

SCAFFOLDING & FORMWORK SYSTEM PRODUCTS

QUALITY PRODUCT SAFETY ASSURED
Global Scaffolding and
Formwork Supply / Steel Board / G.I.Pipe
All Accessories



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INTRODUCTION

Cuplock is a multipurpose system suitable for access and support in all types of construction of building & civil engineering projects; it is fully painted/galvanized. C-Cuplock system is suitable for providing general access and supporting vertical loads. It can be used to create a huge range of access and support structures, staircase towers, circular scaffolds, loading towers and mobile towers. This manual has been designed to provide comprehensive details of components and guidance on the design and erection of C-Cuplock systems.

Connection and Locking Procedure

The main feature of C-Cuplock is the unique node locking method which allows up to four horizontal (ledgers) members to be fastened to a vertical standard in one action through two cups, lower cups welded in the standard tube at every 500 mm intervals and upper cups sliding along standard tube. The ledger ends are put in the lower cup, then the upper cup is lowered down and locking by a hammer.

Dimension

All vertical standards and ledgers tubes are 48.3mm diameter with 3.00 or 3.20 mm thickness.

C-Cuplock Standards available in lengths from 1.00m up to 3.00m.

C-Cuplock Ledgers available in lengths from 0.60m up to 2.50m.

Safety

Cuplock has safety built-in, as it is erected to a recognized configuration in a carefully developed sequence to work at every stage.

Cuplock scaffolds provide clear uninterrupted working platforms without obstructions from diagonal bracing across the deck in the majority of cases.

Safe Working Load

Standard safe working load up to 7.50 ton according to standard unbraced length and tube wall thickness.

Handling and Storage

Ease of handling through its light weight.

Minimal space requirements for storage.

Saving Time and Cost

Cuplock provides major savings in erection and dismantling durations therefore minimizes project costs .



Durability

C-Cuplock system has a long working life and durability with low maintenance.

Fully painted/galvanized finishing protecting components from corrosion and rust.

C-Cuplock system in three applications

- Falsework system (Support structures).
- Scaffolding system.
- Early striking system (Supporting floor slabs).

1 C-Cuplock Falsework Application

(Support Structures)

C-Cuplock Falsework system is suitable for support structures applications through the following.

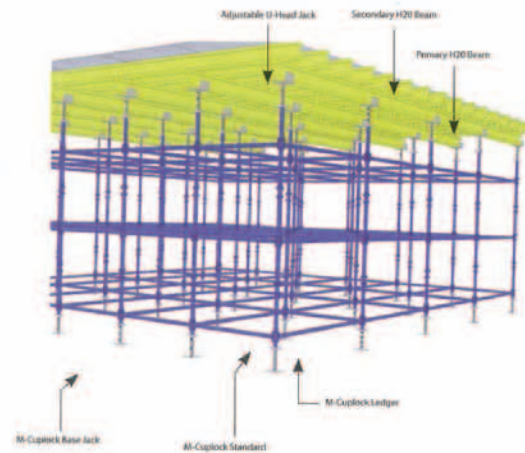
High standard load capacity.

Range of components that gives the system capability to tackle virtually any support application.

Formwork support wide range grid variations that can be created to suit the loading requirements and any structure types and heights.

Ability to use different types of main and secondary beams with C-Cuplock.

(Timber Aluminum Steel)



2 Scaffolding application

C-Cuplock Scaffolding Application.

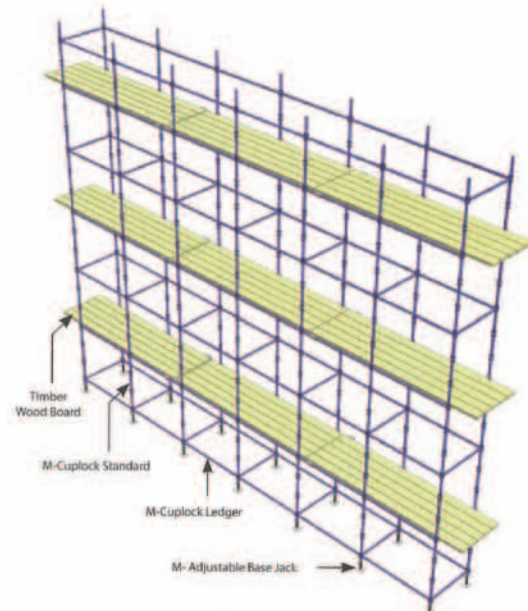
C-Cuplock scaffolding system is multipurpose steel scaffold for general access and supporting vertical loads through the following:

Safe working loads on platforms will vary between 0.75kN and 3kN per square meter depending on the configuration of the scaffold.

C-Cuplock scaffolding meet the requirements of the international standard for health and safety.

C-Cuplock scaffolding is compatible with any scaffolding (...accessories (stairs, boards, wheels, tie.

All components are designed to be light weight and easily assembled.



3 Early striking application

C-Cuplock Early Striking Application

(Supporting Floor Slabs)

C-cuplock Early striking system is suitable for support floor slabs through the following:

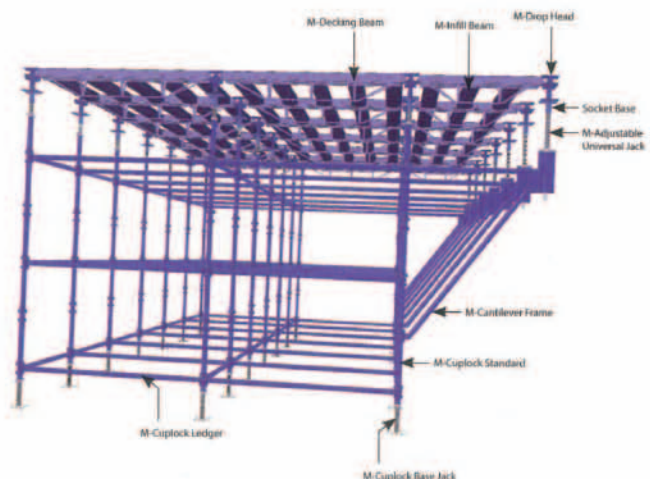
High loading capacity for standard, decking beams and infill.

Suitable for any type of floor slabs.

All components are manufactured to a very close tolerance.

All components are engineered to be light weight and easily assembled.

Early Striking save time and cost through a technique where by the formwork is removed 3 to 4 days after pouring a slab.



STANDARD COMPONENTS

C-Cuplock standard are introduced in five basic sizes (1000mm, 1500 mm, 2500 mm, and 3000 mm) lengths.

C- Cuplock standards are manufactured from 48.3mm O.DTube with 3mm and 3.2 mm thickness.

The lower cups are welded to standard or 500 mm intervals.

The upper cups Morvable Cups are used to locking up to 4 ledgers or one node.

The lower bottom cup is welded at 80mm from the bottom end of the standard and the highest bottom cup is welded or 420 from the upper end R of the standard.



CUPLOCK STANDARDS

Cuplock Standard Thk.3.20 mm

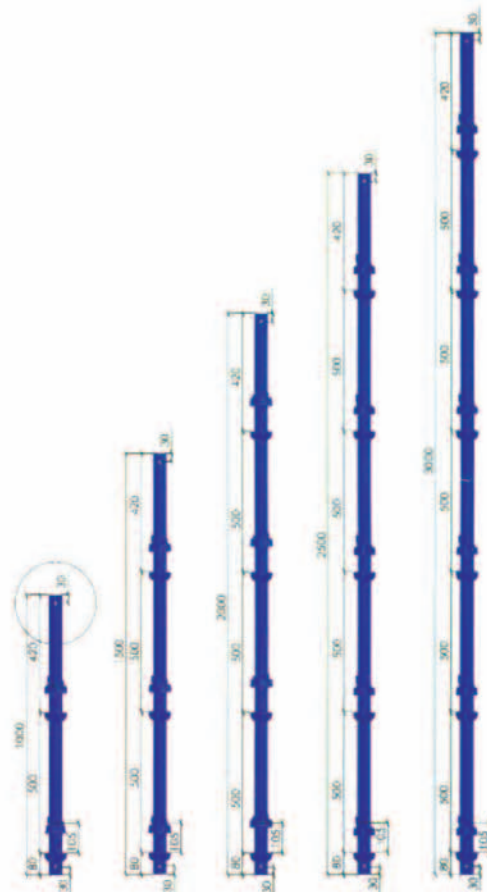
- Cuplock Standard 100 cm
- Cuplock Standard 150 cm
- Cuplock Standard 200 cm
- Cuplock Standard 250 cm
- Cuplock Standard 300 cm

Cuplock Standard Thk.3.20 mm

- Cuplock Standard 100 cm
- Cuplock Standard 150 cm
- Cuplock Standard 200 cm
- Cuplock Standard 250 cm
- Cuplock Standard 300 cm

Cuplock Standard Thk.3.20 mm

- EN-10219 100 cm
- EN-10219 150 cm
- EN-10219 200 cm
- EN-10219 250 cm
- EN-10219 300 cm



LEDGER COMPONENTS

C-Cuplock ledgers are used as the main horizontal connecting main horizontal connecting members for C-cuplock system.

