



**DEGREES FOR TRADING
AND CONTRACTING**
Scaffolding & Formwork solutions



9°Degrees Product Catalog

9°Degrees Products

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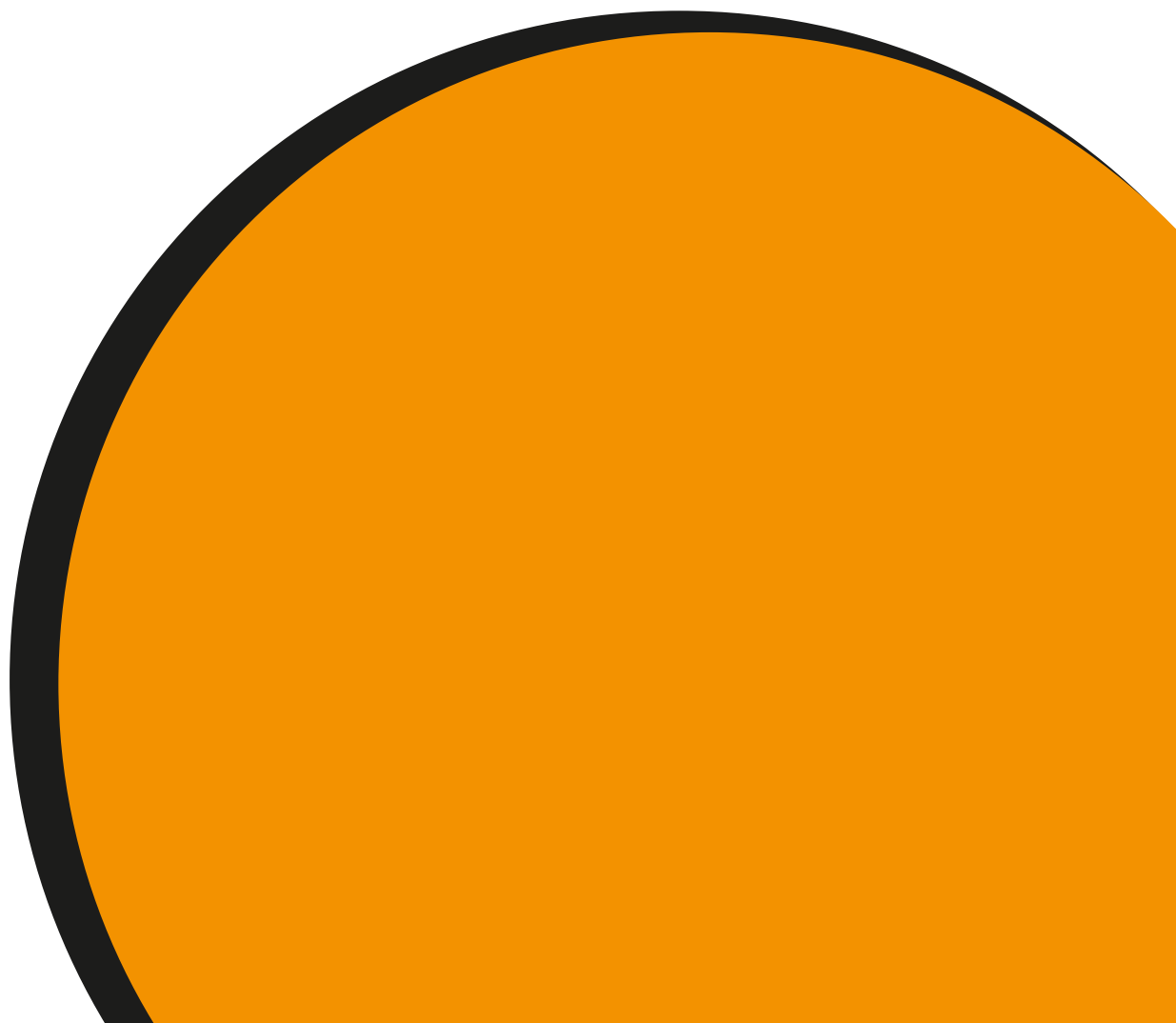
17 | Aluminum
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18 | Safety Net System

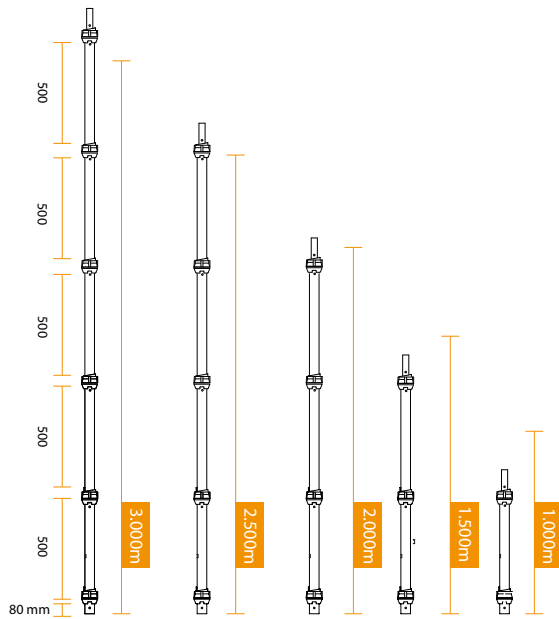
19 | Safetyboard Edge
Protection System

Scaffolding Cuplock System

The Cuplock Scaffolding System is a versatile and widely used modular scaffolding system. It's designed for speed, simplicity, and adaptability.



CUPLOCK VERTICALS - Standard



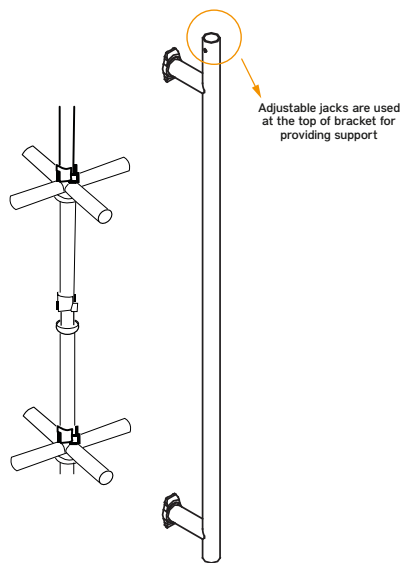
Steel Great 253

Tube is Ø 3.2 - 48.3MM & 3.0MM -

Painted / Drop Forged Top Cups

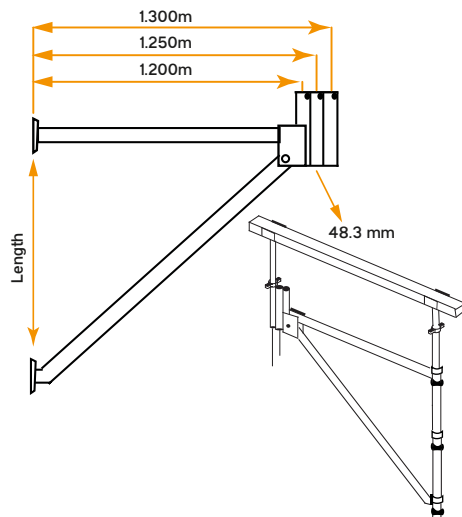
EN 10219

CUPLOCK VERTICALS - Standard			
Code	Type	weight 3.2MM	weight 3.0MM
SC-100	Cuplock Spigotless Standard -3.00m	14.6	13.98
SC-101	Cuplock Spigotless Standard -2.50m	12.17	11.65
SC-102	Cuplock Spigotless Standard -2.00m	9.74	9.32
SC-103	Cuplock Spigotless Standard -1.50m	7.31	7
SP-104	Cuplock Spigotless Standard -1.00m	4.88	4.67



Beam Bracket

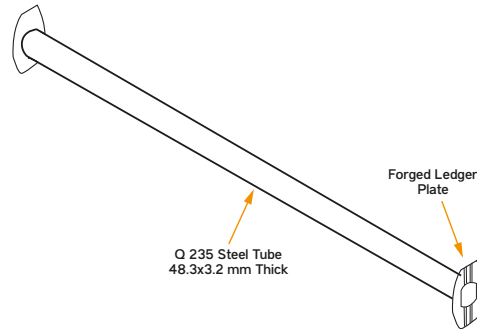
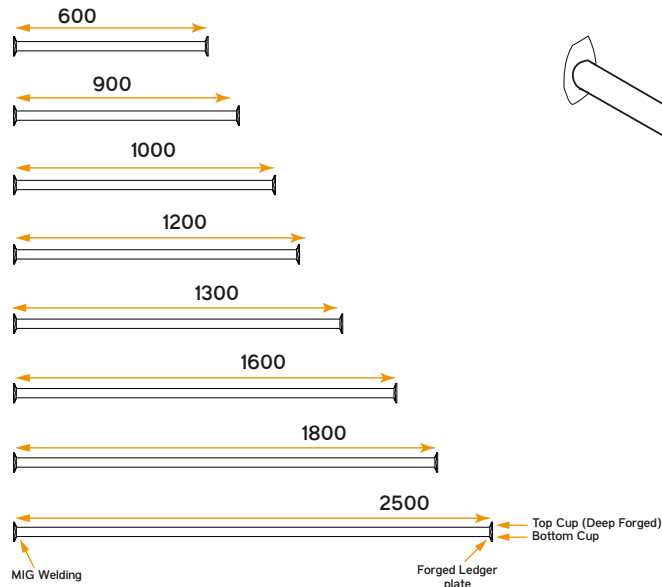
BEAM BRACKET SPECIFICATIONS						
Code	Steel type	Size	Standard	Ledger Blades	Surface Finish	weight
BM120- 10	GR 253	1.00 M	EN 10219	210 gms high	Painted	6.650 Kg
BM120- 15	GR 253	1.50 M	EN 10219	quality forging	Painted	8.750 Kg



Cantilever Frame

Cantilever Frame Specifications						
Code	Steel type	Size	Standard	Ledger Blades	Surface Finish	weight
150- 10	GR 253	1.00 M	EN 10219	210 gms high	Painted	15.700 Kg
150- 15	GR 253	1.50 M	EN 10219	quality forging	Painted	17.000 Kg

Scaffolding Cuplock Ledgers



Steel Great 253

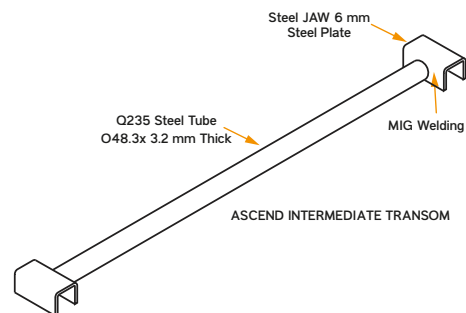
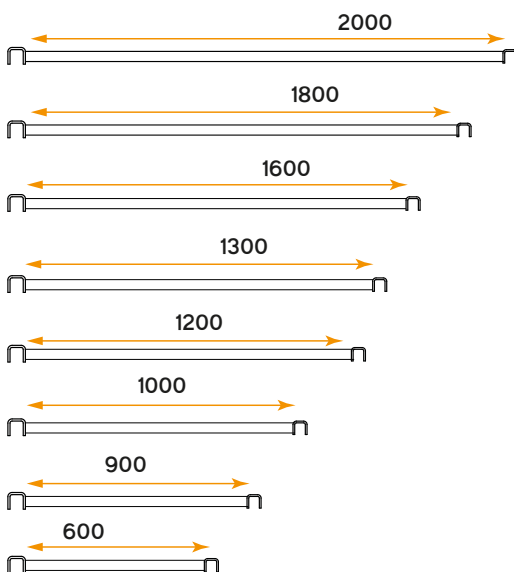
Tube is Ø 48.3 - 3.2MM & 3.0MM -
Painted / Drop Forged Ledger
Plate Open

EN 10219

CUPLOCK Access Scaffold Horizontals - Ledger

Code	Type	weight 3.2MM	weight 3.0MM
SC-110	Cuplock Ledger -2.50m	9.15 kgs	8.64 kgs
SC-111	Cuplock Ledger -1.80m	6.66 kgs	6.30 kgs
SC-112	Cuplock Ledger -1.60m	5.95 kgs	5.63 kgs
SC-113	Cuplock Ledger -1.30m	4.88 kgs	4.62 kgs
SP-114	Cuplock Ledger -1.20m	4.52 kgs	4.28 kgs
SC-115	Cuplock Ledger -1.00m	3.81 kgs	3.61 kgs
SP-116	Cuplock Ledger -0.90m	3.46 kgs	3.28 kgs
SP-117	Cuplock Ledger -0.60m	2.39 kgs	2.27 kgs

