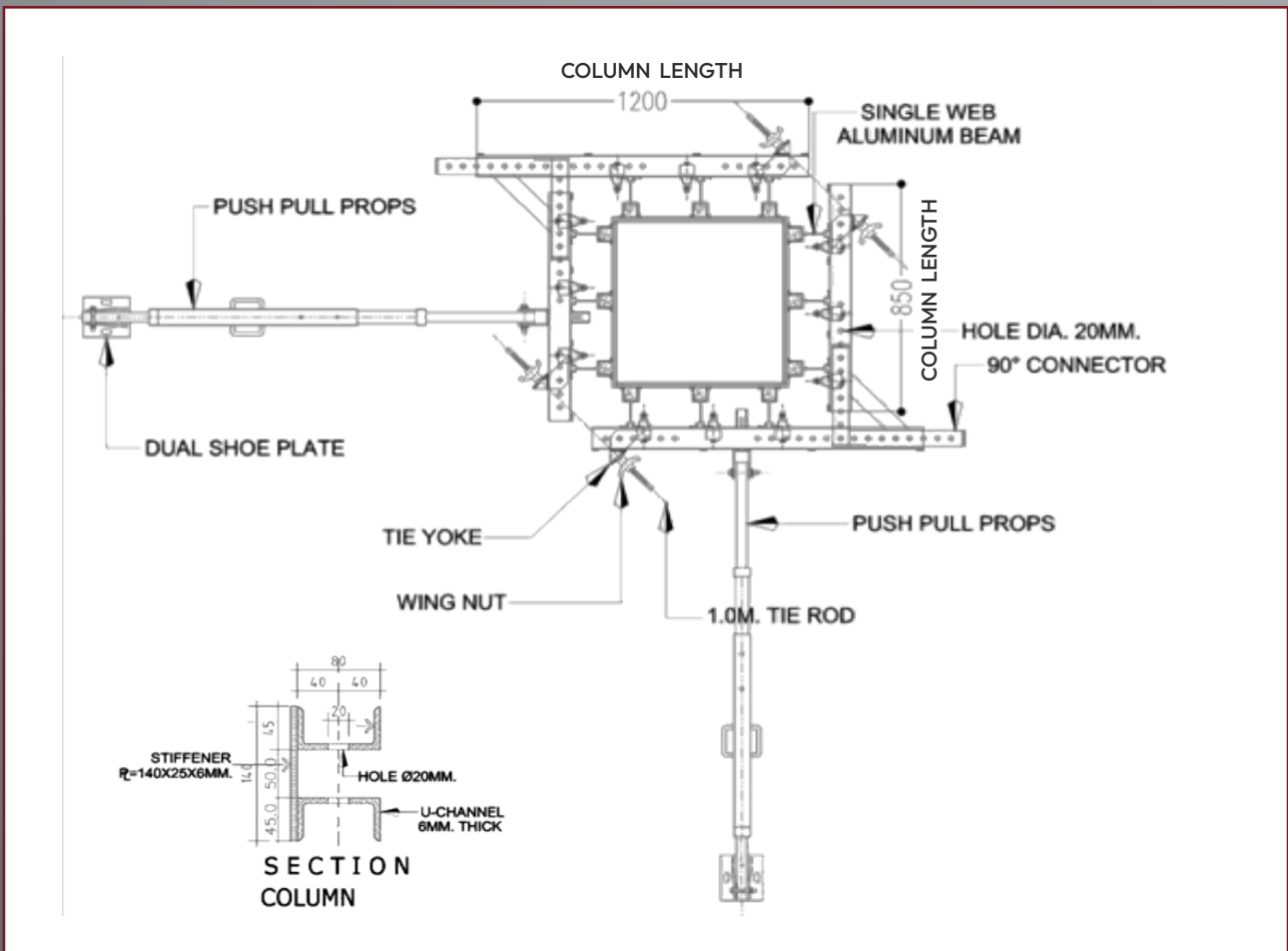
Weight : 8.24 kg.