C-Cuplock ledger are introduced in large varieties to meet the requirements.

C-Cuplock ledger are manufactured from 48.3mm O.D. Tube with 3.2mm and 3.2 mm thickness.

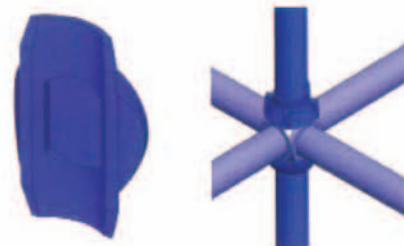
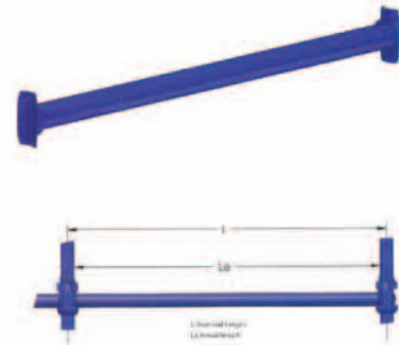
C-Cuplock ledger ends are formed with circular profile and welded to ledger tube.

C-Cuplock ledger ends meet with the bottom cup of the standard and locked in place by the upper case (corresponding lock)

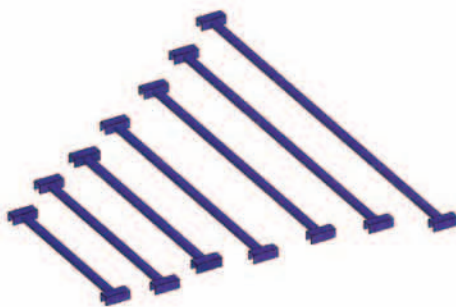


Cuplock Ledger Thk 3.20 mm Weight Kg

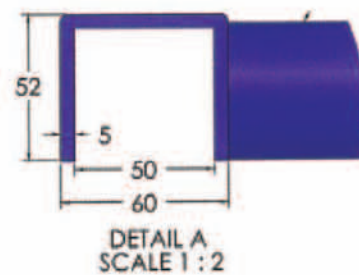
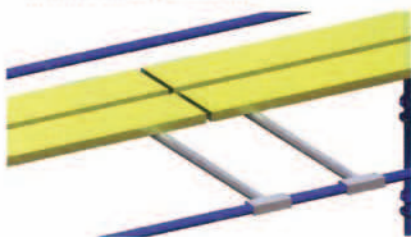
Cuplock Ledger 250 cm	8.30
Cuplock Ledger 180 cm	6.80
Cuplock Ledger 160 cm	6.05
Cuplock Ledger 130 cm	5.05
Cuplock Ledger 125 cm	4.35
Cuplock Ledger 120 cm	4.05
Cuplock Ledger 100 cm	3.50
Cuplock Ledger 90 cm	3.00
Cuplock Ledger 60 cm	2.35



TRANSOM COMPONENTS



Intermediate Transoms



C- ADJUSTABLE U- HEAD JACKS / BASE JACKS

C- Adjustable U- Head Jacks Are Made Of AU Shape Steel Plate, Screw Jack And Steel Handle.

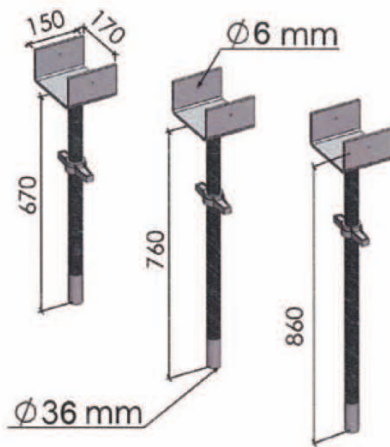
C-Adjustable U- Head Jacks Are Available In Two Types (Hollow And Slolid).

C-Adjustable U- Head Jacks Are Providing Support For Primary Beams.

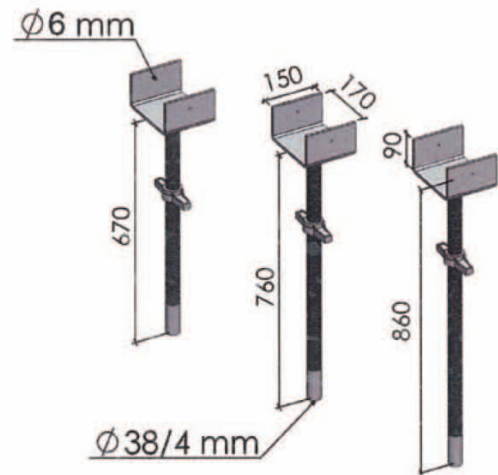
(Traditional Timber, Steel,h20 Beam And Aluminum Beam)

C-Adjustable U- Head Jacks Are Inserting Into The Top Of The C-Cuplock Standards.

C-ADJUSTABLE U- HEAD JACKS SOLID



C-ADJUSTABLE U- HEAD JACKS HOLLOW



Socket Base

The Socket Base Is Used In Combination With The C-Adjustable Universal Jack And Is Drilling To Permit The Insertion Of Securing Bolr If Required.

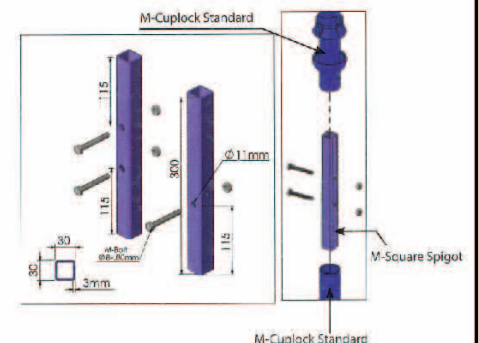
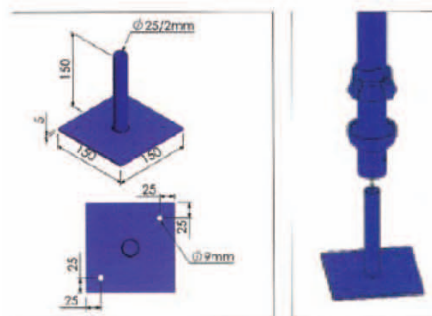
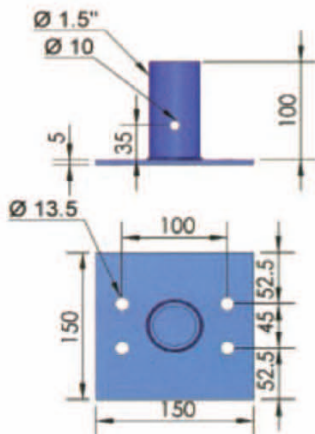
Accessories Component

C-Base Plate

C-Base plate provides a flat support for C-Cuplock Structure
C-Base olate uses as simple support for c-cuplock structure in case of no need adjustable level.

C-Square spigot

Used to join one C-Cuplock standard to another coaxially. Bolt is placed transversly through the spigot and C-Cup lock standard to prevent the spigot from pulling out of standard.

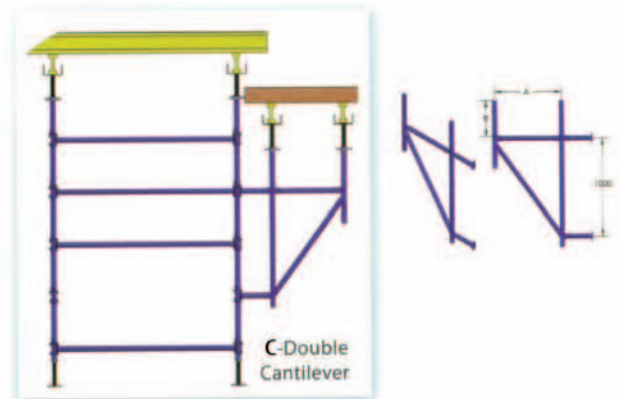


ACCESSORIES COMPONENTS

C-Double Cantilevers

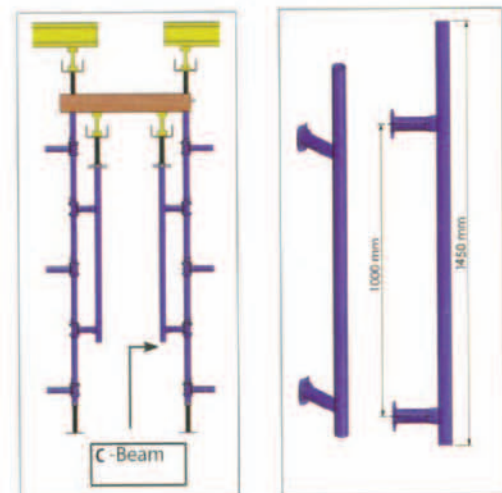
- To Provide Vertical support for edge beams of slab and transfer the applied load to C-Cuplocks Standard.
- C-Double Cantilever have two blade ends connected to standard to ensure the fixed connection with C-Cuplock verticle Standard.