Intermediate Transom



Steel Great 253

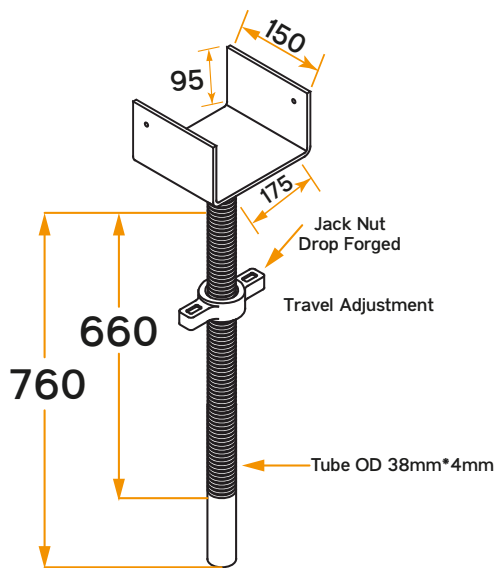
Tube is Ø 48.3 - 3.2MM &
3.0MM - Painted

EN 10219

CUPLOCK Access Scaffold Horizontals-Intermediate Transom

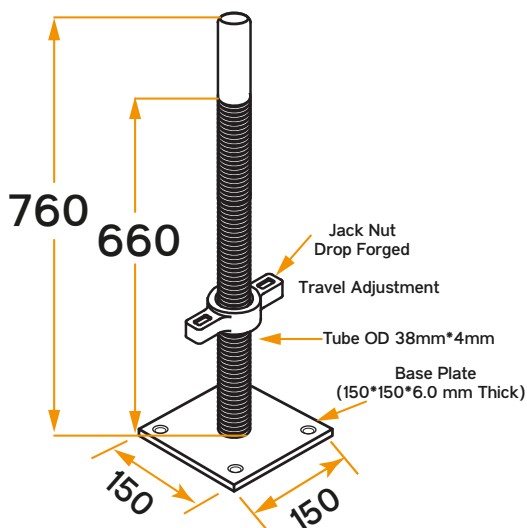
Code	Type	weight
IT-118	Intermediate Transom - 2.50m	10.38 kgs
IT-119	Intermediate Transom - 1.80m	07.17 kgs
IT-120	Intermediate Transom - 1.60m	06.11 kgs
IT-121	Intermediate Transom - 1.30m	05.75 kgs
IT-122	Intermediate Transom - 1.00m	04.42 kgs
IT-123	Intermediate Transom - 0.60m	02.65 kgs

Adjustable U-Head



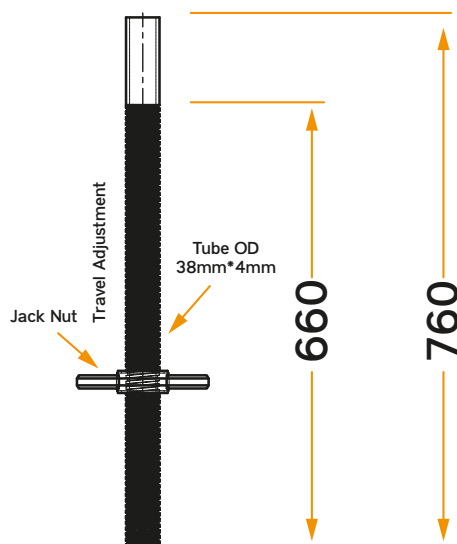
U Plate size 150x170x8.0mm / 6.00mm thick & height 100mm
 Jack Nut: Drop Forged
 Tube: 38 Dia X 4.0mm thick & length 660mm
 Surface Finish: Galvanized/Electroplated

Adjustable Base Jack



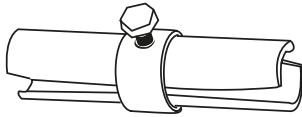
Base Plate Size: 150mm x 150mm x 6.0mm
 Jack Nut: Drop Forged
 Tube : 38mm OD x 4.0mm thick, length 660mm
 Surface Finish: Galvanize / Electroplated

Universal Jack



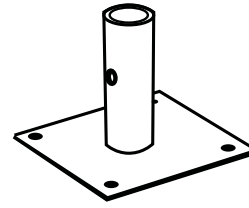
Tube : 38mm OD x 4.0mm thick, length 660mm
 Surface Finish: Galvanize / Electroplated

Scaffolding Couplers System (Fittings)



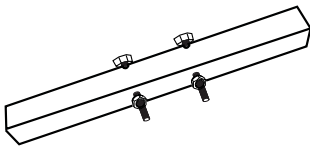
PRESSED JOINT PIN

Surface Finish: Electroplated
S.W.L : N.L.B
Weight: 0.70kg



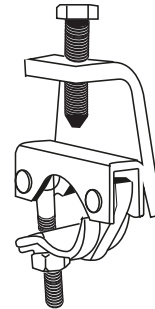
SOCKET BASE PIPE 1.5" X 1500MM

Base Plate Size: 150mm x150mm x 6.0mm
Tube : 38mm OD x 4.0mm thick, length 660mm



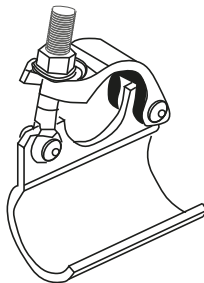
Loose Spigot Connector-TUBE 38.1

Thickness: 2.0mm
Surface Finish: Painted



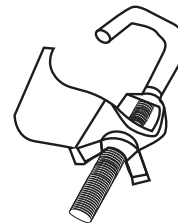
Girder Coupler

EN 74 Class B
Diameter : 48.3mm*11.5mm
Surface : Galvanized
Standard : EN74
Weight : 1.6 Kg / Piece



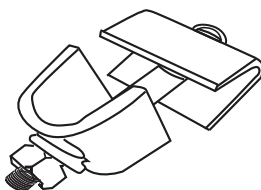
DROP FORGED SINGLE COUPLER

EN 74 Class B
Surface Finish: Electroplated
S.W.L : N.L.B
Weight: 0.66Kg



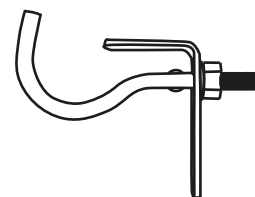
LADDER CLAMP

EN 74
Surface Finish: Electroplated
S.W.L : N.L.B
Weight: 0.50 Kg



UNIVERSAL CLAMP

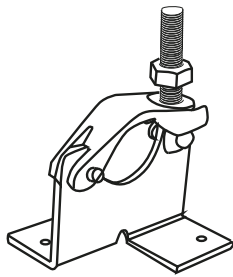
Surface Finish: Electroplated
S.W.L : N.L.B
Weight: 0.47 Kg



TOE BOARD CLAMP

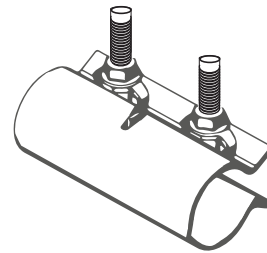
EN 74
Suitable Pipe : 48.3mm OD
Weight : 0.500 Kg
Finishing : Zinc Plated

Scaffolding Couplers System (Fittings)



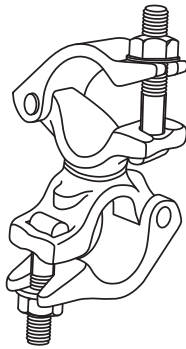
Board Retaining Clamp

EN 74 Class B
Surface Finish: Electroplated
S.W.L : N.L.B
Weight- 0.64Kg



SLEEVE COUPLER

EN 74 Class B
Surface Finish: Electroplated
S.W.L : 3.00 kN
Weight: 1.20Kg



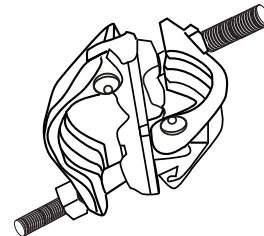
DROP FORGED SWIVEL COUPLER

48/48

EN 74 Class B
Surface Finish: Electroplated
S.W.L : 6.25kN
Weight : 1.07 kg

48/60

EN 74 Class B
Surface Finish: Electroplated
S.W.L : 6.25kN
Weight : 1.310 kg



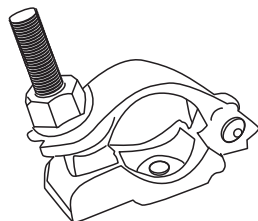
DROP FORGED DOUBLE COUPLER

48/48

EN 74 Class B
Surface Finish: Electroplated
S.W.L : 6.25kN
Weight : 1.07 kg

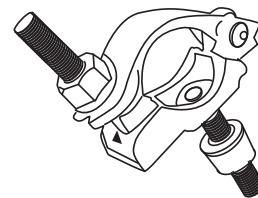
48/60

EN 74 Class B
Surface Finish: Electroplated
S.W.L : 6.25kN
Weight : 1.270 kg



DROP FORGED HALF COUPLER

48.3 OD Tube size
EN 74 Class B
Surface Finish: Electroplated
S.W.L : 6.25kN
Weight : 0.65 Kg



Drop Forged Half Coupler (with Toggle Bolt)

48.3 OD Tube size
EN 74 Class B
Surface Finish: Electroplated
S.W.L : 6.25kN
Weight : 0.75 kg

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Applicable Standards:

- 6.0m

6	6	225	38	43	Long-span formwork & industrial scaffolds
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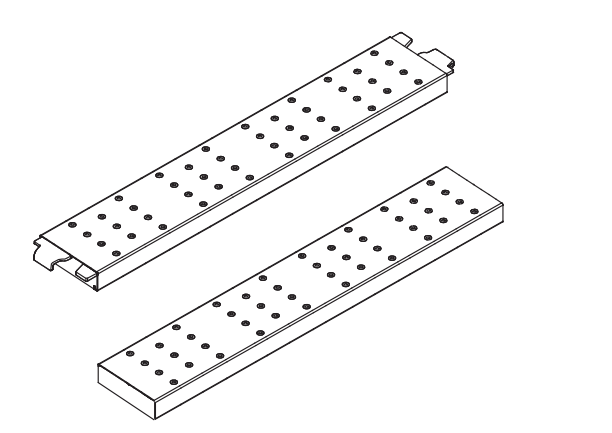
CUPLOCK STAIRCASE UNIT – 1.5m & 2.0m LIFT

items are required:

STAIRCASE UNIT – 2.0m LIFT (ALL STEEL)

Compliance	OSHA, EN 12811, BS 1139, and relevant local standards
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Scaffolding Steel Planks



Steel planks Specifications			
Code	Length	Dimensions	Standard
SP-400	4.0 MT	38mmx225mm	EN 12811
SP-300	3.0 MT	38mmx225mm	EN 12811
SP-250	2.50 MT	38mmx225mm	EN 12811
SP-200	2.0 MT	38mmx225mm	EN 12811
SP-150	1.50 MT	38mmx225mm	EN 12811
SP-100	1.0 MT	38mmx225mm	EN 12811
SP-050	0.50 MT	38mmx225mm	EN 12811



Scaffolding Steel planks, which are essential components in construction and maintenance scaffolding systems. These planks provide a stable and safe platform for workers. Here are some specifications and details:

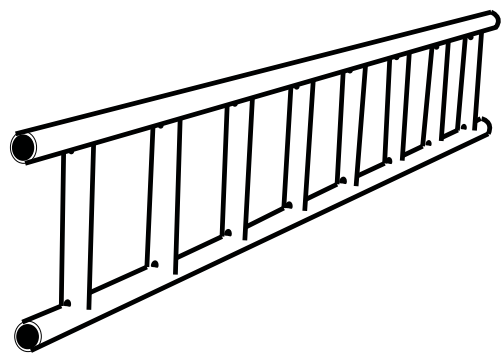
1. Metal Scaffold Planks:

- **Materials:** Steel pre-Galvanized. G90 – Sheet. **275MPa min.** Yield – **Weight ~ 4.25kg/L.M – Fy=275 N/mm² - Mm ax =104 Kg. m**
- Mid-point Failure load is **445kg at 1.0m spam**
- **Width:** Available in various widths, including 200mm, 210mm, 225mm, 230mm, and more.
- **Thickness (Height):** Common thicknesses include 38mm
- **Load-Bearing Capacity:** Depending on the specific design and material, metal scaffold planks can support varying loads.
- **Weight:** The weight per plank varies based on dimensions and material.