Code No. 150-120

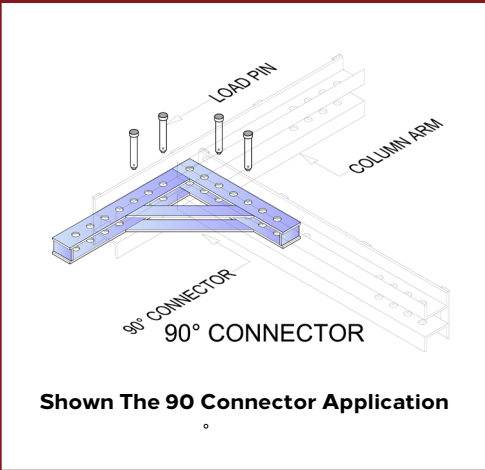
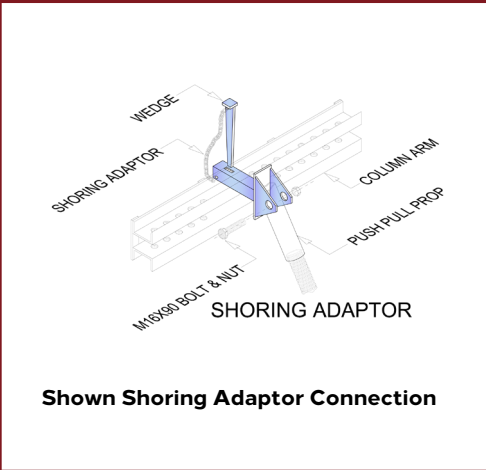
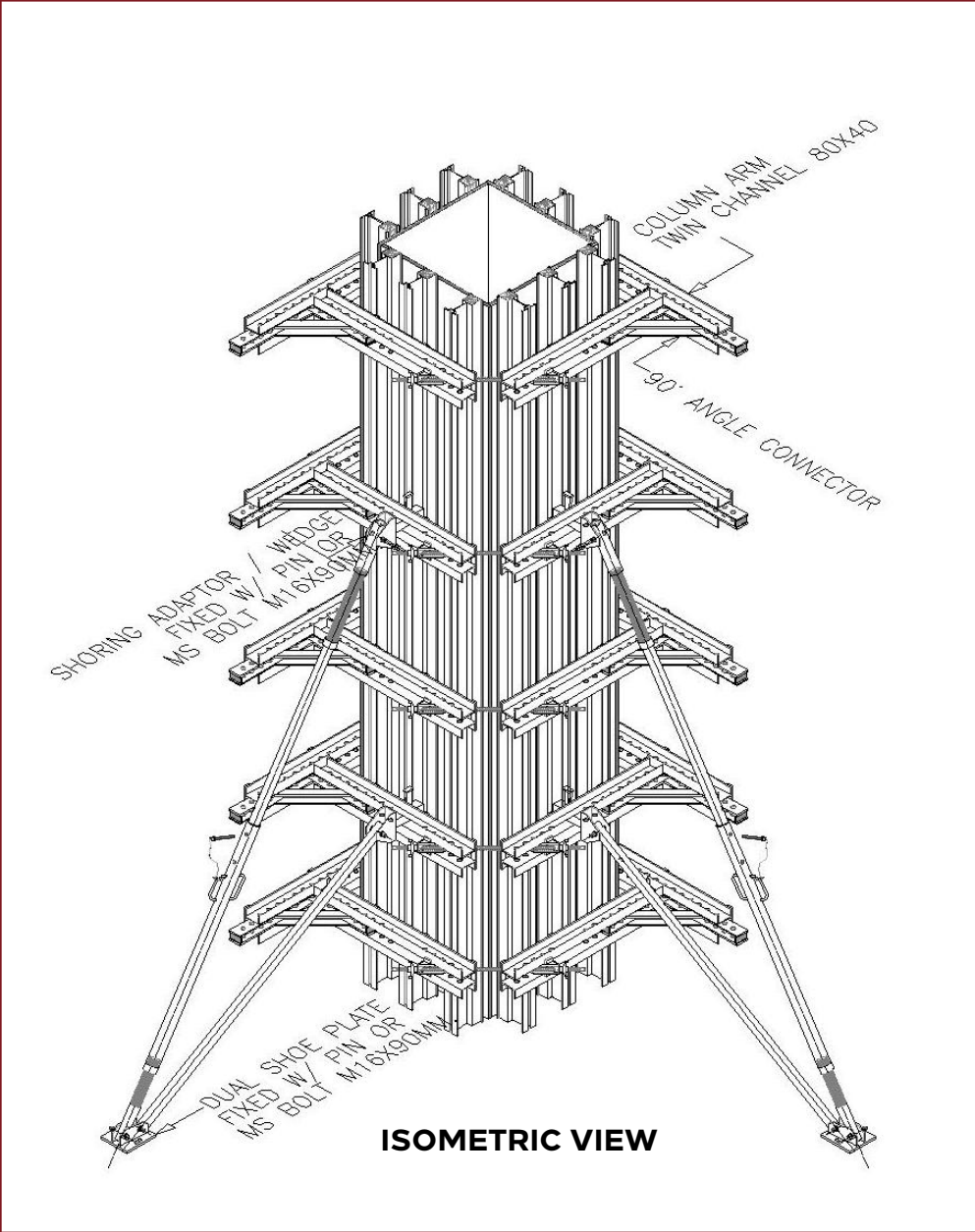


Steel Waler & Accessories (01)

Unisteel manufactures Adjustable Column to suit site requirements, Twin U-Channel profile easy and fast erect and strong in performance. In conjunction of our Single Web (SW-150-75) is stronger than the timber and more lighter than steel.



Steel Waler & Accessories (02)



Steel Waler & Accessories (03)

Accessories:

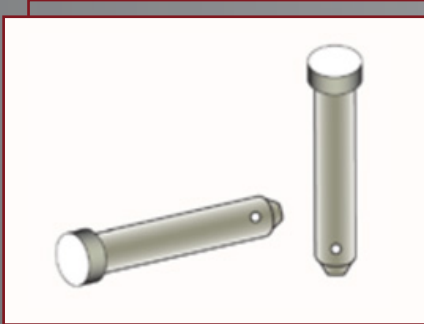
- **90° Connector**

Used for joining both Column Arms in different location of Column Arm hole adjustment. Required Load Pin with Clips.

90° Connector

Weight : 3.82 kg.

Code No. 150-059



Load Pin

Weight : 0.18 kg.

Code No. 150-089

- **Load Pin**

Used in conjunction with Column Arm and Tie Yoke. To secure or join, use Clips to avoid disconnection when lifting by crane.