Cantilerer Frame 1.0m / 1.5m (L)



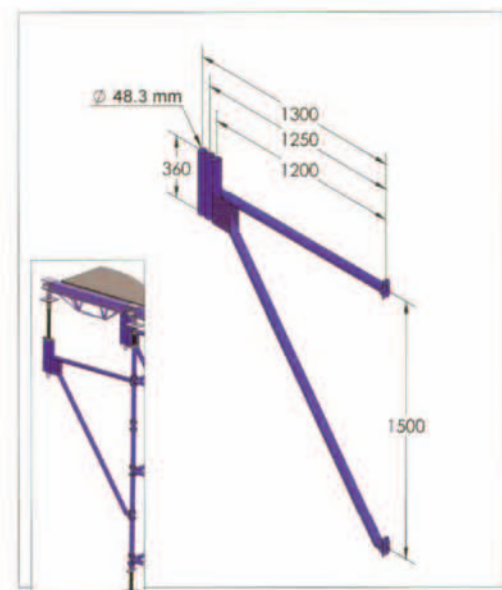
C-Beam Bracket

- To Provide Vertical support for internal beams of slab and transfer the applied load to C-Cuplock Standard.
- C-Beam Bracket have two blade ends connected to standard.



























C-Cantilever Frame

- Used to provide vertical support for decking beams or formwork at edge of slab.
- Cantilever Frames have two blade ends connected to standard.
- Cantilever Frames accept jacks in three positions, suitable for dimensions of 1200 mm, 1250 mm and 1300 mm.



SCAFFOLDING COUPLERS

			
British Pressed Double Coupler 48.3mm/0.83-0.87kg ADT001KJEN0004	British Pressed Swivel Coupler 48.3mm/1.02-1.05kg ADT001KJEN0003	British Sleeve Coupler 48.3mm/1.0kg ADT001KJEN0002	Pressed Putlog Coupler 48.3mm/0.62kg ADT0001KJEN0007
			
110° Pressed Swivel Coupler 48.6mm/0.58-0.65kg ADT001KJJI0003	110° Pressed Double Coupler 48.6mm/0.58-0.65kg ADT001KJJI0005	90° Pressed Swivel Coupler 48.6mm/0.59-0.65kg ADT001KJK00002	90° Pressed Double Coupler 48.6mm/0.59-0.65kg ADT001KJK00007
			
JIS Swivel Girder Clamp 48.6mm/0.98kg ADT001KJJI0004	Pressed Limpet Coupler 0.32kg ADT001KJEN0006	Ladder Clamp 48.3mm/0.5kg ADT001KJEN0001	British Inner Joint Pin 48.3mm/0.72kg ADT001KJEN00008
			
British Drop Forged Double Coupler 48.3mm/0.97-1.05kg ADT001KJEN0013	British Drop Forged Swivel Coupler 48.3mm/1.12-1.25kg ADT001KJEN0012	Drop Forged Half Coupler 48.3mm/0.9kg ADT001KJAM0013	Drop Forged Joint Pin 48.3mm/1.1kg ADT001KJEN-17
			
Girder Coupler 48.3mm/1.5kg ADT001KJEN0010	Board Retaining Coupler 48.3mm/0.61-0.63kg ADT001KJEN0009	Ladder Clamp 48.3mm/0.50kg ADT001KJEN0014	Drop Forged Putlog Coupler 48.3mm/0.63kg ADT001KJEN0015
			
US Drop Forged Double Coupler 1.5kg ADT001KJAM0002	US Drop Forged Swivel Coupler 1.8kg ADT001KJAM0001	German Drop Forged Double Coupler 1.07kg ADT001KJGE0002	German Drop Forged Swivel Coupler 1.27kg ADT0001KJGE0001

HOT DIPPED GALVANIZED PIPE

Code	Outer Diameter		Wall Thickness	Length
	inch	mm	mm	mm
ADTO02GCGL0022	1/2"	21.3	2.6	6000
ADTO02GCGL0023	3/4"	26.7	2.6	6000
ADTO02GCGL0024	1"	33.4	3.2	6000
ADTO02GCGL0025	1 1/4"	42.2	3.2	6000
ADTO02GCGL0026	1 1/2"	48.3	3.2	6000
ADTO02GCGL0027	2"	60.3	3.6	6000
ADTO02GCGL0028	2 1/2"	73	3.6	6000
ADTO02GCGL0029	3"	88.9	4.0	6000
ADTO02GCGL0030	4"	114.3	4.5	6000
ADTO02GCGL0031	5"	141.3	4.8	6000
ADTO02GCGL0032	6"	168.3	4.8	6000
ADTO02GCGL0033	8"	219.1	5.4	6000



Outer Diameter:	21.3~406.4mm (1/2"~16")
Wall Thickness:	1.2~20.0mm
Length:	6~12m
Zinc coating:	230~550g/m ²

Steel Grade:	Q195, Q235, Q345	Gr.A, Gr.B, Gr.C	S235JR, S275JR, S355JR	S235JRH, S275J2H, S355J2H	STK400, STK500	Gr.A, Gr.B
Standard:	GB/T3091-2008	BS1387-1985	DIN EN10025	EN10219	JIS G3444:2004	ASTM A53
Surface finish:	hot-dipped galvanized, electro galvanized, threaded, socket, engraved, groove, etc.					
Usage:	Construction, water pipe, gas pipe, etc.					

PRE-GALVANIZED PIPE

Code	Outer Diameter		Wall Thickness	Length
	inch	mm	mm	mm
ADTO02GCDG0001	1/2"	21.3	0.9	6000
ADTO02GCDG0002	3/4"	26.7	1.4	6000
ADTO02GCDG0003	1"	33.4	1.6	6000
ADTO02GCDG0005	1 1/4"	42.2	1.4	6000
ADTO02GCDG0011	1 1/2"	48.3	2.1	6000
ADTO02GCDG0012	2"	60.3	1.4	6000
ADTO02GCDG0015	2 1/2"	73	2.1	6000



Outer Diameter:	19~100mm
Wall Thickness:	0.8~2.3mm
Length:	6~12m
Zinc coating:	80~120g/m ²

Steel Grade:	Q195, Q235, Q345	Gr.A, Gr.B, Gr.C	S235JR, S275JR, S355JR	S235JRH, S275J2H, S355J2H	STK400, STK500	Gr.A, Gr.B
Standard:	GB/T3091-2001	BS1387-1985	DIN EN10025	EN10219	JIS G3444:2004	ASTM A53
Surface finish:	pre-galvanized, threaded, socket, engraved, etc.					
Usage:	Construction, greenhouse, EMT/IMC pipe, etc.					

STEEL BOARD

Available Size: 0.5m to 4m (other sizes are available on request)

Material: Pre-galvanized steel strip

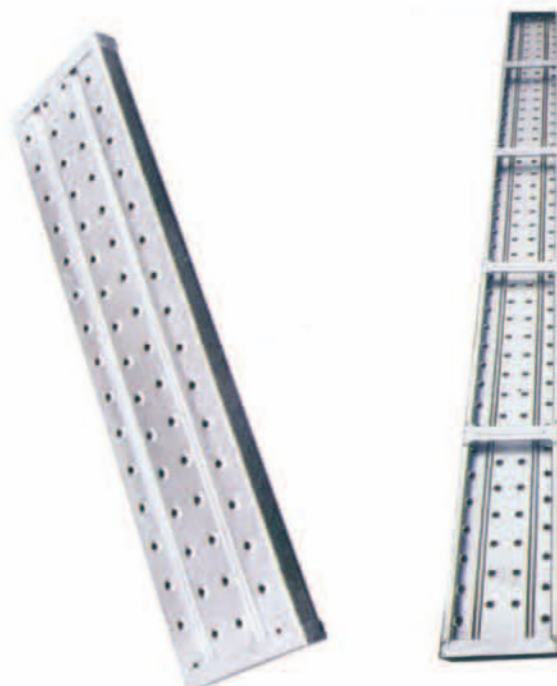
Compliance Standard: BS EN 12811-1:2003,
EN1004:2004 AS/NZS1577:2013