2. Safety Considerations:

- Metal scaffold planks should comply with safety standards such as OSHA 29CFR1926.451, ANSI A10.8, and ANSI/SSFI S100.
- Regular inspections ensure that planks remain in good condition and can safely support workers.

Scaffolding Ladder Beams



Ladder Beams				
EN-10219- 3.20mm				
Code	Length	Dimenensions	Standard	Weight
T-3LD-600	6.0 MT	48.3mmx3.20mm	EN 10219	63.45 Kg
T-3LD-600	5.0 MT	48.3mmx3.20mm	EN 10219	52.80 Kg
T-3LD-600	4.00 MT	48.3mmx3.20mm	EN 10219	42.24 Kg
EN-39- 4.00mm				
T-4LD-600	6.0 MT	48.3mmx4.00mm	EN 39	79.35 Kg
T-4LD-500	5.0 MT	48.3mmx4.00mm	EN 39	66.12 Kg
T-4LD-400	4.00 MT	48.3mmx4.00mm	EN 39	52.90 g



Sizes and Dimensions:

- Depth: The standard depth of ladder beams is 305mm.
- Vertical Support Spacing (Rungs): The distance between vertical supports (also called rungs) is also 305mm.
- Other Depths: Ladder beams are available in various depths, including 228mm, 360mm, 310mm, and 400mm.

H20 Temper Beam



H20 Beam Formwork System

H20 wooden beams, are fundamental components in formwork systems. These beams play a crucial role in shaping concrete structures during construction. Let’s dive into the details:

9Degrees Smart H20 Beam:

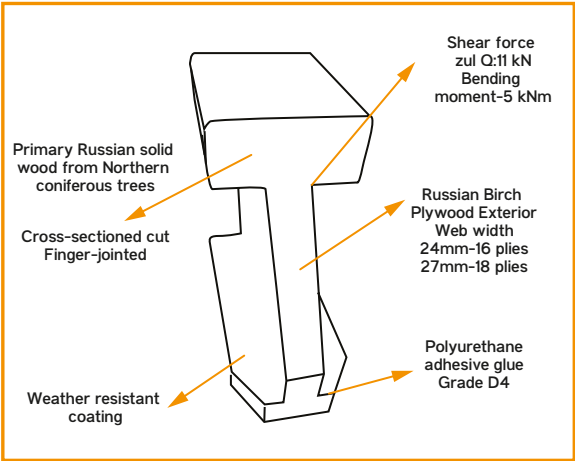
H20 Top Beam Purpose: The H20 Top Beam is designed for durability and longevity. It features a built-in shock absorber at the beam end, which triples its lifespan. This shock absorber reduces damage at the end of the beam and provides effective protection against moisture and UV radiation.

- Features:**
- i. Markings on the beam chords for fast and safe formwork setup.
 - ii. Beams marked in a 50-cm increment grid.
 - iii. Two system holes at each beam end.
 - iv. Customization options available.

Applications:

- i. H20 wooden beams are used in various formwork systems, including wall formwork, table formwork, slab formwork, and column formwork.
- ii. Their versatility, strength, and ease of handling make them a popular choice on construction sites worldwide.

Technical Specifications			
Moment (M)	ZUL M = 5 kNm	Length, mm	Up 1500 to 6000
Shear force	ZUL Q = 11 kN	Height, mm	200
Rigidity (E x J)	450 kNm²	Shelf width, mm	80
Weight	5.5 kg/lfm (N) 5.5 kg/lfm (P)	Shelf Thickness, mm	40
Certificate	EN 13377	Rack Thickness, mm	24-27
Glue	Polyurethane adhesive Glue Grade D4 - ComliesWith TU 20.52.10-002-19299941-2018 European Standard DIN EN 204 and DIN EN 14257 - Watt91		
Coating Formwork girders	Water - based coating of yellow color Tech. Conditions 2316-047-43659241-08		

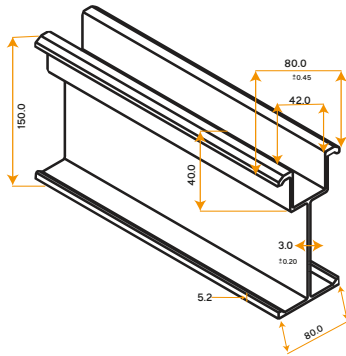


9Degrees Smart H20 Beam Size		
Code	Length	kg
010416	H20 Beam - 1.90 m	8.33
010406	H20 Beam - 2.90m	12.8
010415	H20 Beam - 2.45m	10.8
010417	H20 Beam - 2.65m	11.7
010437	H20 Beam - 3.60m	15.8
010407	H20 Beam - 3.90m	17.2
010441	H20 Beam - 4.50m	19.8
010408	H20 Beam - 4.90m	21.6
010409	H20 Beam - 5.90m	26.0

Dimensions: Height 200mm X 80 mm width

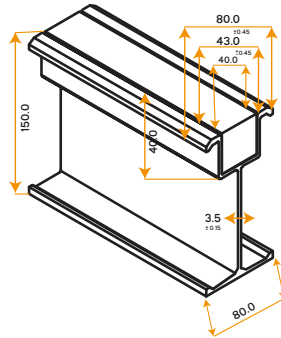
Standard: EN 13377

Aluminum Beam



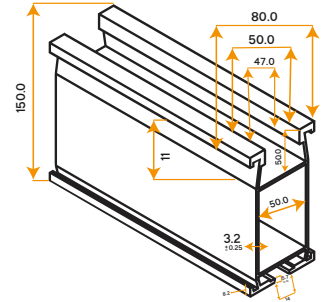
Aluminum Beam S150

3.010 kg / m



Aluminum Beam S150

3.729 kg / m



Aluminum Beam T150

4.945 kg / m

Product Description:

- I. Aluminum Beam offers an SD 150 & 120 "that is available in lengths up to 6.0m. These beams come with either a plastic or wood insert
- II. The 750mm Aluminum X Beam was specifically designed as a lightweight alternative to traditional steel unit beams.
- III. Strength: It boasts an excellent weight-to-strength ratio due to its unique frame design.
- IV. Preferred Choice: This beam is commonly specified by scaffolding design engineers worldwide for high-load capacity requirements.

Aluminum beams Work schedule, technical specifications					
150mm ALUM-9D / 3.2 mm-3.241 kg/m - Profile 15		150mm ALUM-9D/3.0MM -3.010Kg/m - Profile 20		150mm ALUM-9D/4.0MM 3.808Kg/m - Profile 25	
Modulus of elasticity E	70.000 Mpa	70.000 Mpa		70.000 Mpa	
yield stress - alum. Fy	285 Mpa	285 Mpa		285 Mpa	
ultimate tensile strength Fu	310 Mpa	310 Mpa		310 Mpa	
bending stress fb	250 Mpa	250 Mpa		250 Mpa	
shear stress q	207 Mpa	207 Mpa		207 Mpa	
cross section area A	1175.65 mm ²		1110.96 mm ³		1405.3 mm ³
Moments of inertia Ixx	362 CM4		344.64 CM4		413.55 CM4
Moments of inertia Iyy	45 CM4		4294 CM4		48.74 CM4
centrlodal Distance yb	77.62 MM		77.53 MM		69.17 MM
bending stress fy	165 Mpa	165 Mpa		165 Mpa	
Shear stress fs	82.8 Mpa	82.8 Mpa		82.8 Mpa	
bending strength M	7.69 Kn-m	7.69 Kn-m			10.22 Kn-m
Shear strength V	97.37 Kn		91.98 Kn		116.35 Kn
Ultimate Capacity					
Shear	97.37 kN	91.98 kN		91.98 kN	
Moment	13.29 Kn-m	12.66 Kn-m		12.66 Kn-m	
EI	7 x 10 ⁻⁵ x 362	7 x 10 ⁻⁵ x 345		7 x 10 ⁻⁵ x 345	
Allowable capacity					
Shear	53.19 kN		116.35 kN		68.14 kN
Moment	7.69 Kn-m		17.03 Kn-m		10.22 Kn-m
EI	7 x 10 ⁻⁵ x 362		7 x 10 ⁻⁵ x 414		7 x 10 ⁻⁵ x 414

Galvanized Scaffolding Tube



Durability and Corrosion Resistance:

- Galvanized finishes provide excellent durability. The tubes are triple-coated in-line, offering better corrosion resistance.
- Whether used in scaffolding in the or maintenance in industrial projects or oi structures, galvanized tubes withstand harsh conditions.

Effective Lengths (Common Sizes):

- Wall Thickness: Typically, 3.2mm or 4.0mm.
- Outside Diameter (O/D): Standard 48.3mm (as per EN 10219 and BS1139)

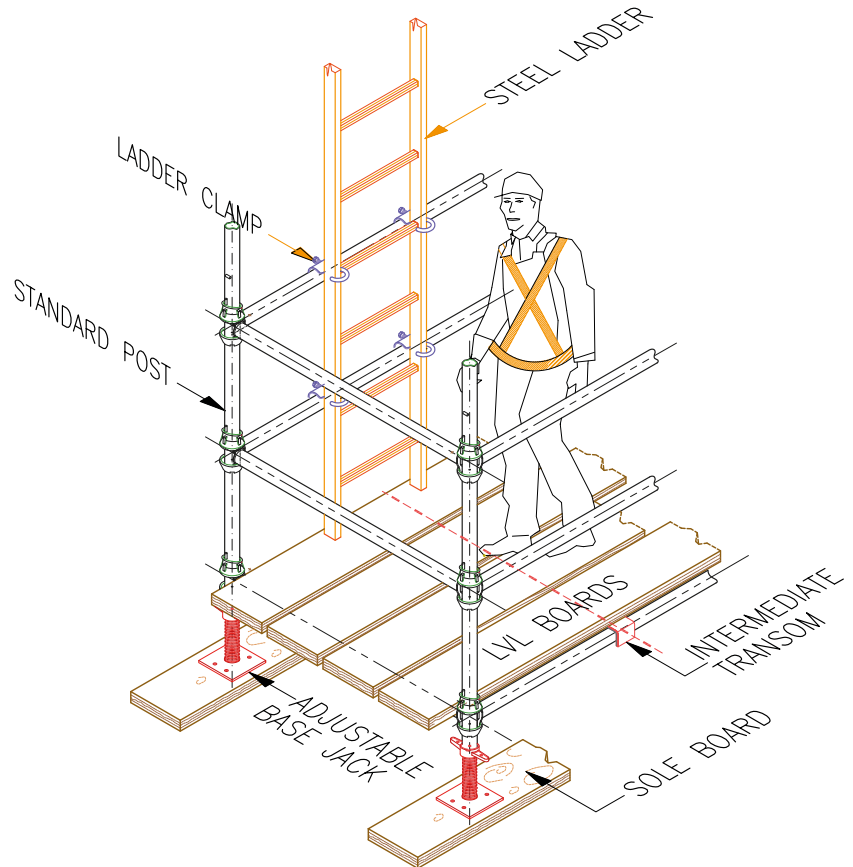
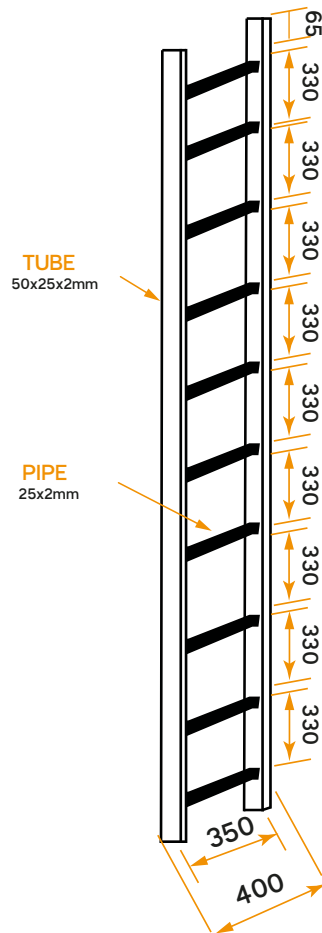
Surface Finish: Hot Dip Galv

Embossed Tubes EN10219

320N/mm² yield - S235 Grade

Hot Dipped Galvanized Scaffolding Tube For Pressing-embossed En 10219-S235 Grade					
Ultimate tensile strength : 410 N/mm²					
Code	Length	Thickness	Weight	Standard & Grade	Galvanized Caoting Thickness
GI-P-600	6.0 MT	3.20 mm	22.3 Kg	EN-10219/S235	45-60 microns
GI-P-400	4.0 MT	3.20 mm	14.2 Kg		
GI-P-300	3.0 MT	3.20 mm	10.63 Kg		
GI-P-200	2.0 MT	3.20 mm	7.08 Kg		
GI-P-100	1.0 MT	3.20 mm	3.48 Kg		
Hot Dipped Galvanized Scaffolding 4.00mm / En 39-S235 Grade					
Code	Length	Thickness	Weight	Standard & Grade	Galvanized Caoting Thickness
TGI-P-600	6.0 MT	4.00 mm	26.57 Kg	EN-10219/S235	45-60 microns
TGI-P-400	4.0 MT	4.00 mm	17.71 Kg		
TGI-P-300	3.0 MT	4.00 mm	13.29 Kg		
TGI-P-200	2.0 MT	4.00 mm	8.86 Kg		
TGI-P-100	1.0 MT	4.00 mm	4.43 Kg		

Steel ladder



Item	Specification
Material	Steel (Q235 or equivalent)
Width	~400 mm (ladder rung-to-rung width)
Rung Spacing	250 mm – 300 mm
Rung Type	Solid steel bar or anti-slip perforated pipe
Weight	7–12 kg per meter, depending on thickness
Surface Finish	Hot-dip galvanized, or painted
Compatibility	Ringlock, Cuplock, and Frame scaffolding systems
Mounting Options	Fixed with clamps to standards or integrated into scaffold bays
Safety Accessories	Cage guards, rest platforms, hooks for lifelines
Standard	BS EN 131

Steel ladder scaffolding refers to a vertical or inclined access system constructed from high-strength steel tubes, providing a compact, durable, and space-efficient way for workers to climb between scaffold levels.