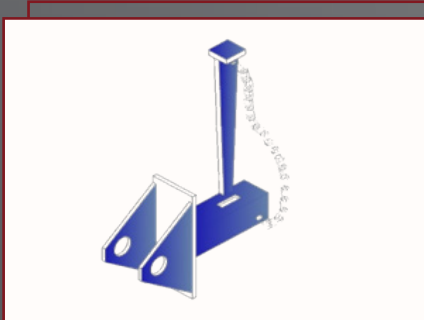
- **Comer Tie Yoke**

This enables to closed between Column Arms, using Tie Rod & Wing Nuts. Required Load Pin with Clips.

Comer Tie Yoke

Weight : 3.82 kg.

Code No. 150-084



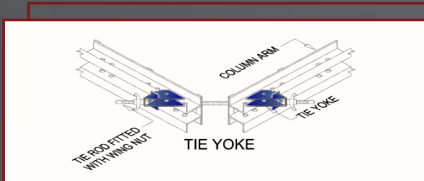
Shoring Adaptor

Weight : 2.50 kg.

Code No. 150-032

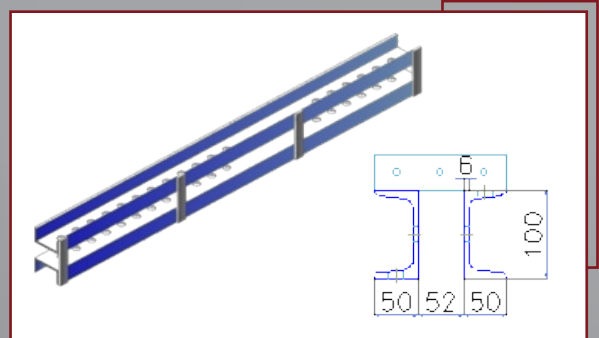
- **Shoring Adaptor**

Used to give positive connection of Push Pull Props. It provides a strong connection to Column Arm, just simply insert square tube between the U-Channel (Column Arm) and tack the wedge into hammer for tight. Chain Welded into shoring adaptor to prevent being misplaced. Required M16 x 90 Grade 8.8 Bolt & Nut for Push Pull Props connection.



Steel Waler & Accessories (04)

Finished	Painted
Area	27.0 cm. ²
Moment of inertia (Ixx)	412.0 cm. ⁴
Shear force	100 kN
Bending moment	13.2 kN.m
Weight (kg)	21.2 Kg/m



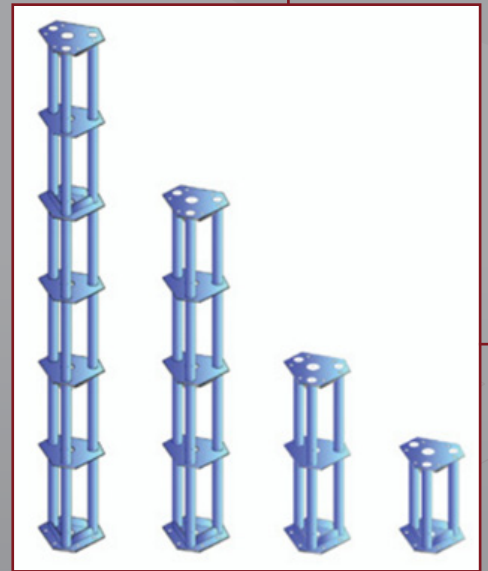
	Code	Product Description	Weight (Kg)
1	500-001	Steel Waler U100 ,L=0.50 m	11.80
2	500-002	Steel Waler U100 ,L=0.75 m	16.10
3	500-003	Steel Waler U100 ,L=1.00 m	21.40
4	500-004	Steel Waler U100 ,L=1.25 m	26.40
5	500-005	Steel Waler U100 ,L=1.50 m	31.40
6	500-006	Steel Waler U100 ,L=1.75 m	36.60
7	500-007	Steel Waler U100 ,L=2.00 m	42.20
8	500-008	Steel Waler U100 ,L=2.25 m	47.60
9	500-009	Steel Waler U100 ,L=2.50 m	52.00
10	500-010	Steel Waler U100 ,L=2.75 m	58.90
11	500-011	Steel Waler U100 ,L=3.00 m	63.60
12	500-012	Steel Waler U100 ,L=3.25 m	70.80
13	500-013	Steel Waler U100 ,L=3.50 m	73.50
14	500-014	Steel Waler U100 ,L=3.75 m	78.00
15	500-015	Steel Waler U100 ,L=4.00 m	86.20
16	500-016	Steel Waler U100 ,L=4.50 m	96.70
17	500-017	Steel Waler U100 ,L=5.00 m	104.00
18	500-018	Steel Waler U100 ,L=5.50 m	114.70
19	500-019	Steel Waler U100 ,L=6.00 m	126.50

Triplex Shoring -Shoring & Tilting kit

- **Triplex Shoring 38**

Another system for bracing & aligning of wall and column with height exceeding of 6.0m. The system consist of modules with are different standard length 300cm., 200cm.,100cm. and 50cm.

The Spindle Right, Spindle Left Shoring (Base Plate Shoring Adaptor has to be ordered separately.)



Length	3000	2000	1000	500
Weight (kg)	27.31	18.80	10.28	6.20
Product Code	150-150	150-148	150-146	150-144

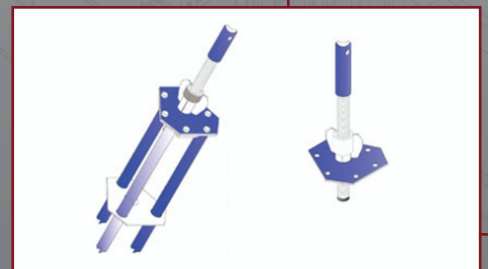
Note : Nonstandard length as per contractor demand

- **Triplex Right / Left Spindle 38**

Adjustable spindle 1 Top Unit Left & 1 Top Unit Right are required to assemble brace to get for a precise adjustment.