TYPE 1 STEEL PLANK

Code	Width x Height x Thickness x Length	Weight
ADTO01TBAB0024	210x 45 x 1.2 x 1000mm	3.6kg
ADTO01TBAB0026	210 x 45 x 1.2 x 2000mm	7.0kg
ADTO01TBAB0028	210 x 45 x 1.2 x 3000mm	10.4kg
ADTO01TBAB0029	210 x 45 x 1.2 x 4000mm	13.8kg

ADTO01TBAB0085	240 x 45 x 1.2 x 1000mm	4.0kg
ADTO01TBAB0087	240 x 45 x 1.2 x 2000mm	7.7kg
ADTO01TBAB0089	240x 45 x 1.2 x 3000mm	11.4kg
ADTO01TBAB0090	240 x 45 x 1.2 x 4000mm	15.1kg

ADTO01TBAB0148	250 x 50 x 1.2 x 1000mm	4.2kg
ADTO01TBAB0150	250 x 50 x 1.2 x 2000mm	8.1kg
ADTO01TBAB0152	250 x 50 x 1.2 x 3000mm	12.0kg
ADTO01TBAB0153	250 x 50 x 1.2 x 4000mm	15.9kg



ADTO01TBAB0200	250 x 40 x 1.2 x 1000mm	4.0kg
ADTO01TBAB0202	250 x 40 x 1.2 x 2000mm	7.7kg
ADTO01TBAB0204	250 x 40 x 1.2 x 3000mm	11.4kg
ADTO01TBAB0205	250 x 40 x 1.2 x 4000mm	15.2kg

Code	Width x Height x Thickness x Length	Weight
ADTO01TBAB0258	225 x 38 x 1.5 x 1000mm	4.5kg
ADTO01TBAB0260	225 x 38 x 1.5 x 2000mm	8.7kg
ADTO01TBAB0262	225 x 38 x 1.5 x 3000mm	13.0kg
ADTO01TBAB0286	225 x 38 x 1.5 x 4000mm	17.2kg

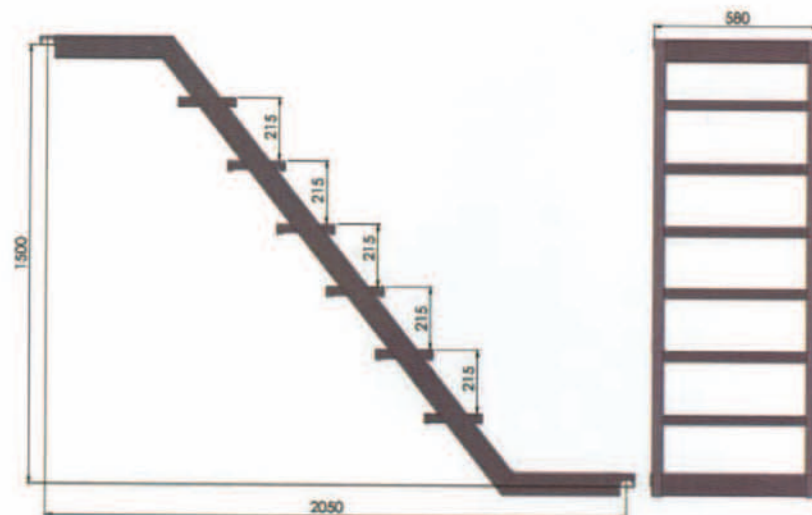
ADTO01TBAB1046	225 x 38 x 1.8 x 1000mm	5.3kg
ADTO01TBAB1048	225 x 38 x 1.8 x 2000mm	10.4kg
ADTO01TBAB0268	225 x 38 x 1.8 x 3000mm	15.4kg
ADTO01TBAB1051	225 x 38 x 1.8 x 4000mm	20.5kg

ADTO01TBAB0270	225 x 38 x 2.0 x 1000mm	5.8kg
ADTO01TBAB0272	225 x 38 x 2.0 x 2000mm	11.5kg
ADTO01TBAB0274	225 x 38 x 2.0 x 3000mm	17.1kg
ADTO01TBAB0275	225 x 38 x 2.0 x 4000mm	22.7kg



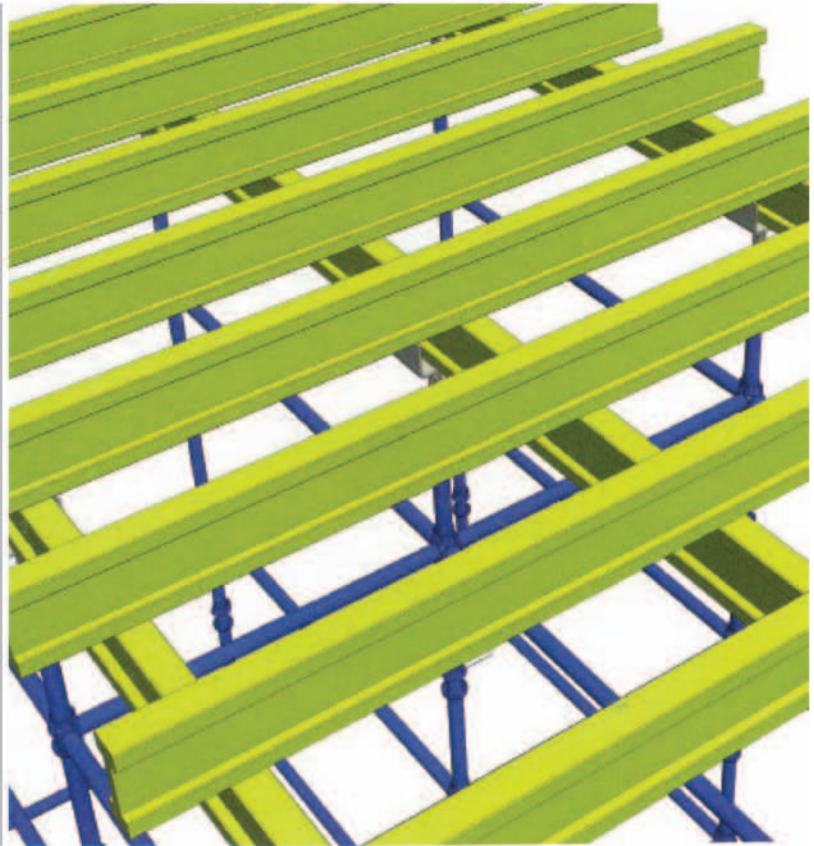
C-Cuplock Stair case

The C-Cuplock staircase Tower is mainly built up of standard C-Cuplock components to improve site access and more effective movement of persons and rapid erection due to a small number of components.



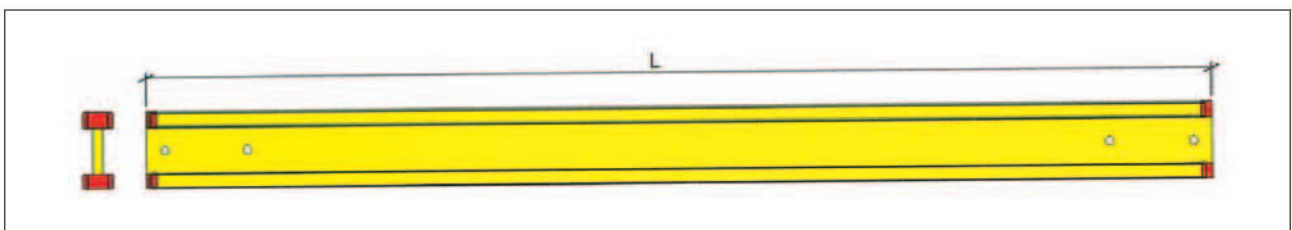
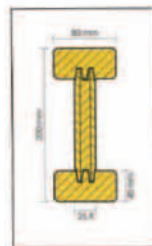
H20 BEAMS

- The H20 Formwork Timber Beam is a solid I-beam used for concrete formwork construction.
- The height of beam is 200mm and available in different standard lengths.
- The Webs made of 3 ply laminated solid wood panels ensuring use in all climate zone.
- The chords are made of superior quality smoothly surfaced and slightly chamfered.
- H20 Beams are used as primary and secondary beams for C-Cuplock Falsework applications.



TECHNICAL SPECIFICATIONS

1. Permissible bending moment (M) = 0.50 t.m
2. Permissible shear force (Q) = 1.10t
3. Section modulus (z) = 461 cm³
4. Geometrical moment on inertia (I) = 4613 cm⁴



Standard Components

Aluminum Beam

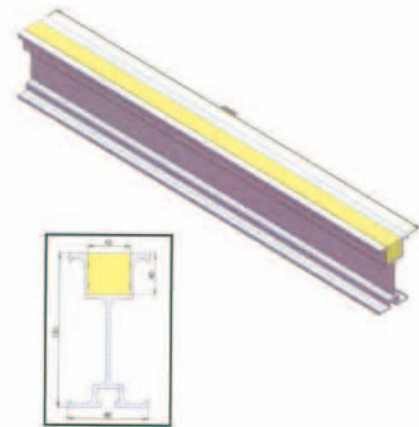
Aluminum Beams combine the benefits of strength, lightness and easy handling with consistency, versatility and exceptional durability .