STEEL LADDER			
2.00mm			
Code	Length	Standard	Weight
010710	2.00 MT	BS EN131	16.00 kg
010707	3.00 MT	BS EN131	24.00 kg
010706	4.00 MT	BS EN131	32.00kg
010705	6.00 MT	BS EN131	48.00 kg

SPF-80 is a lightweight column and wall formwork system. It is a tailor-made panel system design to be used on different applications with excellent concrete finishing.

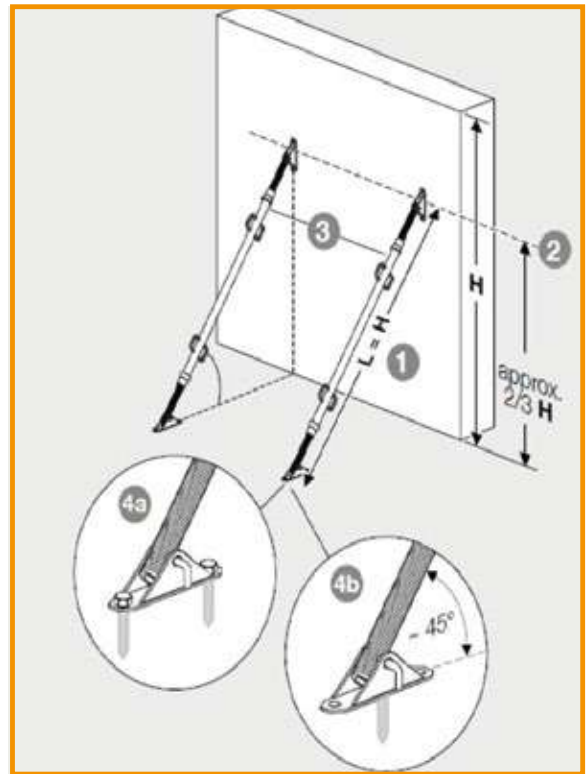
SPF-80 is ideal for fast, cost-effective forming both with and without a crane. The versatile panel sizes make it flexible to all site requirements. It can be stacked upright, horizontally, and vertically to meet the required height and width.

Main Features:

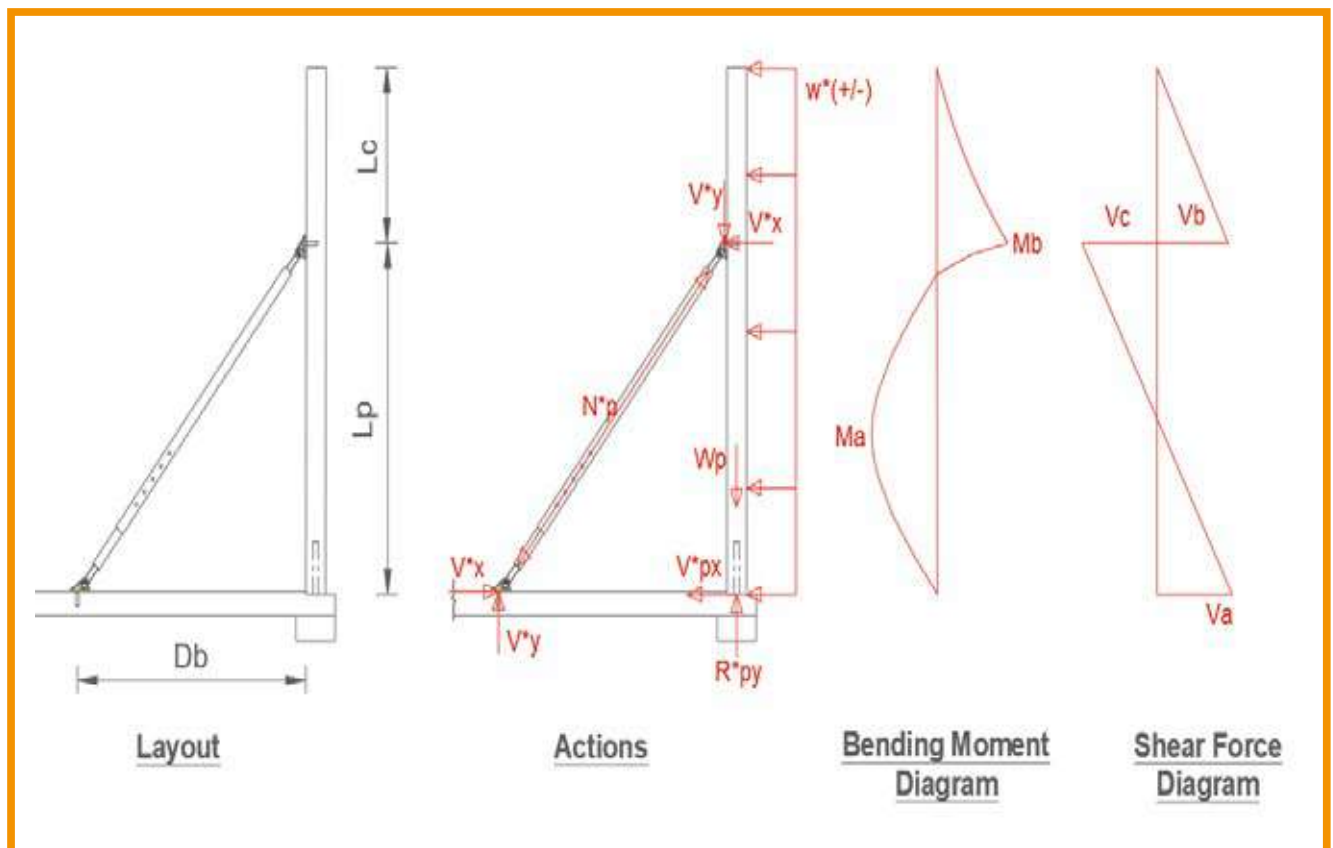
- 50mm c/c hole provided in the strut channel ribs for easy adjustment.
- Simplified fasten accessories.
- Reduced number of accessories.
- Robust steel frame with durable corner connection to guarantees the longer life span of the panels.
- Easy to repair.
- Integrated handles for easy handling.
- High quality 18mm plywood with edge protected for longer use.
- Panel width 900mm allowable pressure 40kN/m².
- Panel width 600mm and 300mm allowable pressure 80kN/m².



CALCULATING ACTIONS FOR PROPS PRECAST CONCRETE



A common method for calculating propping actions involves calculating a resultant point load and taking moments around the base of the panel. However, this can lead to underestimation in loading calculations, particularly in nonstandard layouts.



PRECAST PANEL PROPPING RULES OF THUMB

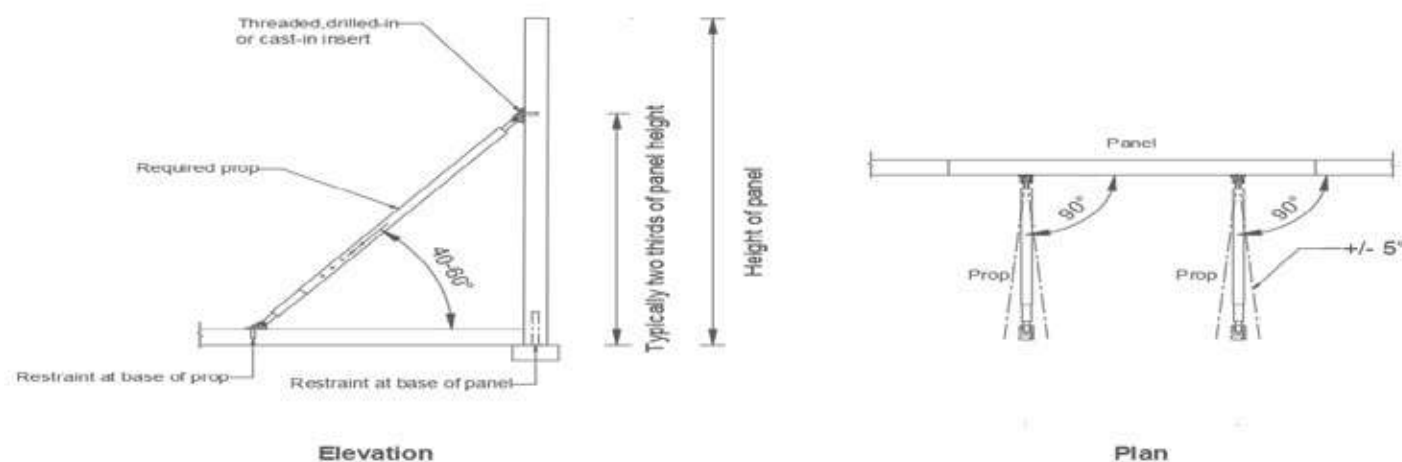
The following rules of thumb should be utilised as a starting point for design. Note that geometric or methodology constraints may call for modifications to these guidelines and this is acceptable if careful consideration and analysis is applied (Refer to Figure 1: Recommended concrete panel bracing)

- **Fix props at two thirds the height of the panels.**

This is to limit loading on the panels and excessive kick-back at the base of panels (refer to Section 5 for guidance on calculating demands).

- **Ideally props should be installed at 40-60- degrees.**

Steeper angles will result in high vertical loads on the anchors and hold-down elements



9D – L1

Lighter prop, usually comes in the coated version with the aim of optimizing the costs-benefits ratio given that it is used for propping light objects.