Maximum adjustment on both spindle 495mm.

Connect using bolts & nuts.



- **Triplex Right Spindle 38**

Weight : 5.41 kg.

Code No. 150-140

- **Triplex Left Spindle 38**

Weight : 5.41 kg.

Code No. 150-142



Push Pulls Props - Shoring & Tilting kit

- **Single Shoe Plate**

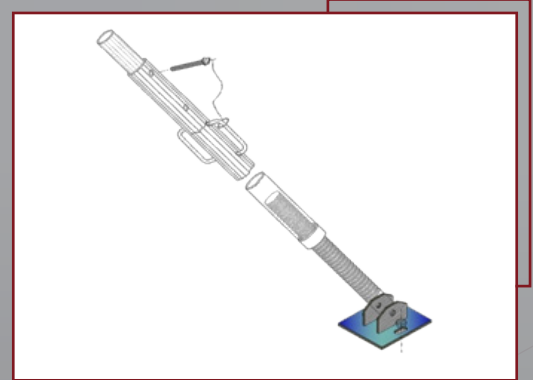
Designed for use on a single shoring in conjunction with either 2.0M. or 1,5M. Push Pull Props.

Weight : 1.98 kg.

Code No. 150-098

1 No M1/2" X4" Bolt & Nut

Grade 8.8 required



- **Dual Shoe Plate**

Dual Shoe Plate Designed for use on double shoring in conjunction with either 5.4V1. or 4.0M. Push Pull Props with combination of 2.0M.,1.50M. Push Pull Props or a Tube with hole.

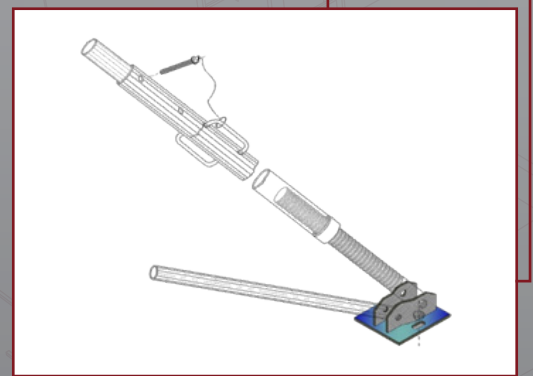
Weight : 2.35 kg.

Code No. 150-099

1 No M1/2" X4" Bolt & Nut

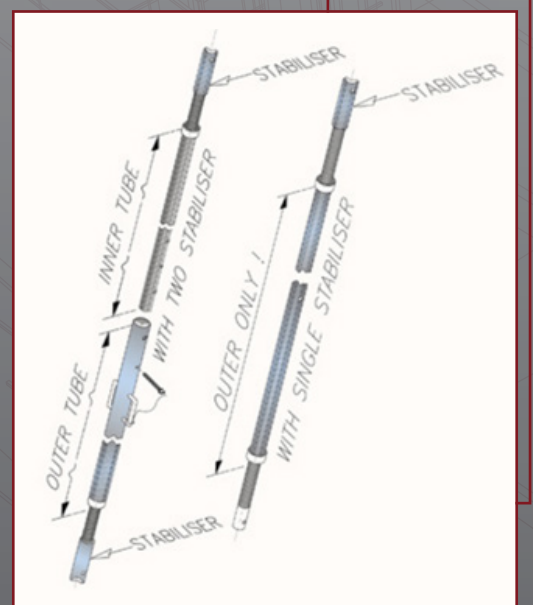
1 No M16X90mm. Bolt & Nut

Grade 8.8 required



- **Features**

- Uncomplicated or Easy To Use
- Faster & Easy to Adjust.
- Really Light to handle.