Aluminum Beams manufactured from high grade alloy (ALLOY 6082). Available in two standard section.

1- Single web light

TECHNICAL SPECIFICATIONS

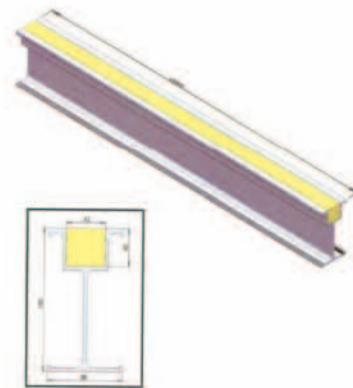
1. Permissible bending moment (M) = 0.77 (t.m)
2. Permissible shear force (t) = 4.00 t
3. Section modulus (z) = 51.70 cm³
4. Geometrical moment on inertia (I)= 389.70 cm⁴



2- Single web Heavy

TECHNICAL SPECIFICATIONS

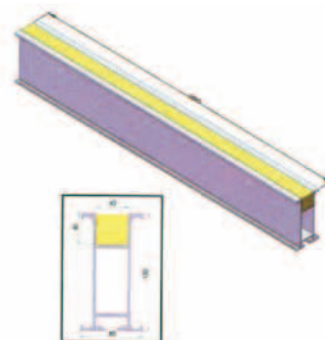
1. Permissible bending moment (M) = 0.86 (t.m)
2. Permissible shear force (t) = 4.70 t
3. Section modulus (z) = 57.89 cm³
4. Geometrical moment on inertia (I)= 469.66 cm⁴



3- Double Web

TECHNICAL SPECIFICATIONS

1. Permissible bending moment (M) = 0.98 (t.m)
2. Permissible shear force (t) = 8.00 t
3. Section modulus (z) = 65.82 cm³
4. Geometrical moment on inertia (I)= 460.7 cm⁴



Sketch Applications

C-CUPLOCK FALSEWORK

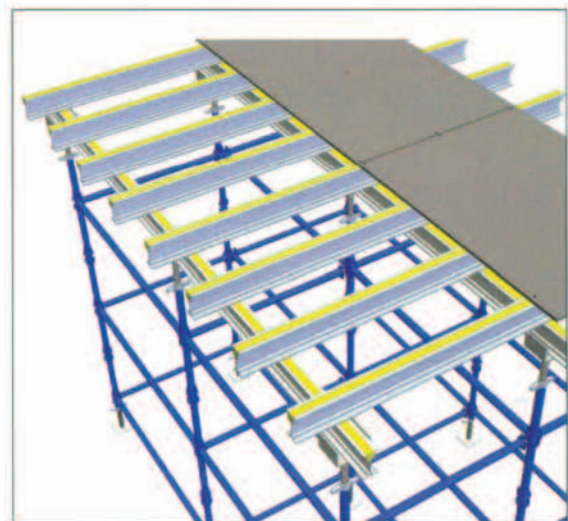
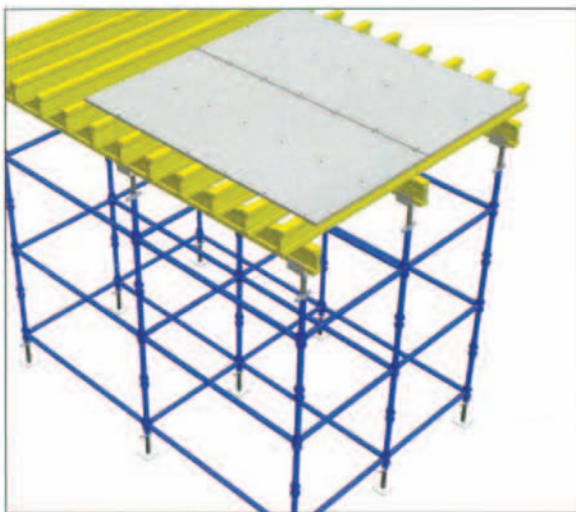
is a new way of shoring and support the concrete slabs in record time with less labor required rather than the traditional method of shoring and support.

C-Cuplock Falsework use different types of primary and secondary beams as needed allowing the possibility of using existing material in the sets.



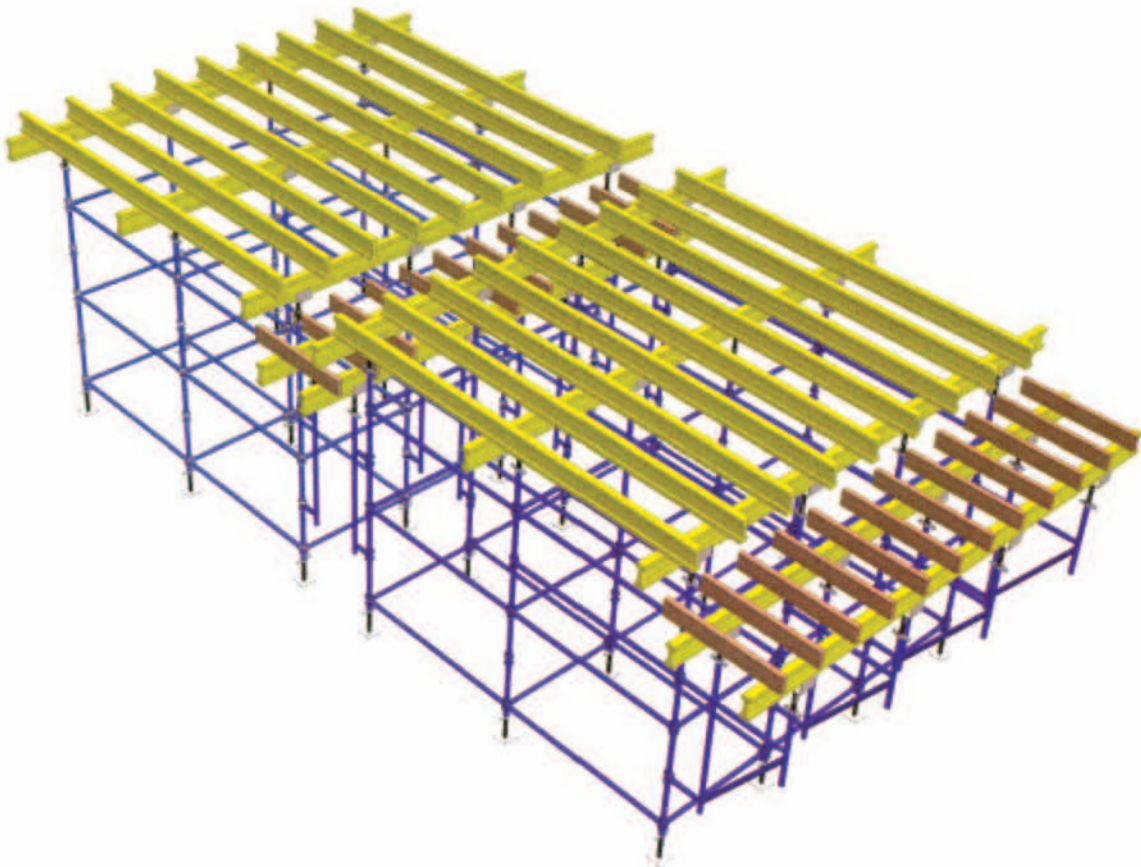
● Primary : H20 Beam
 Secondary : H20 Beam

● Primary : Alluminum Beam
 Secondary : Alluminum Beam

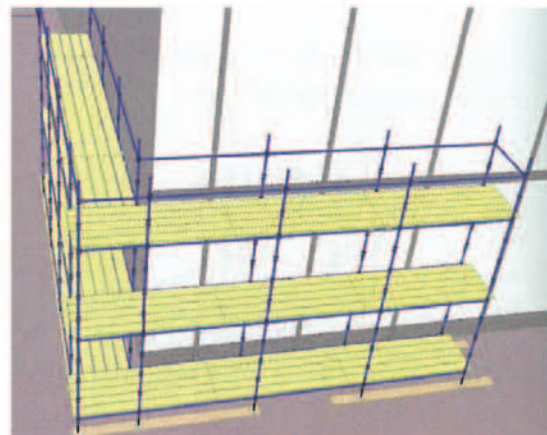
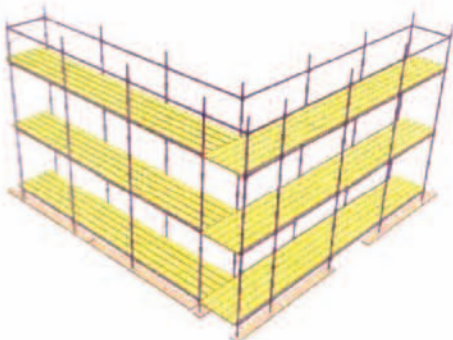


Sketch Applications

Another application of C-Cuplock Falsework used to shuttering beams of slab floor by using double cantilevers for outer beam brackets for inner beams.