Features of the Type L1 push-pull prop:

Pipe protection: RAL 3009 red hot-dip coating with minimum durability in compliance with the ASTM D 224787- standard tests in a humidostatic chamber;

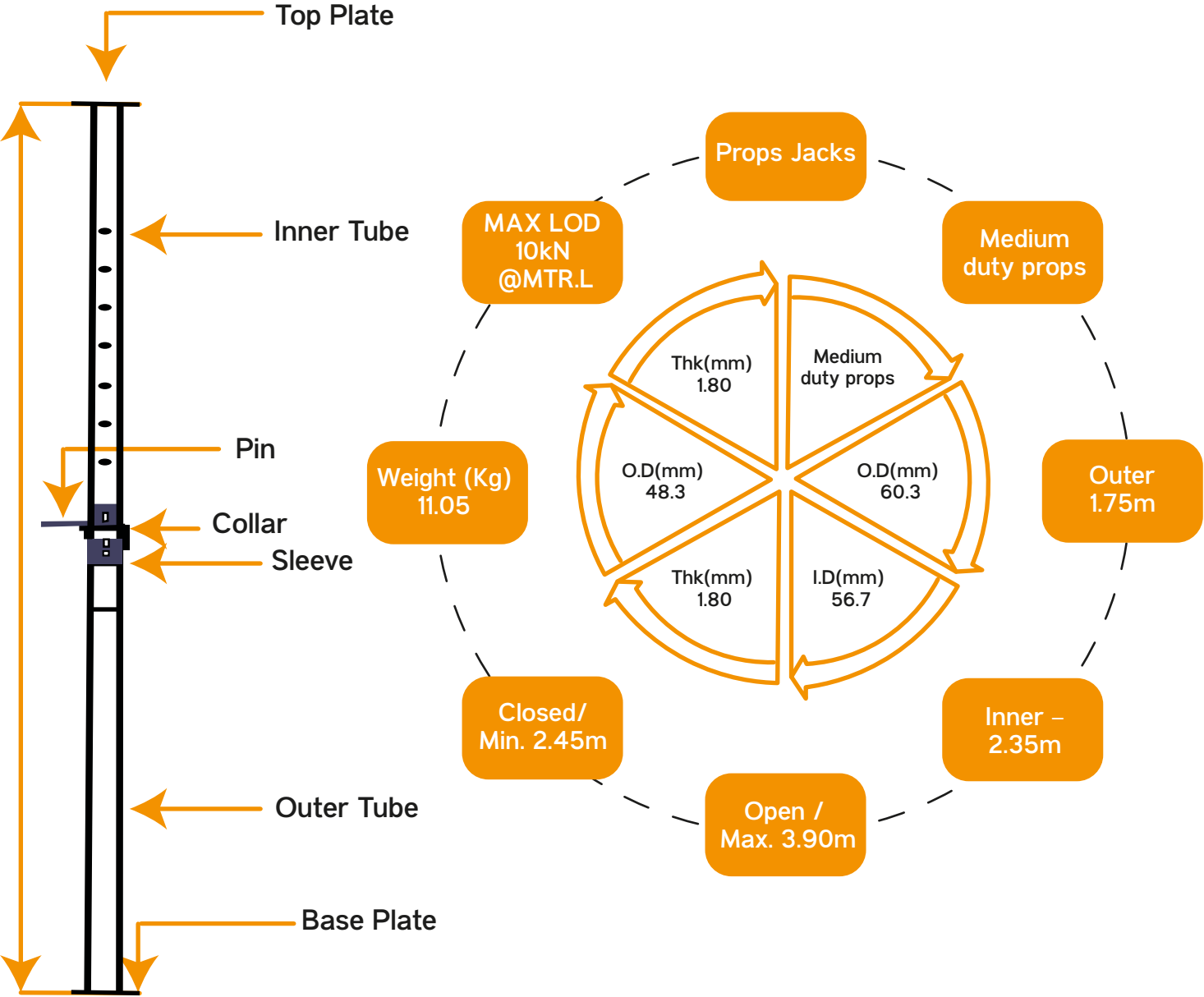
Inner pipe diameter 48 x 1.80 mm

Outer pipe diameter 56 x 1.65 mm

DIMENSIONAL TABLE

L1 push-pull prop	Extension max.(m)	Extension min.(m)	Ø Inner tube (mm)	Ø Inner tube thickness (mm)	Ø Outer tube (mm)	Ø Outer tube thickness (mm)	Plates	Weight (Kg)
PTS 3000 L1	3,05	1,75	48,3	1,8	58	1,65	YES	9,4
PTS 3500 L1	3,55	2,05	48,3	1,8	58	1,65	YES	10,5
PTS 4000 L1	4,05	2,35	48,3	1,8	58	1,65	YES	11,5
PTS 4500 L1	4,55	2,55	48,3	1,8	58	1,65	YES	12,6
PTS 5000 L1	5,05	2,85	48,3	1,8	58	1,65	YES	13,8

Props Jacks



LIGHT DUTY PROPS



LOADS TABLE			
Extension	220-400	240-450	280-500
(m)	(kN)		
5.00	-	-	4.43
4.90	-	-	4.74
4.80	-	-	5.06
4.70	-	-	5.70
4.60	-	5.05	6.08
4.50	-	5.52	6.46
4.40	-	6.00	6.93
4.30	-	6.36	7.39
4.20	-	7.03	7.99
4.10	-	7.58	8.59
4.00	6.20	7.58	8.59
3.90	6.52	8.10	9.35



We Provide different models of light steel props. They are classified according to maximum extension and capacity. Below are their technical features.

DIMENSIONAL TABLE							
Prop	Extension max.(m)	Extension min.(m)	Ø Inner tube (mm)	Ø Outer tube (mm)	Plates	Safe factor	Weight (Kg)
220-400	4,00	2,20	48,30	56,00	YES	1,65	10,54
240-450	4,50	2,40	48,30	56,00	YES	1,65	12,80
280-500	5,00	2,80	48,30	56,00	YES	1,65	13,00

High Load-Bearing Capacity with Optimum Quality

1- S10 (Class B):

The lightest in our range, this series is designed for moderate load capacity with a guaranteed load-bearing capacity of **10kN**.

2- S20 (Class D):

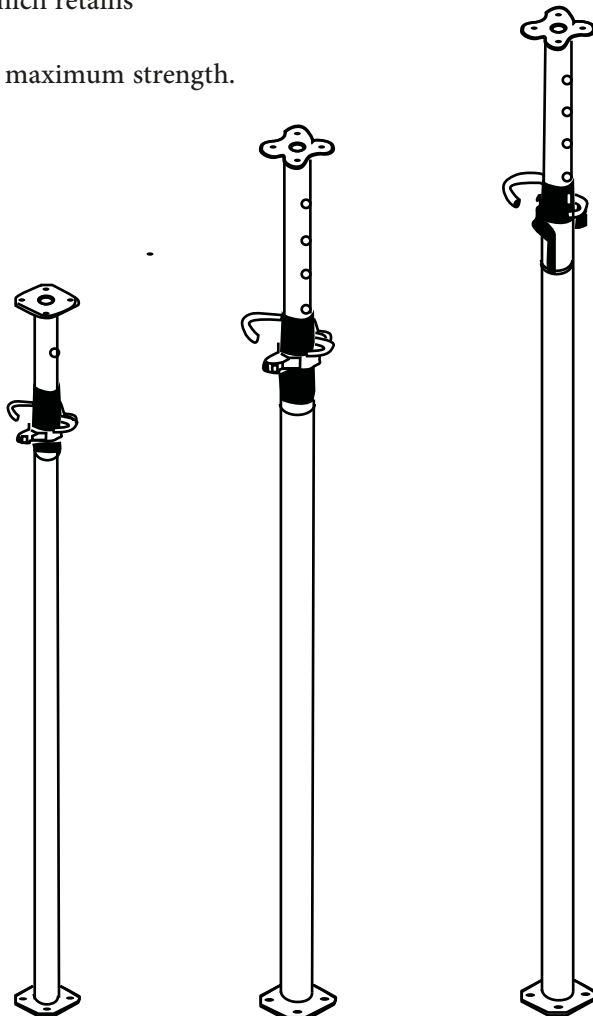
This series offers a robust solution with a guaranteed load capacity of **20kN**, making it suitable for more demanding applications

3- S30 (Class E):

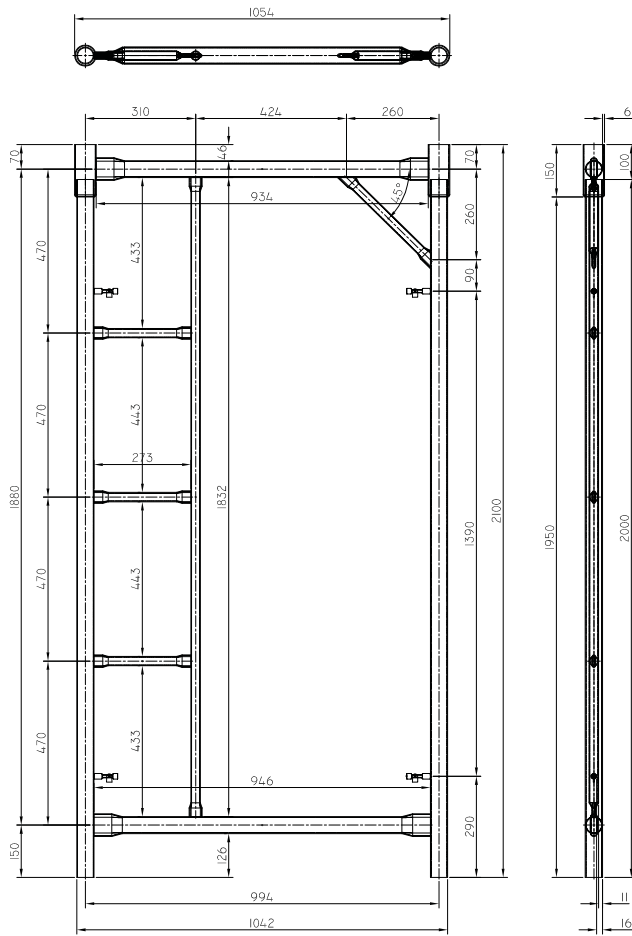
The most robust series, with a guaranteed load capacity of **30kN** ideal for the heaviest construction requirements.

Strong and durable.

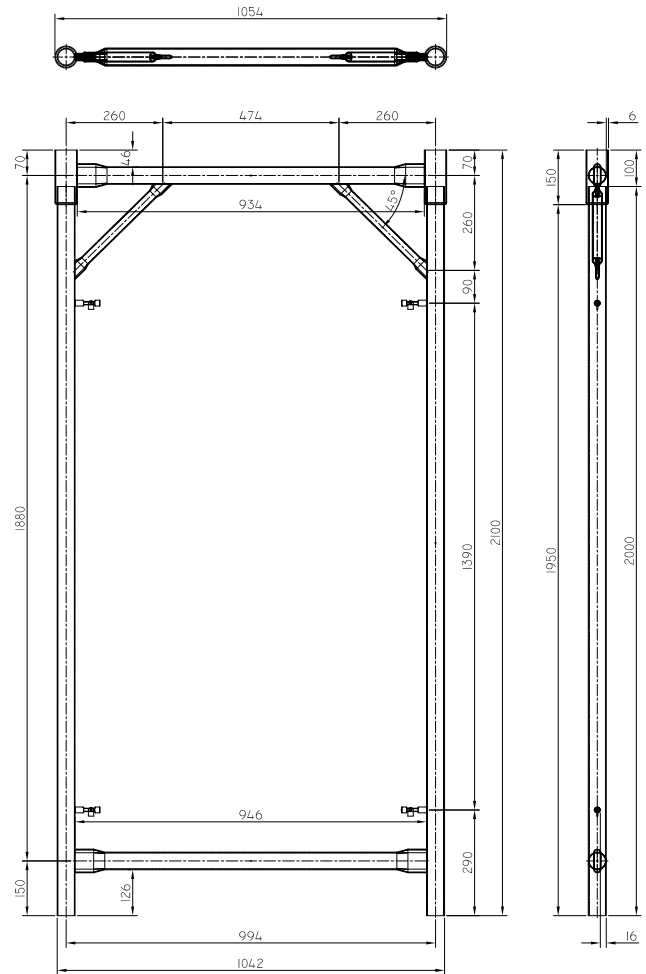
- Manufactured from high yield steel to Scaffco specifications.
- The prop outer-tube features a rolled thread which retains
- The tube wall thickness and thereby maintains maximum strength.