Push Pull Props

Item Code	Product Description	Tube size.	Range	Weight
1200-001	Push Pull PPS 131	1.5"x2.5mm	1.00 ~ 1.50m	12.40
200-002	Push Pull PPS132	2.0"x2.5mm	1.00 ~ 1.50m	13.70
200-003	Push Pull PPS161	1.5"x2.5mm	1.30 ~ 1.80m	13.30
200-004	Push Pull PPS162	2.0"x2.5mm,	1.30 ~ 1.80m	14.85
200-005	Push Pull PPS201	1.5"x2.5mm	1.64 ~ 2.34m	14.30
200-006	Push Pull PPS202	2.0"x2.5mm	1.64 ~ 2.34m	16.10
200-007	Push Pull PPS252	2.0"x2.5mm	2.14 ~ 2.84m	18.00
200-008	Push Pull PPS302	2.0"x2.5mm	2.65 ~ 3.35m	20.00
200-009	Push Pull PPS352	2.0"x2.5mm	3.14 ~ 3.84m	24.00
200-010	Push Pull PPH163	3.0"x3mm	1.30 ~ 2.0m	22.50
200-011	Push Pull PPH164	3.0"x4mm	1.10 ~ 2.0m	24.75
200-012	Push Pull PPH203	3.0"x3mm	1.64 ~ 2.34m	24.00
200-013	Push Pull PPH204	3.0"x4mm	1.64 ~ 2.34m	27.00
200-014	Push Pull PPH205	3.0"x3mm	2.00 ~ 2.70m	25.75
200-015	Push Pull PPH206	3.0"x4mm	2.00 ~ 2.70m	29.50
200-016	Push Pull PPH253	3.0"x3mm	2.14 ~ 2.84m	26.50
200-017	Push Pull PPH254	3.0"x4mm	2.14 ~ 2.84m	30.40
200-018	Push Pull PPH303	3.0"x3mm	2.65 ~ 3.35m	28.75
200-019	Push Pull PPH304	3.0"x4mm	2.65 ~ 3.35m	33.75
200-020	Push Pull PPH353	3.0"x3mm	3.14 ~ 3.84m	31.00
200-021	Push Pull PPH354	3.0"x4mm	3.14 ~ 3.84m	37.00
200-022	Push Pull PPH403	3.0"x3mm	3.65 ~ 4.35m	33.50
200-023	Push Pull PPH404	3.0"x4mm	3.65 ~ 4.35m	40.50
200-024	Push Pull PPH454	3.0"x4mm	4.15 ~ 4.85m	54.00
200-025	Push Pull PPH501	3.0"x3mm	4.65 ~ 5.35m	38.25
200-026	Push Pull PPH502	3.0"x4mm	4.65 ~ 5.35m	47.10
200-027	Push Pull PPH551	3.0"x3mm	5.15 ~ 5.85m	40.50
200-028	Push Pull PPH552	3.0"x4mm	5.15 ~ 5.85m	50.50
200-029	Push Pull PPH601	3.0"x3mm	5.65 ~ 6.55m	59.50
200-030	Push Pull PPH602	3.0"x4mm	5.65 ~ 6.55m	74.00
200-031	Push Pull PPH651	4.0"x3mm	6.05 ~ 6.95m	62.25
200-032	Push Pull PPH652	4.0"x4mm	6.05 ~ 6.95m	77.50

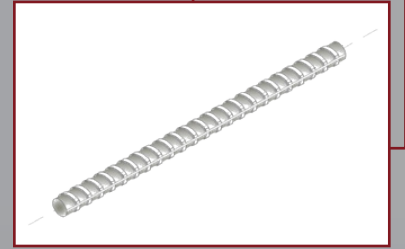
Note: Non Standard Length as per contractor demand.

Tying Kit

- Tie Rod**

Designed & manufactured for all types of concrete structures and it has continuous threaded rods at 17mm. Diameter.

Available on Stocks Silver Plated & Black



Black

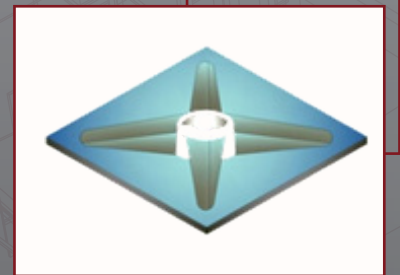
Length	Code No	Weight (kg)
6.0	150-082	8.82
3.0	150-071	4.41
2.5	150-083	3.70
2.4*	150-101	3.53
2.0	150-092	2.94
1.8	150-079	2.65
1.7*	150-072	2.50
1.5	150-073	2.20
1.3*	150-074	1.90
1.2	150-080	1.80
1.0	150-081	1.47
0.75	150-093	1.10

- Waler Plate or Tie Rod Washer**

Designed to prevent or avoid any rotation when using Unisteel Soldier

Weight : 0.58 kg.

Code No. 150-068



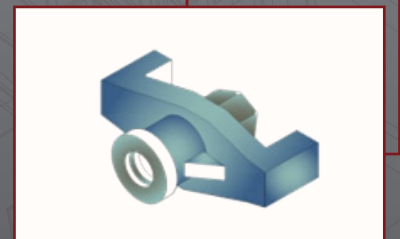
- Wing Nut**

Wing Nuts are used in conjunction with Waler Plate or Tie Rod Washer for securing or fixing Tie Rod in formwork applications.

Finished: Self Color or Anti Rust

Weight : 0.53 kg.

Code No. 150-067

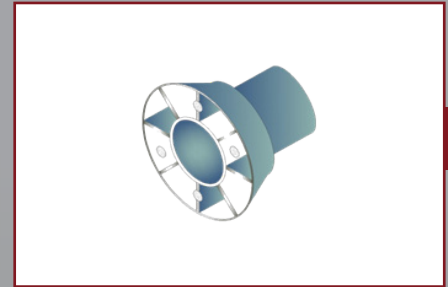


- **Plastic Cone**

Used with the plastic sleeve o' pvc pipe & suits in the 17mm. dia. tie rod For sale only (non-reusable)

Weight : 0.04 kg.

Code No. 150-096

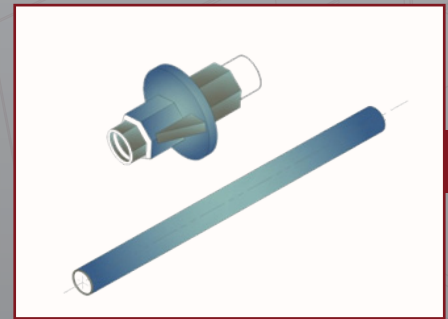


- **Water Stopper or Water Barrier**

This allows through tie systems to be used in water retaining to the structure. Non-reusable item, it will cast into the concrete wall between two tie rods. For sale only (non-reusable)

Weight : 0.53 kg.