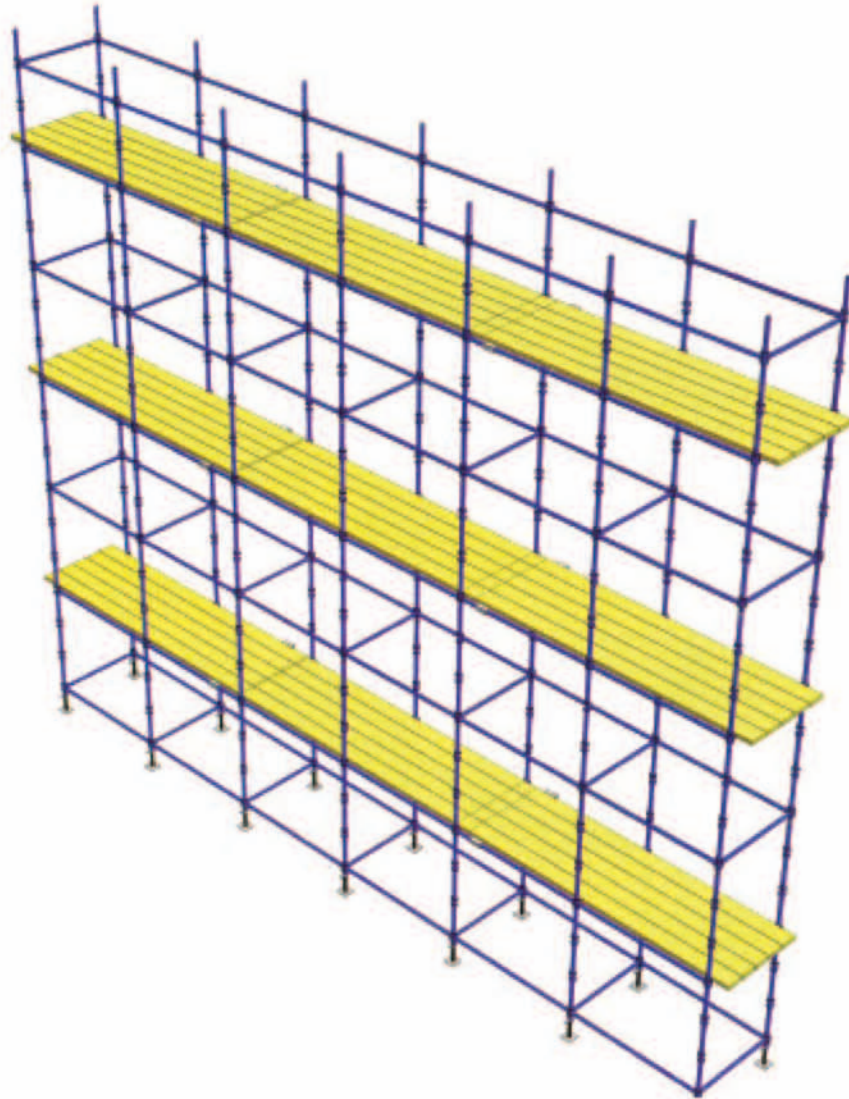
Overview



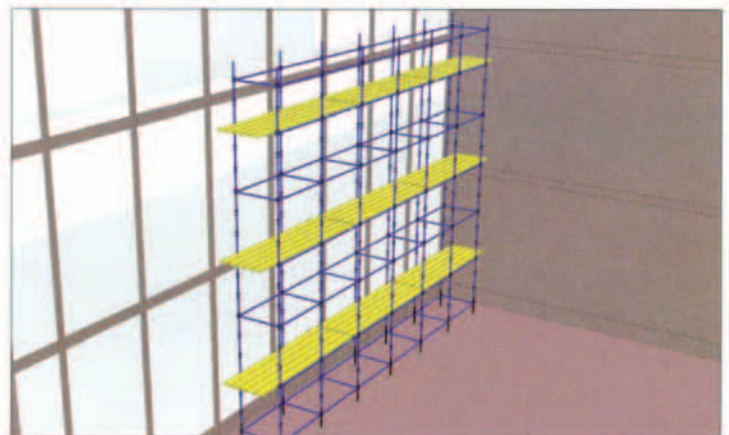
Sketch Applications

C-CUPLOCK SCAFFOLD is defined as any temporary elevated work platform and its supporting structure (including points of anchorage) used for supporting employees or materials or both.

Note that there are three main points to the definition: it is elevated, it is temporary, and it supports either personnel or materials or both.

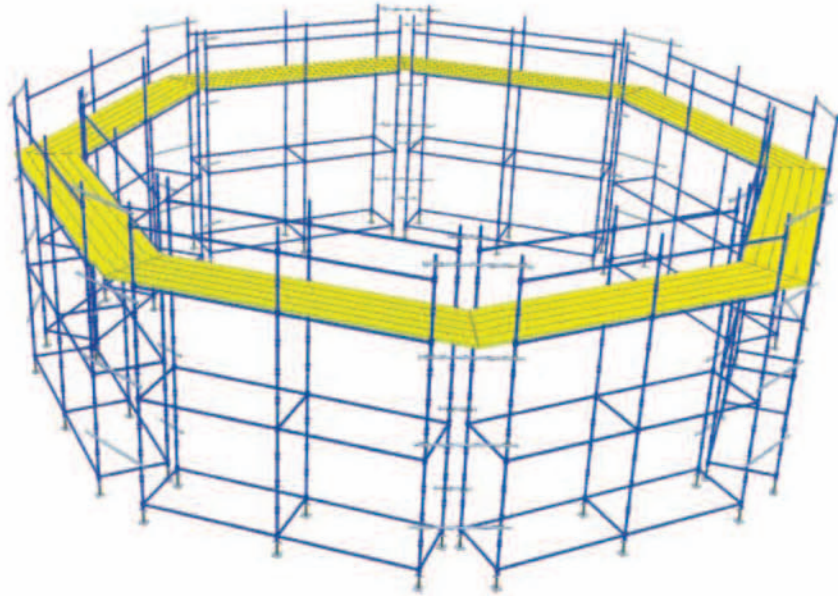


Overview



Sketch Applications

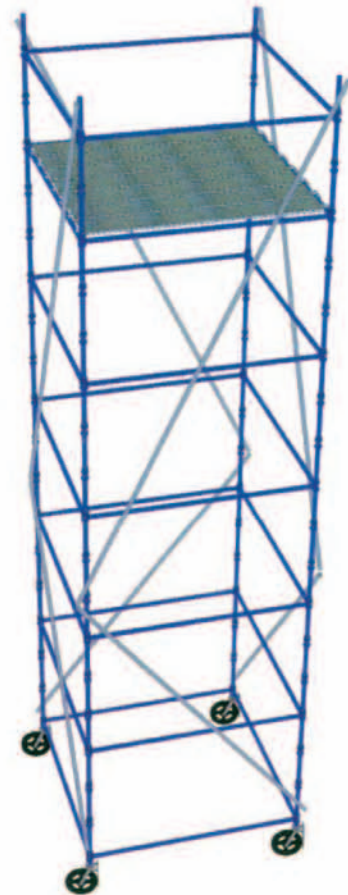
C-CUPLOCK SCAFFOLD: Circular Application