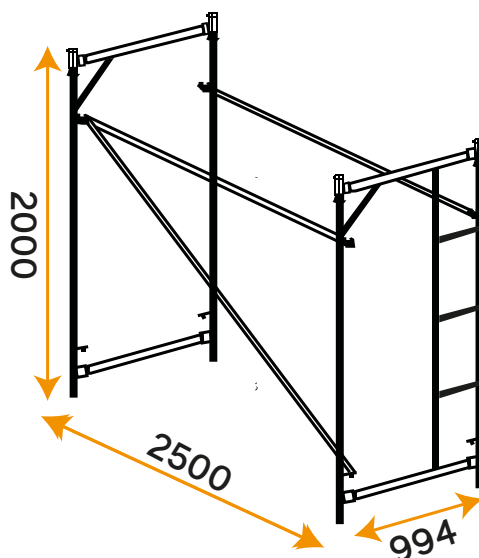
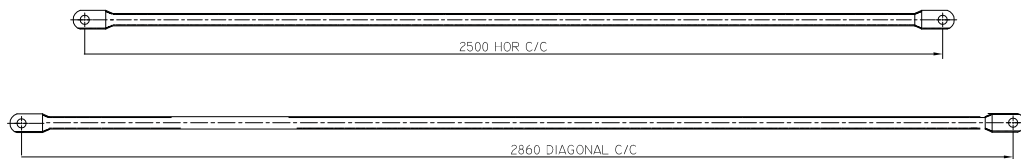
Scaffolding Frame



With Ladder



Without Ladder



H FRAME

Total Weight: 18.27 Kgs

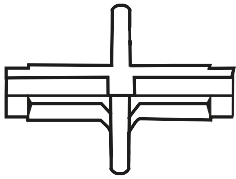
Tube: 48 Dia X 2.0mm thick

TITLE: 2000 X 1000 X 2

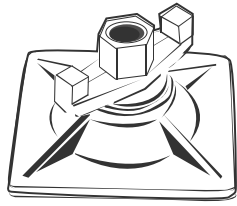
Raw material - SABIC HR coil 2.00mm thick

Surface Finish - Painted

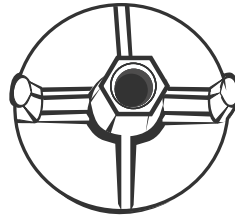
Formwork Accessories



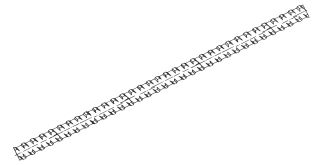
Water Stoppers



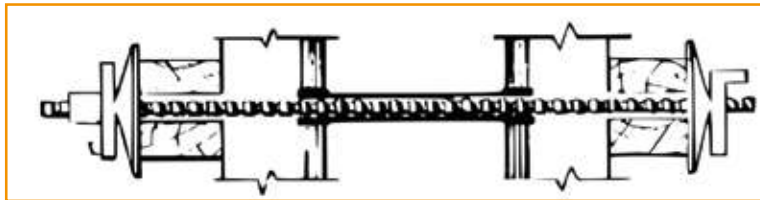
Super Plate



Super Plate

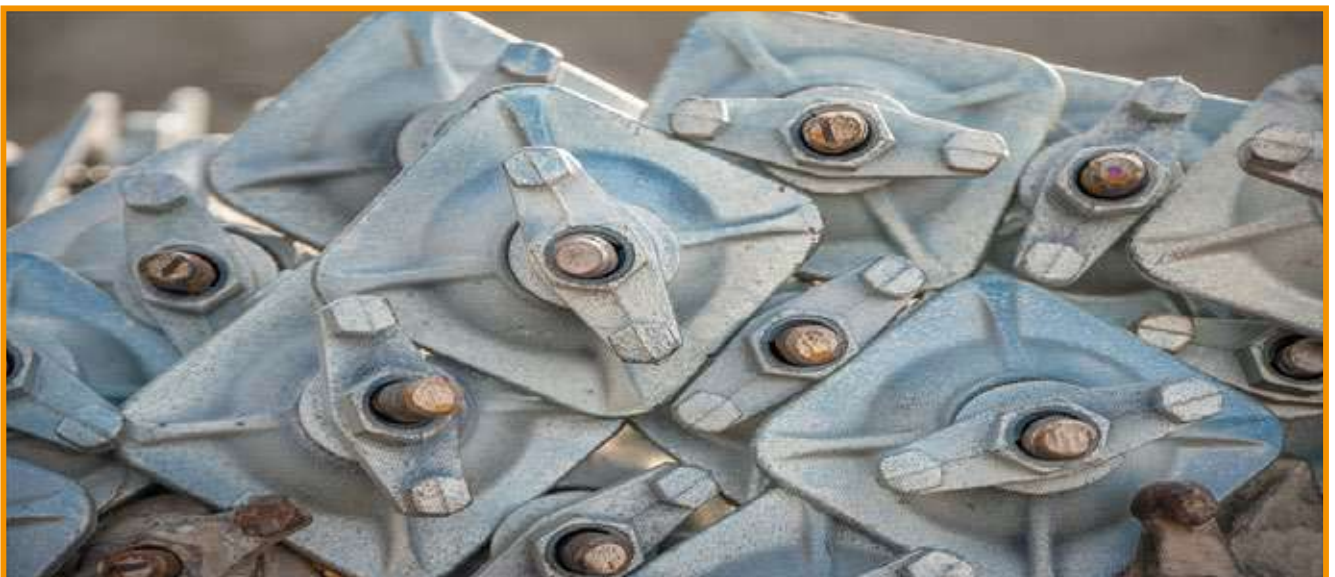


Hot Rolled Tie Rod



Hot-Rolled European 76 Steel 9Degrees Tie Rods:

Hot-Rolled Tie rods are threaded rods that connect opposite formwork panels, ensuring they remain aligned during concrete pouring. They provide stability and prevent bulging.





9Degrees Datasheet for Hot-Rolled Steel 76 European Tie Rods

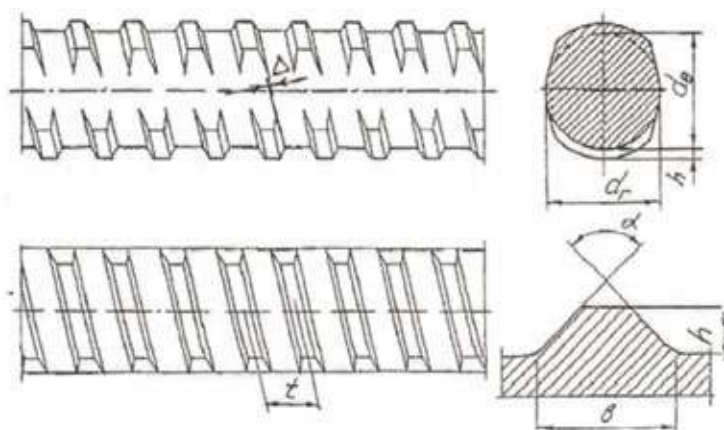
Steel formwork ties produced to use in the construction (Tie Rod), grade Steel 76.

1. Tie rod with nominal diameter 15 mm: Ultimate load no less than 188 kN, Yield load 159kN, Working load 100kN.
2. Configuration, dimensions and maximum deviations from the dimensions of the screw thread profiles are shown in figure 1 and in table 1.



Technical Datasheet

The assortment of the mill includes rolled sectioned hot-rolled screw threaded rebars intended for screw joints of structures in the mining and metallurgical, construction and engineering industries. Tula Metal Rolling Plant is ready to supply rolled screw threaded rebars with the parameters described below to consumers.



TYPES AND DIMENSIONS OF ROLLED SCREW THREADED REBARS											
Section number (nominalØ of rolled products, dB)	Die-rolled section parameters										
	d _B mm		h mm		d _r mm		t mm		b mm	Δ mm	a deg.
	nom.	dev.	nom.	dev.	nom.	dev.	nom.	dev.			
14	13.5	+0.1 -0.2	0.6	±0.1	13.0	+0.2 -0.3	4	±0.2	1.5	±0.2	90°
15	14.8	+0.2 -0.1	1.2	+0.2 -0.1	14.6	+0.2 -0.4	10		4.8		
16	15.9	+0.15 -0.25	1.0	+0.1 -0.2	15.7	+0.2 -0.6	7		3.8		
18	17.4	±0.35	1.4	±0.2	17.1	+0.3 -0.6	7		4.5		80°
20	19.3	±0.4	1.3		19.0	+0.4 -0.6	8		4.5		
22	21,3		1.3	20.8	8	4.5	±0.2		±0.2		
25	24,3		1.8	+0.5 -0.15	13.8	±0.5	14		6.5		
26,5	26.3		1.7	±0.2	25.8		13		6.2		90°
32	31.6		1.9		31,2	16	7.4				
36	35.6	2.0	35.2		+0.5 -0.8	18	8.4				
40	39.6		2.2		39.2		20	9.4			

Formwork Accessories

STEEL CHEMICAL COMPOSITION:								
Steel Grade	Element Mass Percentage, %							
	Carbon	Manganese	Silicon	Vanadium	Titanium	Chromium	Sulfur	Phosphorus
						no more than		
St3	0.14 - 0.22	0.4 - 0.65	0.05 - 0.17	-	-	0.30	0.050	0.040
25G2S	0.20 - 0.29	1.20 - 1.60	0.60 - 0.90	-	-	0.30	0.045	0.040
35GS	0.30 - 0.37	0.80 - 1.20	0.60 - 0.90	-	-	0.30	0.045	0.040
Steel 76	0.74 - 0.84	0.75 - 1.25	0.18 - 0.55	-	-	-	0.045	0.035

MECHANICAL PROPERTIES								
Plasticity category	Rolled product class	Electric heating temperature, °C	Yield strength $\sigma_{T(0.2)}$ N / mm ²	Ultimate tensile strength σ_{B} N / mm ²	Ratio of actual values $\sigma_{B} / (\sigma_{B, Z})$	Relative elongation, %		
						σ_{B}	σ_{p}	σ_{max}
						C_{min}		
Standard	A400	-	390	590	-	16.0	-	5.0
	A500	-	500	600	1.05	14.0	2.0	2.5
	A600	-	600	700	1.05	12.0	2.0	2.5
	A800	400	800	1000	-	8.0	2.0	2.5
	A1000	450	1000	1250	-	7.0	2.0	2.5

9Degrees German Super Plate & Anchor nuts are used to secure tie rods to the formwork:

a. **Nuts** are used in conjunction with tie rods. They secure the formwork panels together.

b. **Wing nuts** are specialized nuts with wings that allow for easy hand-tightening. They are commonly used in formwork systems.

Dimensions for 76 Steel Tie Rod - 9 Degrees Ø15.1mm		
Code	L (m)	Kg/pc
9D150	1.50	1.42
9D200	2.00	2.83
9D300	3.00	4.25
9D400	4.00	5.67
9D500	5.00	7.08
9D600	6.00	8.50



Formwork Accessories

Water Stoppers:

Water stoppers prevent water from seeping through formwork joints, ensuring a watertight concrete structure. Water stops, specifically those made from cast steel with a hexagonal section, are designed to provide a watertight seal in construction joints. Here are some key details about these types of water stops:

Key Features

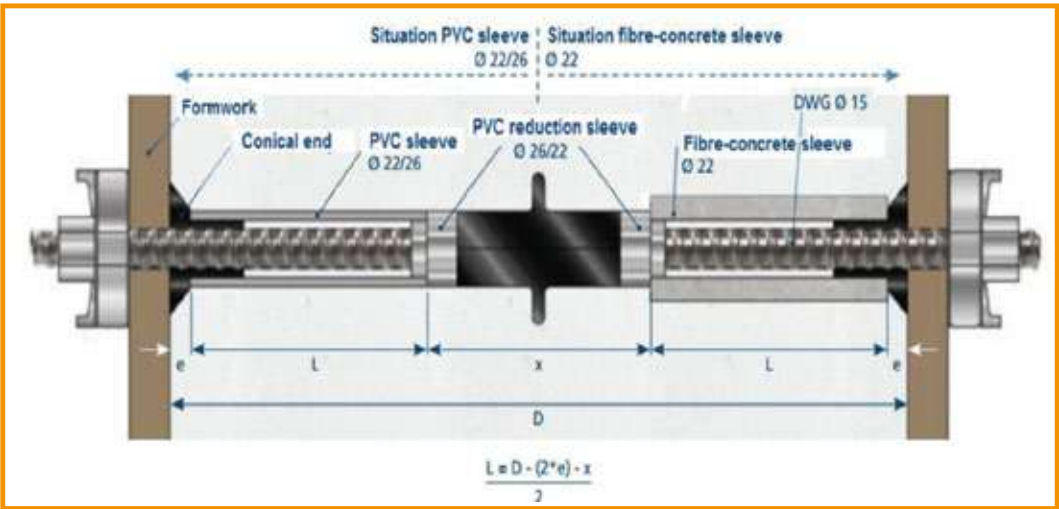
- **Material:** Cast steel, known for its durability and high strength.
- **Shape:** Hexagonal section, which helps in providing a secure fit and effective sealing.
- **Design:** Typically includes a central stop and special internal threads on both sides to accommodate tie rods.

Applications

- **Reinforced Concrete Walls:** Used to prevent water from seeping through construction joints in walls.
- **Basements and Foundations:** Essential for ensuring water tightness in below-ground structures.
- **Water Retaining Structures:** Ideal for tanks, reservoirs, and swimming pools to prevent leakage.
- **Tunnels and Culverts:** Provide a watertight seal in joints to prevent water penetration.

Technical Specifications

- **Service Load:** Can handle significant tensile forces, ensuring stability and durability.
- **Water Pressure Resistance:** Designed to withstand high water pressure, typically up to 7 bar (0.7 MPa)1.
- **Dimensions:** Available in various sizes to fit different tie rod diameters and construction requirements.



For tie rods Ø20 mm

There is no need for PVC reduction sleeve. The end spigots of the waterstop can directly be inserted into the plastic or fibre-concrete tube.