Code No. 150-069

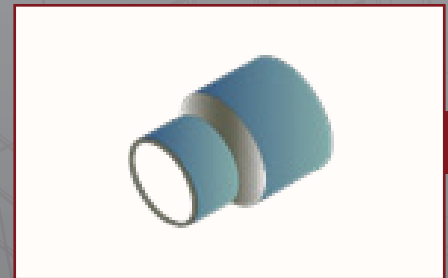


- **Sleeve Reducer**

Tight fitting plug fixed in between Water Stopper and the pvc pipe. For sale only (non-reusable)

Weight : 0.04 kg.

CODE NO. 150-022



- **Plastic Sleeve or PVC Pipe**

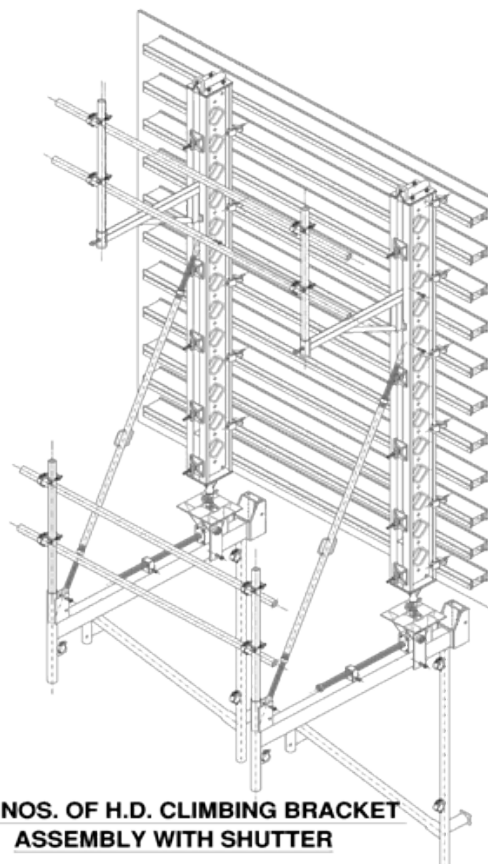
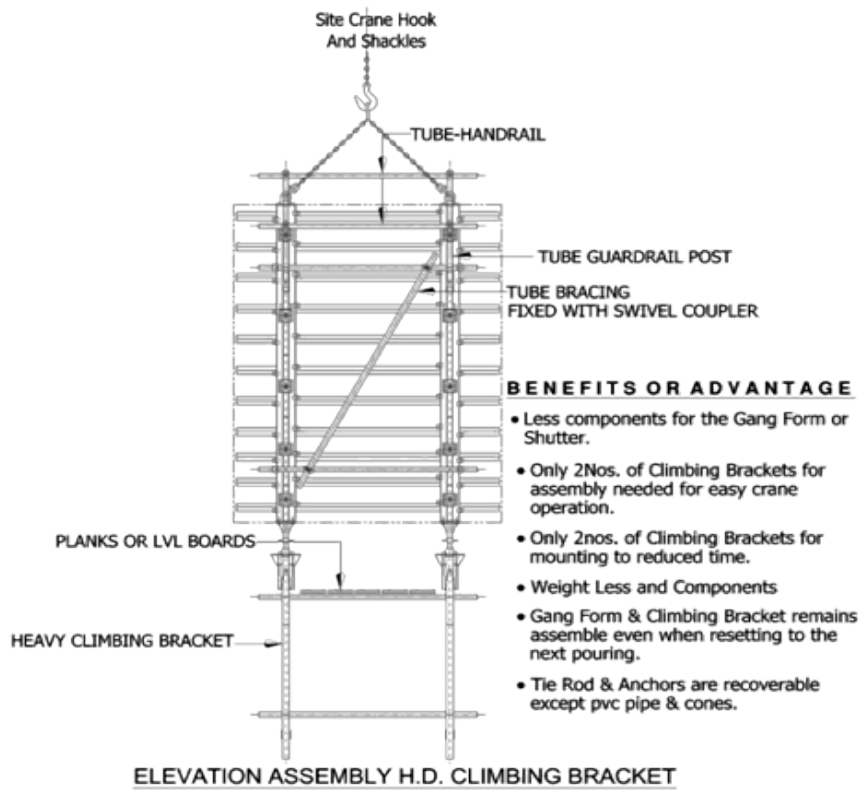
Keeping the distance form faces to allow tie rods to be removed for re-use.

Available in 3.0m. Length

For sale only (non-reusable)

Pipe Dia. (mm)	Code No. :	Weight (Kg)
17.0	150 - 095	0.45

Heavy Duty Climbing Bracket (01)



Heavy Duty Climbing Bracket (02)

SEQUENCE OF POURING

-Step 1

Site Crane Hook And Shackles

LIFT AFTER POURING

IN PLANT THE CLIMBING CONE FOR THE NEXT POURING

FIRST POURING

- Remove the Tube Shoring & Dual Shoe Plate after pouring then lift the Gang or Shutter by a Crane for the next pouring.

Site Crane Hook And Shackles

ADJUST HEAVY DUTY JACKS TO BE IN PLACED & LEVEL

PREPARATION FOR 2ND. LIFT

- The Gang or Shutter in must be in Placed by adjusting the pallette using adj. spanner.
- Lastly place push pull props into the Climbing Bracket and Level it ready for pouring.