Staircase Tower

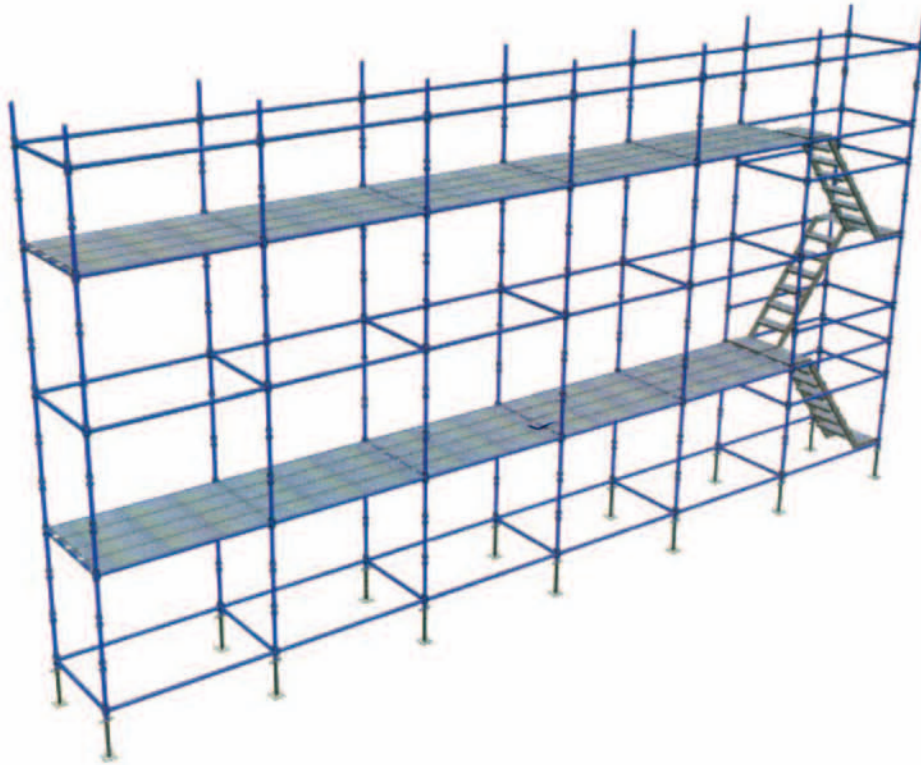


Mobile Tower With Steel Planks

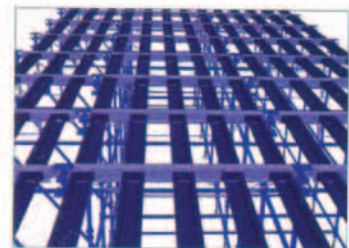
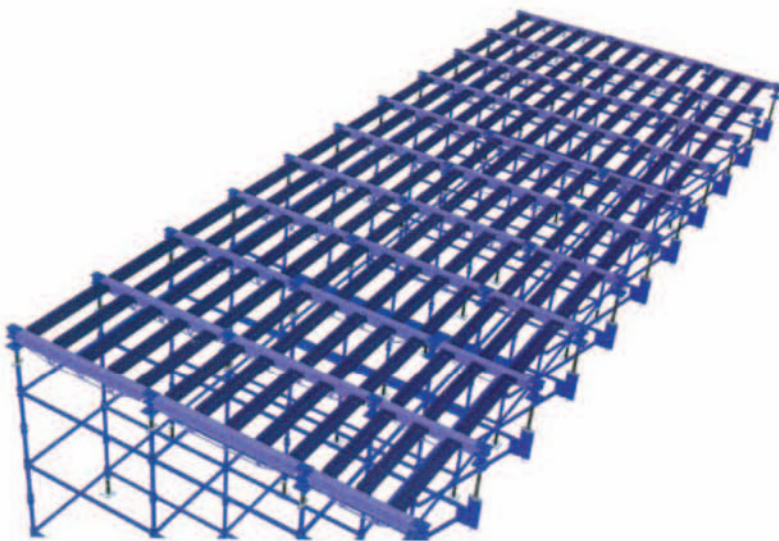


Sketch Applications

C-CUPLOCK SCAFFOLD: Staircase and Steel Planks



C-Cuplock Early striking it's the newest and fastest way for shoring and supporting the concrete slab with Early Striking techniques to reduce the project completion time.

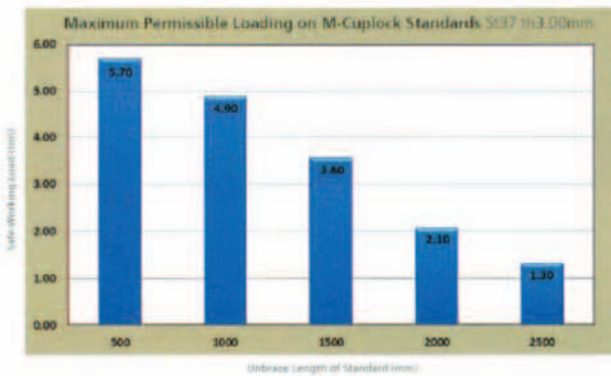


Technical Data

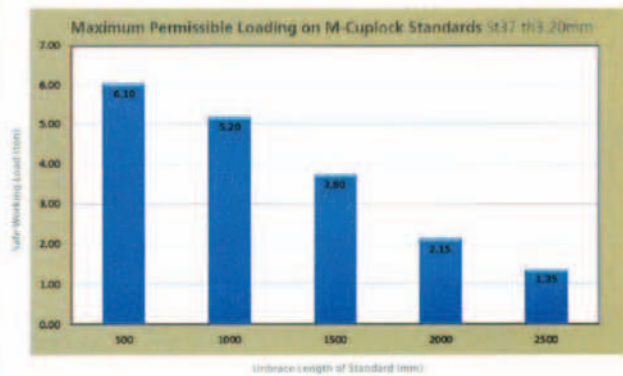
C-Cuplock Standard safe working load

Maximum permissible loading on C-Cuplock standard depends on the unbraced of standard (Lift distance) and the maximum bay size. The following graphs shown the maximum permissible load on the C-Cuplock standard with different steel grades and wall thickness of tubes.

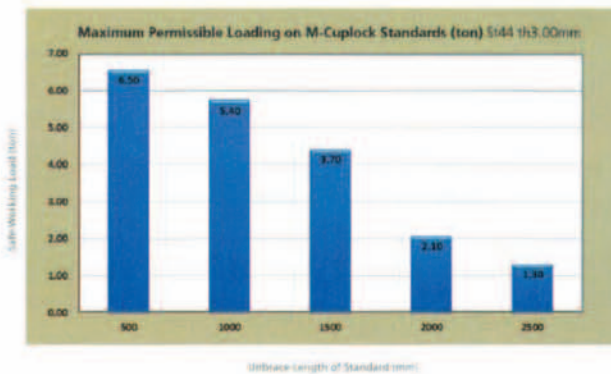
A- For tubes 48.3 mm dia, Thk 3 mm and steel 37



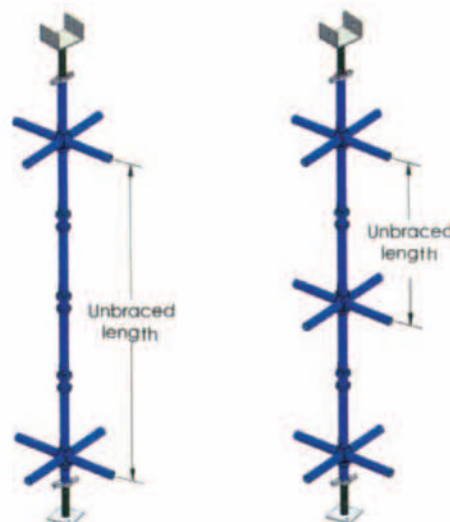
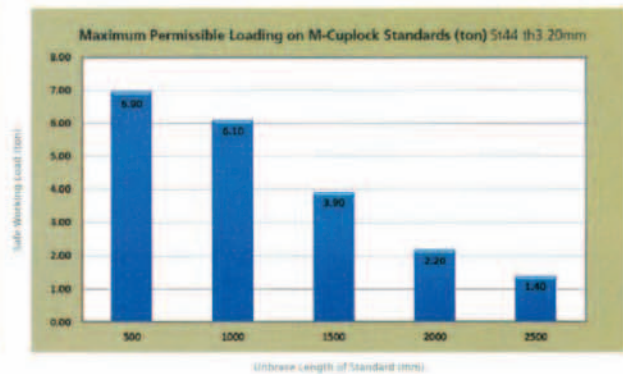
B- For tubes 48.3 mm dia, Thk 3.2 mm and steel 37