GERMAN WATERSTOP

Waterstop sleeve for 76 9Degrees Tie Rods					
Mechanical properties	Dimensions				
	Water stop sleeve for tie rods Ø15.1mm	Length Sleeve / mm	Dimensions Plate / mm	Dimensions Spigot / mm	Weight - Kg
PC15MWF - Waterstop sleeve for tie rods Ø15.1mm		110	65	26	0.52
Service load 90 kN					
Testing load 190 kN					
Resistance to water pressure 7 bar (= 0.7 MPa)					

Formwork Accessories

H20 Flange Clamps:

H20 flange clamps are essential components in formwork systems, particularly for securing H20 timber beams to steel walings. Here are some key details:

Key Features

- **Material:** Typically made from galvanized steel for durability and corrosion resistance.
- **Design:** Includes a U-bolt or hook design to securely fasten the H20 beams.
- **Dimensions:** Commonly, the effective width is around 120mm, and the overall length is approximately 190mm.
- **Weight:** Each clamp weighs about 1.025 kg.

Applications

- **Formwork Systems:** Used in large-area formwork systems like Top 50 to secure timber beams anywhere on the multi-purpose waling.
- **Construction Projects:** Ideal for various construction projects, including walls, columns, and slabs, where precise alignment and stability are crucial.

Benefits

- **Ease of Use:** Simple to install and adjust, ensuring quick setup and dismantling.
- **Versatility:** Can be used with different formwork systems and configurations.
- **Strength:** Provides a strong and reliable connection, ensuring the stability of the formwork structure.



Shuttering Clamps (C Clamps):

Shuttering clamps are versatile and can be used for various formwork applications. They securely hold formwork components together.

- Lengths range from 60cm to 120cm
- Thickness from 5mm to 8mm
- Width from 20mm to 32mm
- Hook from 16mm to 22mm



Formwork Accessories

Ductile Iron Casting Formwork Tie Nut Details				
	Material	Ductile Iron Casting	Packing	Bags or Pallets
	Diameter	D12mm D15mm D20mm	Ultimate Load	Over 180kn
	Plate Size	D70mm D80mm D90mm D100mm D120mm	Color	Gold, Silver or Black
	Application	Formwork Tie Rod System	Related Products	Tie Rod, Wing Nut, Climbing Steel Cone Nut, Hex Nut and etc

Ductile Iron Casting Formwork Wing Nut Details				
	Material	Ductile Iron Casting		
	Diameter	D15mm	Ultimate Load	Over 180kn
	Feature	One Arm Two Arms	Color	Gold, Silver or Black
	Application	Formwork Tie Rod System	Related Products	Tie Rod, Wing Nut, Climbing Steel Cone Nut, Hex Nut and etc.

Machining Weldable Formwork Hex Nut Connector				
	Material	45# Steel		
	Diameter	D15mm D20mm	Color	Black
	Surface Treatment	Galvanized or Black	Application	Concrete Formwork
	Related Products	Tie Rod, Tie Nut, Water Stop, Washer Plate		

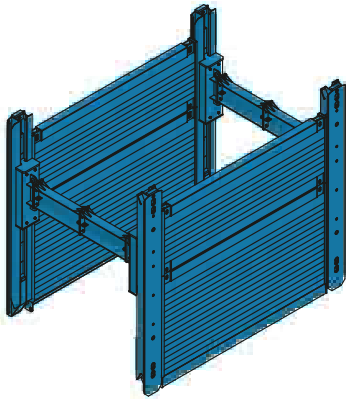
Ductile Iron Casting Formwork Tie Nut Details				
	Material	Carbon Steel		
	Size	120x120mm	Thickness	4.0-20.0mm
	Application	Formwork Tie Rod System	Related Products	Tie Rod, Wing Nut, Climbing Steel Cone Nut, Hex Nut and etc.

Shoring Formwork Trench Box For Pipeline Laying Construction

Recommended shoring depth: max. 4.00 m

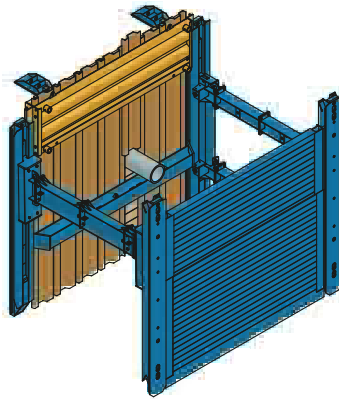
Single slide rail linear shoring

Rec. shoring depth: 4.00 m



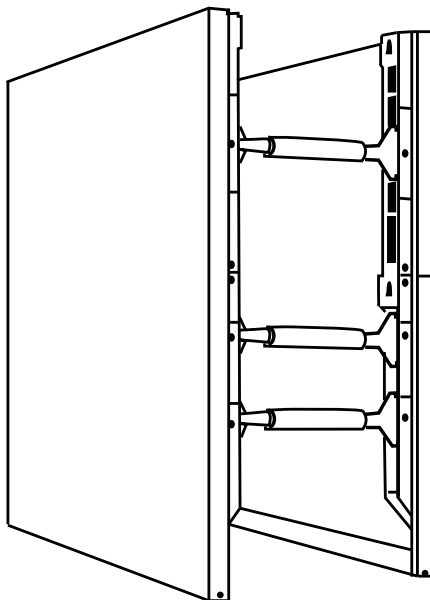
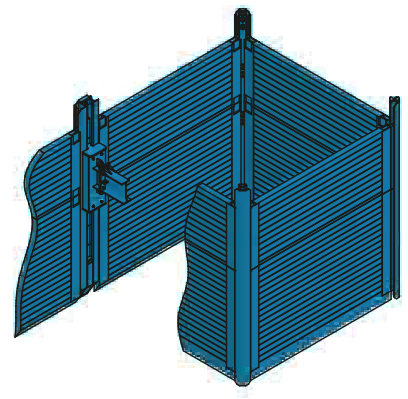
Single slide rail inner-city linear shoring

Rec. shoring depth: 4.00 m



Single slide rail corner shoring

Rec. shoring depth: 4.00 m



Shoring Formwork Trench Box

a topic that bridges the gap between safety and practicality in construction! Let's dive right in. Shoring is like the unsung hero of infrastructure development. It's that dependable friend who holds up the walls of an excavation, ensuring they don't crumble like a poorly baked cake. And when it comes to laying pipelines, trench boxes are the stars of the show. They typically have thicker walls (around 6 inches or more) and are made from high-quality P1 steel. Trench boxes are manufactured as per customer requirements.

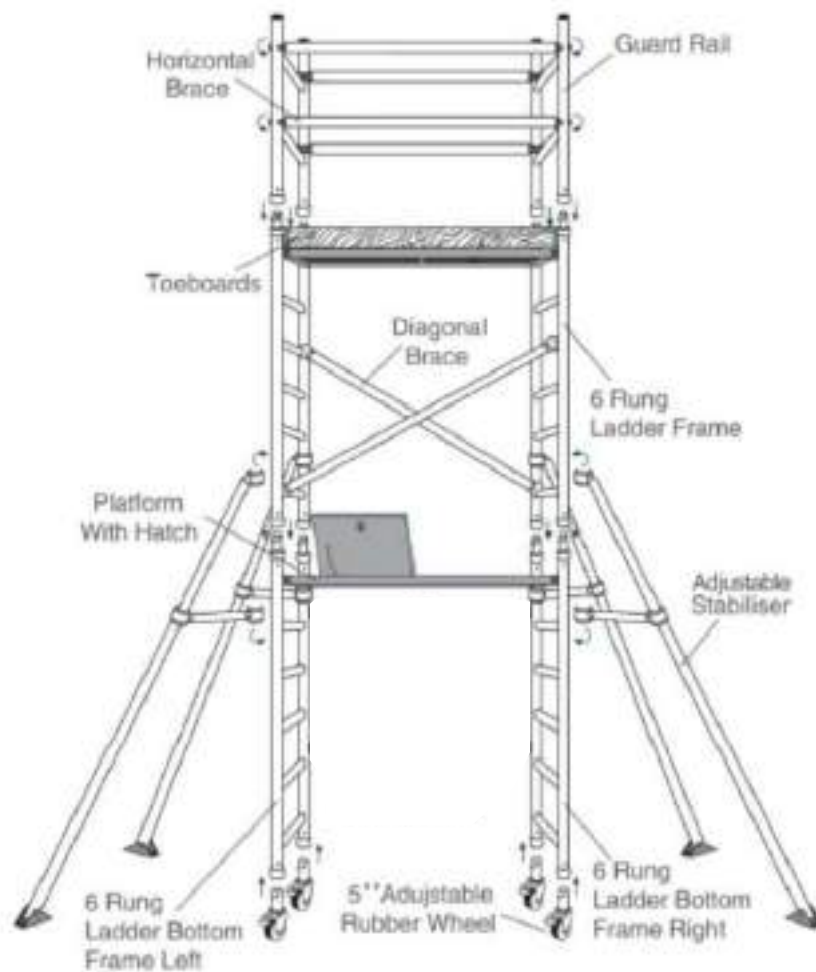
Aluminum Scaffolding Tower



9Degrees aluminum scaffolds are our lightest range of scaffolding. It is a high strength system, designed for quick and easy assembly. The aluminum is a flexible and low maintenance solution used for all jobsite work. Our Span towers are available in narrow and wide width and in heights ranging from 2.00m to 15.00m. They are compatible with Instant Upright, Alufase and Vault Scaffolding



Aluminum Scaffolding Tower



NO TOOLS REQUIRED

From adjustable legs to toeboards, no tools is required to build a tower; brace hooks snap into position with a large 225° contact area to give a firm grip. Frames use interlock clips and outriggers are secured with clamps



COLOR-CODED BRACES

Our braces have a color-coded ring at each end for quick identification and faster assembly time.



SAFETY FACTOR

The load capacity is based on a 4:1 safety factor in conformity with OSHA 29 CFR PT.1926 standard, ANSI/ASSE A10.8 - 2011 and CSA S269.2 standard



DURABILITY & QUALITY

Spans 300 and 400 mobile tower systems with cold-formed joint, designed and built to provide three times the strength and durability of traditional welded joints.



FLUTED FRAME RUNGS

Provides better grip and increases slip resistance when climbing frames during assembly or once erected.

DOUBLE WIDTH ALUMINUM MOBILE SCAFFOLD TOWER



Technical Data (Dimensions in meter)
Safe Working Load: 250 Kgs Per Platform, 750 Kgs Per Tower / Length - 2.5m, Width - 1.45m

Tower Code	AST-D12	AST-D22	AST-D32	AST-D42	AST-D52	AST-D62	AST-D72	AST-D82	AST-D92	AST-D102	AST-D112	AST-D122	AST-D132	AST-D142
TOWER HEIGHT	2.2M	3.2M	4.2M	5.2M	6.2M	7.2M	8.2M	9.2M	10.2M	11.2M	12.2M	13.2M	14.2M	15.2M
PLATFORM HEIGHT	1.2M	2.2M	3.2M	4.2M	5.2M	6.2M	7.2M	8.2M	9.2M	10.2M	11.2M	12.2M	13.2M	14.2M
WORKING HEIGHT	3.2M	4.2M	5.2M	6.2M	7.2M	8.2M	9.2M	10.2M	11.2M	12.2M	13.2M	14.2M	15.2M	16.2M

Accessories

LADDER FRAME	2.0M	1	1	2	2	3	3	4	4	5	5	6	6	7	7
SPAN FRAME	2.0M	1	1	2	2	3	3	4	4	5	5	6	6	7	7
GUARDRAIL	1.0M	0	2	0	6	0	2	0	2	0	2	0	2	0	2
H-BRACE	2.5M	4	6	6	8	8	8	8	10	10	10	12	12	12	14
D-BRACE	2.7M	2	2	6	0	10	12	14	16	18	20	22	24	26	28
STABALIZER	2.0M	0	0	0	4	4	0	0	0	0	0	0	0	0	0
STABALIZER	3.0M	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STABALIZER	4.5M	0	0	0	0	0	0	4	4	4	4	0	0	0	0
STABALIZER	6.0M	0	0	0	0	0	0	0	0	0	0	4	4	4	4
CASTOR WHEEL	6	4	4	4	4	4	4	0	4	0	0	0	0	0	0
CASTOR WHEEL	8	0	0	0	1	1	1	4	4	4	4	4	4	4	4
PLATFORM PLAIN		1	1	1	1	1	1	1	1	1	1	1	1	1	1
PLATFORM TRAPDOOR		1	1	1	1	1	1	1	1	1	1	1	1	1	1
TOE BOARD		1	1	1	1	1	1	1	1	1	1	1	1	1	1
SNAP PIN		0	4	4	8	8	12	12	16	16	20	20	24	24	28

Accessories Advisable for more safety

PLATFORM TRAPDOOR	0	0	0	0	1	1	2	3	3	3	4	4	4	4
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SINGLE WIDTH ALUMINUM MOBILE SCAFFOLD TOWER