Site Crane Hook And Shackles

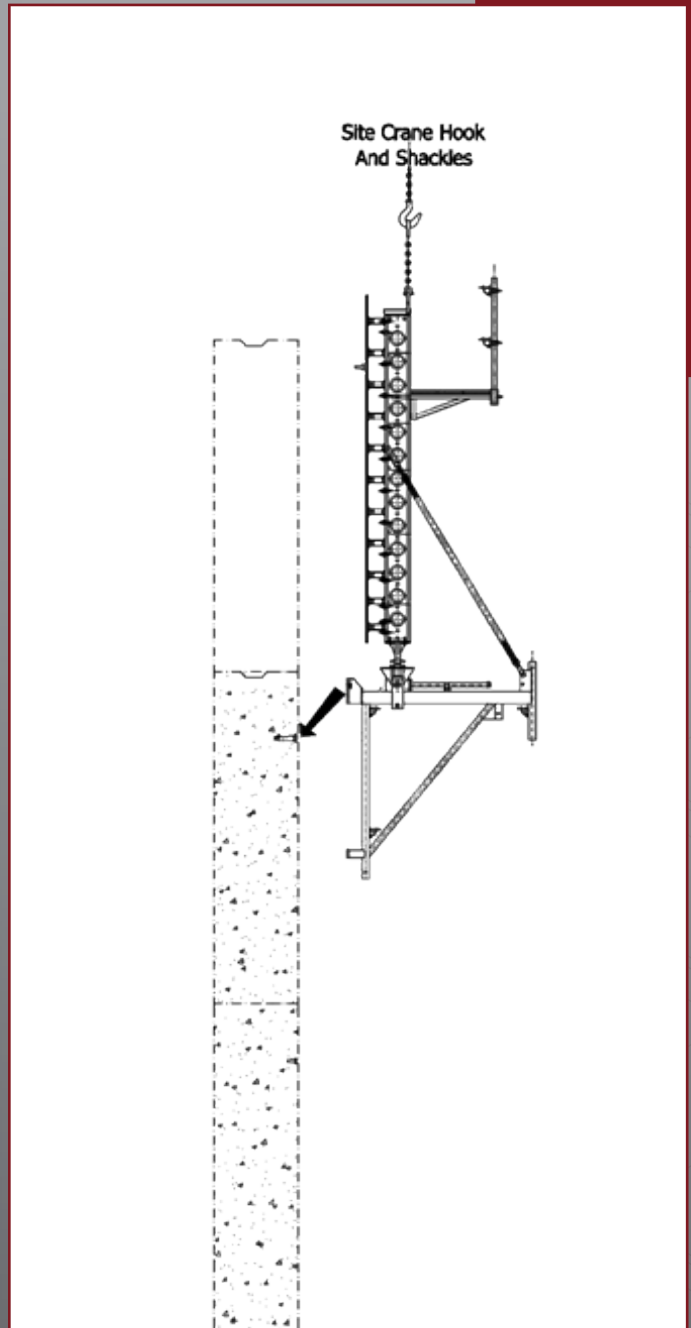
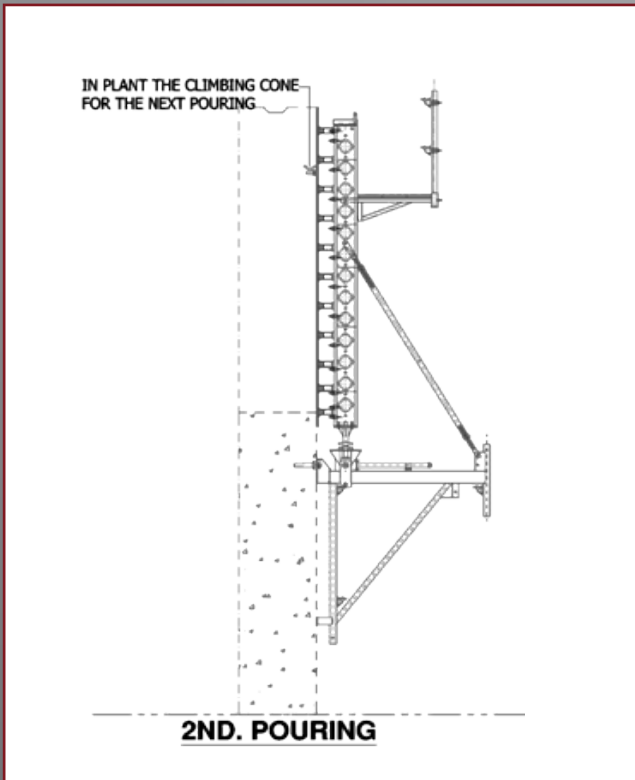
LOWER THE GANG OR SHUTTER IN PLACE

PREPARATION FOR 2ND. LIFT

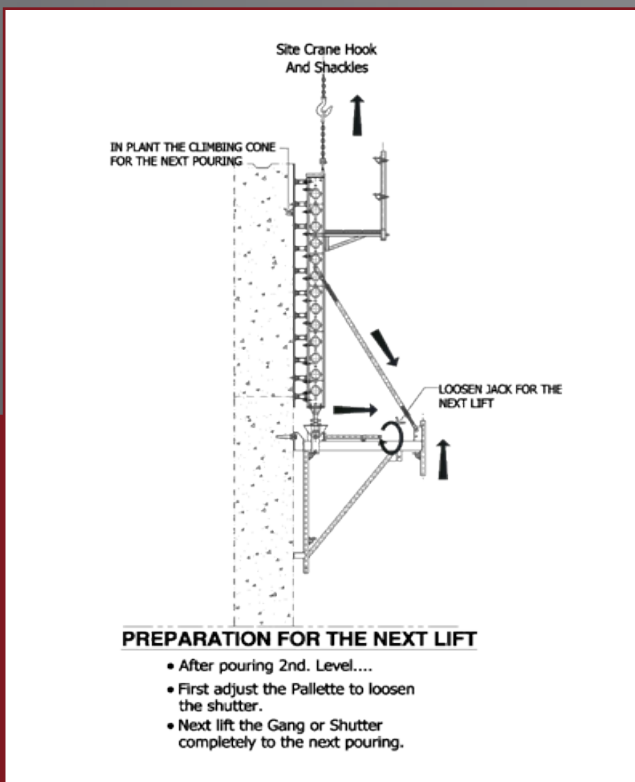
- Heavy Duty Climbing Bracket on Position First by fixing anchor bolt capacity of 280KN. with into climbing cone.
- And then lower the shutter into the Climbing Bracket.