Technical Data (Dimensions in meter)
Safe Working Load: 225 Kgs Per Platform, 700 Kgs Per Tower / Length - 1.85m, Width - 0.85m

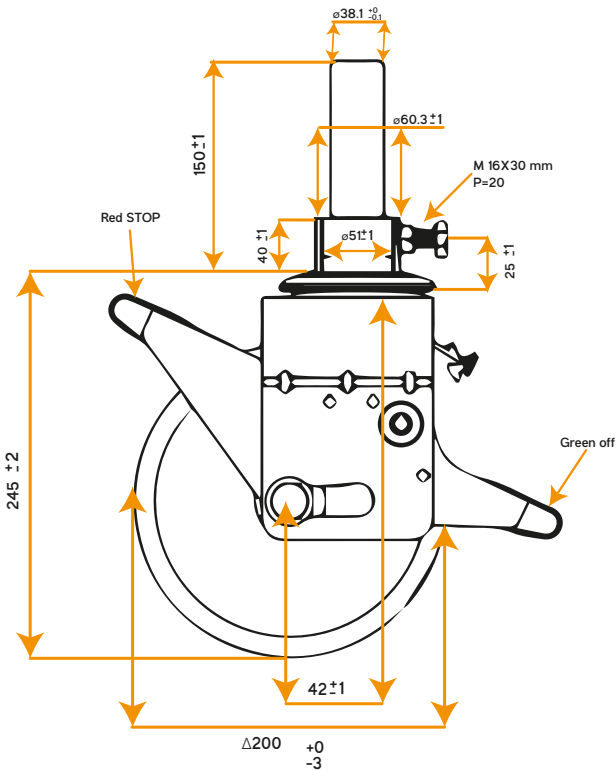
Tower Code	AST-S12	AST-S22	AST-S32	AST-S42	AST-S52	AST-S62	AST-S72	AST-S82	AST-S92	AST-S102	AST-S112
TOWER HEIGHT	2.2M	3.2M	4.2M	5.2M	6.2M	7.2M	8.2M	9.2M	10.2M	11.2M	12.2M
PLATFORM HEIGHT	1.2M	2.2M	3.2M	4.2M	5.2M	6.2M	7.2M	8.2M	9.2M	10.2M	11.2M
WORKING HEIGHT	3.2M	4.2M	5.2M	6.2M	7.2M	8.2M	9.2M	10.2M	11.2M	12.2M	13.2M

Accessories

LADDER FRAME	2.0M	1	1	2	2	3	3	4	4	5	5	6
SPAN FRAME	2.0M	1	1	2	2	3	3	4	4	5	5	6
GUARDRAIL	1.0M	0	2	0	2	0	2	0	2	0	2	0
H-BRACE	1.8M	4	6	6	6	8	8	8	10	10	10	12
D-BRACE	2.05M	2	2	4	6	8	8	10	12	12	14	16
STABALIZER	2.0M	0	0	0	0	0	0	0	0	0	0	0
STABALIZER	3.0M	0	0	0	4	4	4	0	0	0	0	0
STABALIZER	4.5M	0	0	0	0	0	0	4	4	4	4	4
STABALIZER	6.0M	0	0	0	0	0	0	0	0	0	0	4
CASTOR WHEEL	6	4	4	4	0	0	0	0	0	0	0	0
CASTOR WHEEL	8	0	0	0	4	4	4	4	4	4	4	4
PLATFORM PLAIN		1	1	1	1	1	1	1	1	1	1	1
PLATFORM TRAPDOOR		1	1	1	1	1	1	1	1	1	1	1
TOE BOARD		1	1	1	1	1	1	1	1	1	1	1
SNAP PIN		0	4	4	8	8	12	12	16	16	16	16

Accessories Advisable for more safety

PLATFORM TRAPDOOR	0	0	0	0	1	1	2	3	3	3	3
	0	4	DB-2 STB-4	0	DB-4	DB-6	DB-6	DB-8	DB-8	DB-8	DB-8



Benefits of Using Castor Wheels

Mobility:

Easily move the scaffolding tower around the worksite without dismantling it.

Stability:

Lockable brakes ensure the tower stays in place during use

Versatility :

Suitable for various surfaces, including concrete, asphalt, and indoor flooring.



STANDARD CASTOR WHEELS		
Size	Material	Features
Typically, 4 to 8 inches in diameter	Heavy-duty rubber or polyurethane	Lockable brakes for stability, 360-degree swivel for easy maneuverability

HEAVY-DUTY CASTOR WHEELS		
Size	Material	Features
8 to 12 inches in diameter	Reinforced rubber or polyurethane with a steel core	Enhanced load capacity, double-locking mechanism for added safety

Adjustable Castor Wheels		
Size	Material	Features
Adjustable height to accommodate uneven surfaces	High-strength aluminum or steel with rubber wheels	Height adjustment, lockable brakes, and 360-degree swivel

Safety Net System

Overview

A Safety Net System is designed to protect workers, equipment, or structures by catching or preventing falls, debris, or objects in construction, industrial, or event setups. They are widely used in construction, maintenance, and engineering industries to enhance safety and compliance with regulations.

Key Components of a Safety Net System

- **Netting Material:** Typically made from high-strength synthetic fibers like polypropylene or nylon, ensuring durability and impact resistance.
- **Mesh Size:** Determines the size of objects that can be safely caught. Smaller meshes are used to prevent debris falls, while larger ones are for personnel fall protection.
- **Perimeter Systems:** Nets designed to protect the edges of elevated worksites.

Types of Safety Net Systems

1. Fall Protection Nets:

- Installed beneath work areas to catch workers in case of a fall.
- Used in bridge construction, high-rise projects, and shipy

2. Debris Nets:

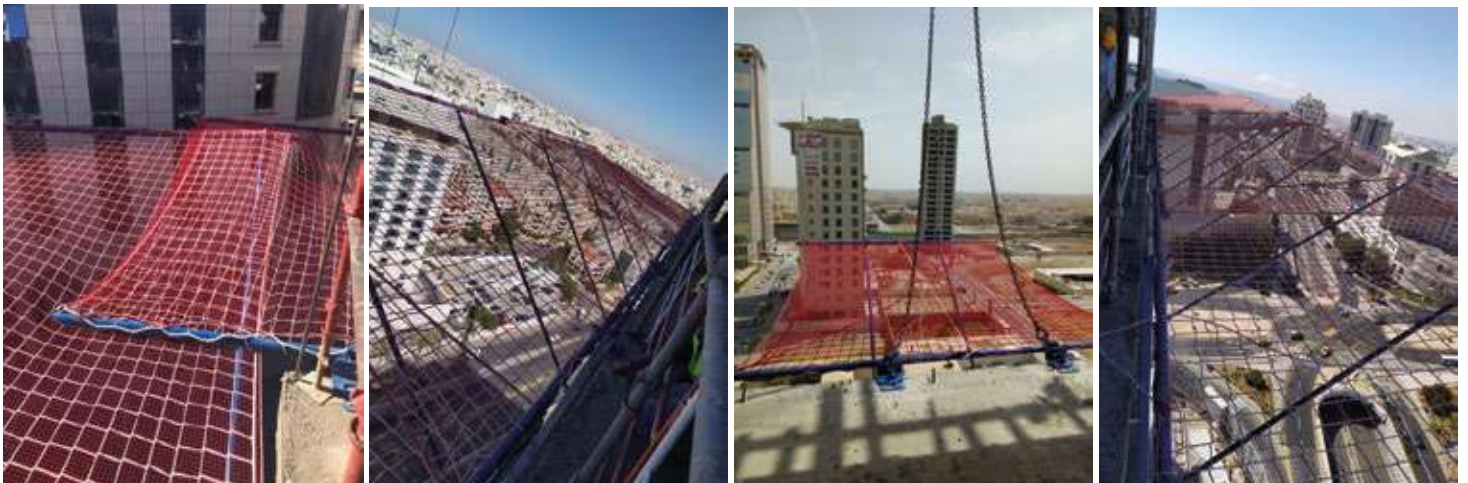
- Used to contain falling debris or tools, protecting areas below.
- Common in scaffolding and renovation work.

3. Perimeter Safety Nets:

- Installed around the edges of a site or scaffolding for edge protection.

4. Temporary Fence Nets:

- Used in event management and temporary construction sites to restrict access.



Safety Net System

Advantages

- Enhanced Safety: Minimizes fall-related injuries and fatalities.
- Cost-Effective: Reduces downtime caused by accidents.
- Versatility: Adaptable to different project sizes and requirements.
- Durability: Designed to withstand heavy loads and adverse weather conditions.
- Regulatory Compliance: Meets international safety standards, such as OSHA, EN, and ANSI

Applications

- Construction sites (high-rise buildings, bridges, scaffolding).
- Industrial maintenance (refineries, warehouses).
- Event setups (sports arenas, temporary stages).
- Shipbuilding and offshore projects.

Regulations and Standards

- OSHA (Occupational Safety and Health Administration): Sets standards for fall protection systems
- EN 12631-1: European standards for safety net construction and performance.
- ANSI/ASSP Z359: Fall protection and arrest system standards

Standard Sizes

1. Fall Protection Nets

Dimensions:

- Standard widths: 3m x 6m, 6m x 10m.
- Larger custom sizes available based on project needs.

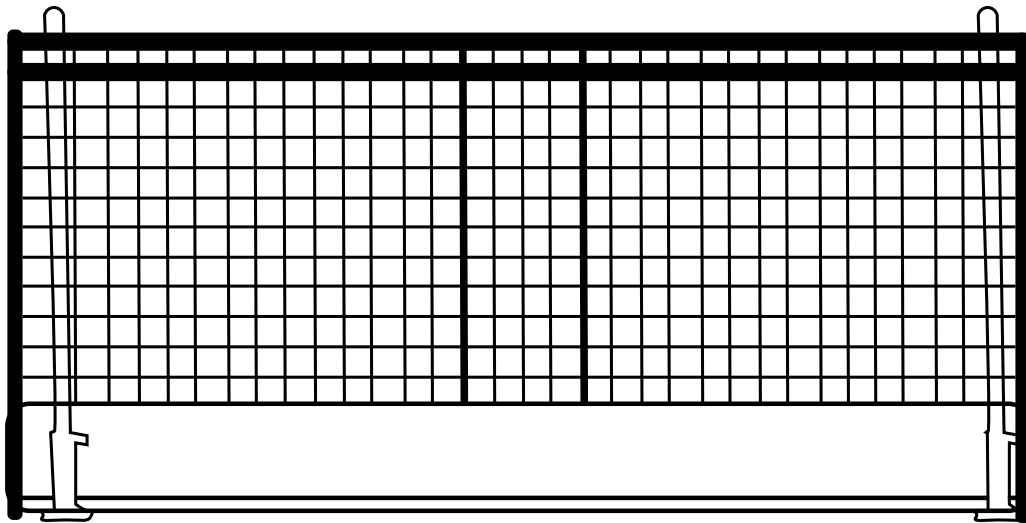
2. Debris Nets

Dimensions:

- Common sizes: 2m x 50m, 3m x 50m.
- Roll lengths are adjustable depending on site requirements.



Safetyboard Edge Protection System



Product Details & Specifications

Main Components

- **Safety Panels:** Made of durable, impact-resistant material (steel mesh, aluminum, or composite).
- **Posts & Clamps:** Adjustable and designed for quick installation on various structures (slabs, beams, and scaffolding).
- **Toe Boards:** Prevent objects from falling and enhance worker safety.
- **Fixing Mechanisms:** Options include slab clamps, scaffold attachments, and bolt-down bases for different site applications.

Key Features

- **High Durability:** Resistant to impact, corrosion, and weather conditions.
- **Quick Installation:** Modular design allows for fast setup and dismantling.
- **Versatility:** Compatible with concrete structures, steel beams, and scaffolding systems.
- **Customizable:** Available in different heights, materials, and finishes.

Technical Specifications

Panel Height: Typically, 1.2m – 1.5m

Panel Width: 2.5m – 3.0m

Material: Galvanized steel, or high-strength composite

Weight: 1525-kg per panel

Wind Load Resistance: Tested up to 1.0 kN/m²

Impact Resistance: Meets Class A or B impact standards under EN 13374

Compliance & Safety Standards

The Safety Board Edge Protection System complies with international safety regulations to ensure maximum protection:

European Standards (EN):

- **EN 13374:** Temporary edge protection systems – Classes A, B, and C for different worksite conditions.
- **EN 1263-1:** Safety nets for construction applications.



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