Heavy Duty Climbing Bracket (03)

SEQUENCE OF POURING -Step 2



- From the Crane Complete Shutter Form in Placed.
- Repeat Sequence on the next lift...



Method of statement

All construction projects are different from each another, and have their own requirements based on site conditions. However, this covers the main points you should watch in order to avoid serious trouble when assembling and erecting form work.

- Use all panels or shutter in their correct positions. Paint numbers on them so that you can see at a glance which is which, and which way up they go.
- Check formwork is erected correctly & make sure that props shoring, walings bearers, clamps and tie rods are the right size and at the correct spacing.
- Correct washer plates or waler plates should be used with all ties, and set square on frame members. This is especially important with sloping formwork. Do not over tighten ties, for this might cause distortion, and could result in failure of the tie when it is fully loaded.
- Forms fastened to previously cast concrete must be tightly fixed to prevent grout loss. Cellular foam plastic strips can be used to make a seal. Or, for very high - quality visual concrete, you can first gun a one part, moisture curing, synthetic rubber sealant on to old concrete.
- Arrange the sequence of operations so that the formwork, and any opening forms or box outs, provide a template from which the reinforcing steel can be properly spaced. This will ensure that the correct concrete cover is maintained in the finished work.
- Any infill or closure panels, such as those needed to make up non-standard lengths, should get hitched with the main formwork. Use a fixing method that allows you to fix and strip the infills without causing damage. Avoid cutting, or drilling holes in standard panels or shutter.

- Holes that you have to make in the formwork should be near, so that they can be punched or plugged later on. Drill timber from face to avoid splintering.
- For high quality work, the cut edge of the hole should be sealed in order to reduce water penetration.
- Lightly tack all battens and blocking-out pieces so that they stay in the concrete during the striking of the formwork. Oil all boxes and block-out formers before placing any concrete to ensure that they can be easily removed after the main forms have been struck.
- Satisfy yourself before concreting that all inserts and boxes are securely fixed, and check that they are slightly chamfered to make them easy to remove.
- Be certain you understand which items are to be placed during concreting, and how they are to be fixed.
- Pay particular attention to the rigidity and line of stop ends and joint formers, since these will be seen on the face of the finished work.
- Remove all tie-wire clippings and nails, which will stain both the formwork and the concrete, and get rid, too, of any dirt and shavings.
- Make sure that adequate access and working platforms are in place for the concreting gang, and that toe boards and guard rails (including end rails) are provided.



Method of statement

- Sloping or horizontal top forms are subject to upward pressures, and steps should be taken to stop them from lifting.
- The weight of large prefabricated sections of formwork should be marked on them so that you can easily see what it is. Check that the capacity of the crane at the working radius is equal to lifting them. Lifting points are usually provided on the sections,
- If necessary, a spreader or lifting panel should be used to prevent distortion. Make sure that inclined slings are long enough. The flatter they become, the less they can lift. If you plan to lift by the vertical soldiers, check that they are adequately connected to the walings.

STRIKING THE FORMWORK

Formwork needs to be treated with a release agent so that it can eventually be removed without sticking, or damaging the surface finish of the concrete.

The agent is applied, before concreting starts and before the reinforcement is fixed, each time that the form is used.

The various materials, such as timber and steel might each require a different type of release agent, so always make sure the correct one is being used. A few special face materials, such as expanded polystyrene, do not required a release agent.

THE THREE MOST COMMON TYPES OF RELEASE AGENT:

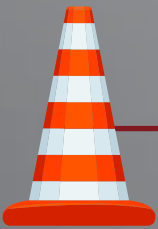
- Neat oils with surfactants. Used mainly on steel faces, but also suitable for timber and plywood.
- Mould cream emulsions. Good general - purpose release agents for use on timber and plywood.
- Chemical release agent. Recommended for high-quality work, applied by spray.

Safety manuals



Gear Up

Always wear safety glasses and hard hats when erecting and dismantling scaffold formworks.



Scaffolding Accidents

Safety is everybody's duty. Scaffold accidents may result from construction deficiencies or from falling objects from exposed or open sides of platforms and mainly from not doing one's duty.



Working Platforms

All platforms must be fully flanked. All protection is required on all scaffolds where the working height is above 10'. Guardrails and toeboards should be installed along all sides and end of platforms. Guardrails must be able to withstand 90Kgs at force. Toe boards should be used to protect workers from tools and equipment falling from platform. Do not use scaffold if planks are not scaffold grade and if the planks are painted, cut or split.



Use Equipment for their Intended Purpose Only

All scaffold accessories shall be used and installed in accordance with manufacturer's recommended procedure. Accessories shall not be altered in the field. Various manufacturer shall not be mixed or used alternately.



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