C- For tubes 48.3 mm dia, Thk 3 mm and steel 44



D- For tubes 48.3 mm dia, Thk 3.2 mm and steel 44



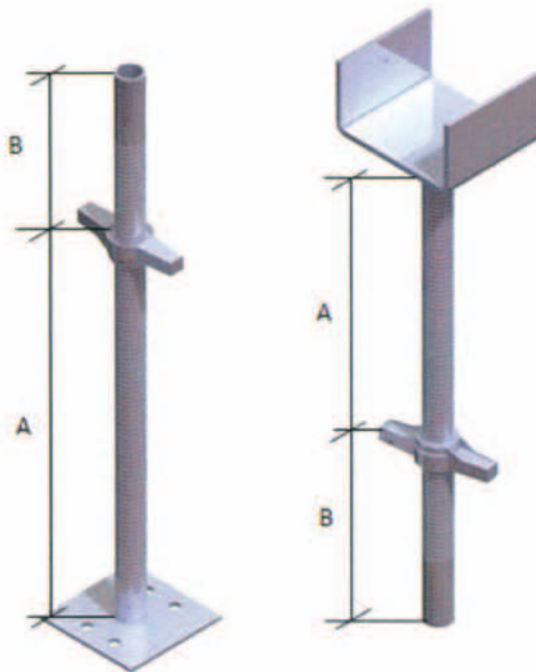
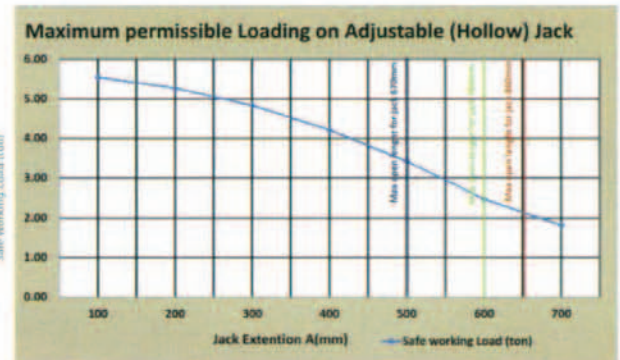
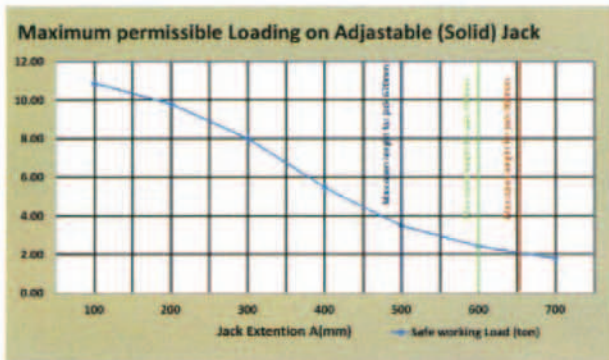
Technical Data

Adjustable Jacks Safe Working Load

Maximum permissible loading on adjustable jack depends on Jack extension (A)
The following graphs showing the maximum permissible load on Adjustable Jack Solid and Adjustable Jack Hollow.

A- Maximum permissible loading on Adhustable Solid Jack

B- Maximum permissible loading on Adhustable Hollow Jack



The distance (B) at least 1/3 (A) $B \geq 1/3 A$

Max Open Length for jack 760 mm

Max Open Length for jack 860 mm

Max Open Length for jack 860 mm

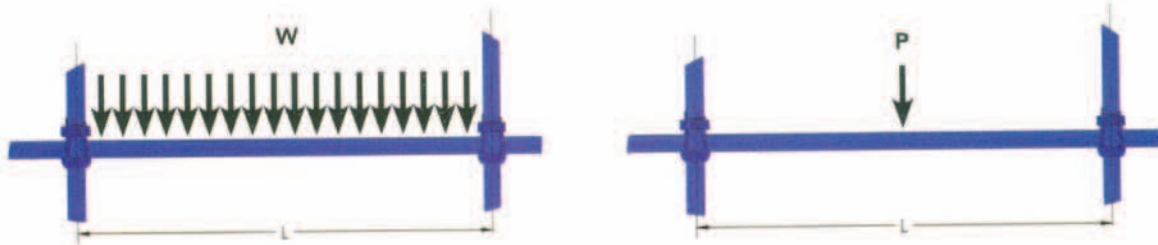
These graphs give maximum permissible load for the adjustable Jack which are erected plumb and loaded concentrically by main beam.

These graphs shown the max extension length of adjustable Jacks.

Technical Data

C-Cuplock Ledger Safe Working Load

The following table and figures show the safe working load on C-Cuplock ledger.



W: uniform load on C-Cuplock Ledger.
P: point load on C-Cuplock Ledger.

	Product	Nominal Length	W (KN/m)	P (KN)
1	C-Cuplock Ledger, 1250 mm	1250	4.68	15.00
2	C-Cuplock Ledger, 1800 mm	1800	4.00	9.00
3	C-Cuplock Ledger, 2500 mm	2500	2.40	6.00

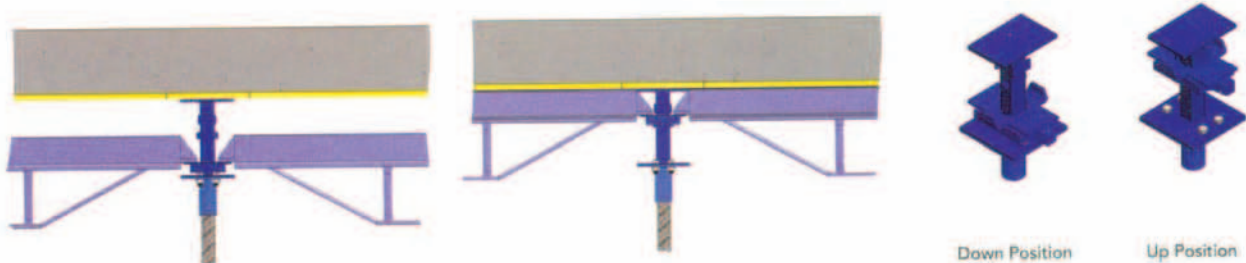
Technical Data of C-Cuplock Early striking Technique

The Technique of Early Striking

C-Cuplock Early Striking application allow to remove formwork after 3 to 4 days of pouring a slab, but C-Cuplock supporting Structure C-Cuplock Standard remains until the concrete is strong enough to support its own weight over its full span.

Concrete generally takes 28 days to attain its full strength. Most codes and standards will only permit the complete support to be removed after about 10 to 14 days, according to environment temperature and cube strength tests.

Traditional Falsework techniques need 10 to 14 days of pouring cycle but C-Cuplock Early Striking provide facility to reduce the cycle time.



Drop Head considered the main part to apply Early Striking technique.

Drop Head allow to dismantling decking and infill beams and supporting the slab with C-Cuplock supporting structure.

Drop Head moved form up position to down position by striking Drop Head wedge by hammer hit; allows the beams to drop about 115mm only giving sufficient clearance for the removal of infills.

Technical Data

C-Cuplock Beams Safe Working Loads

The following figures show Decking Beam Safe Working Load with different Lengths.

Safe Working Loads shown as uniform load and point load.

Decking beam 2.5 m



Decking beam 1.8 m



Decking beam 1.2 m



Point Load (P) = 2 (Reaction of Infill Beam)



Section at mid span of decking beam



C-Infill Beams Safe Working Load

The following figures show Infill Beam Safe Working Load.

Infill beam 1.80 m



Infill beam 1.60 m



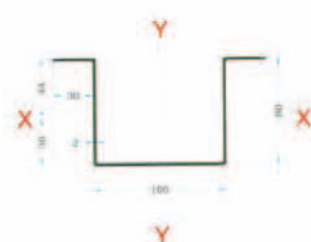
Infill beam 1.25 m



Infill beam 1.00 m



Line Load (W) = Slab Load X Spacing Between Infill Beam



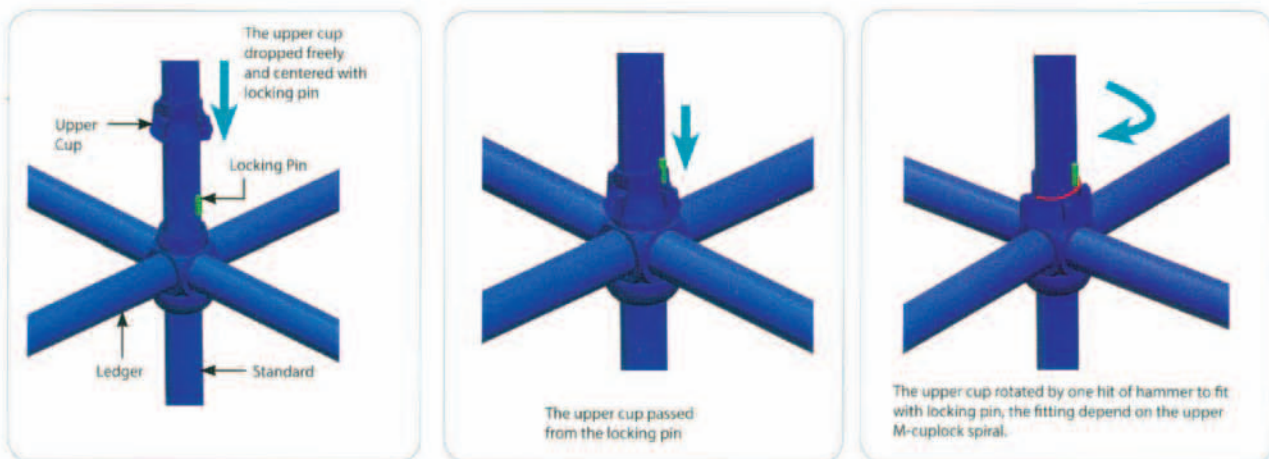
Section at mid span of Infill beam



Technical Data

Simple Method of Component Connection

Blade ends of horizontal members (Ledger) are located in the bottom cup. The upper cup is then slid down over the top of the blades and is rotated until it engages the locking pin.



The upper cup is tightened by striking lugs with a hammer. The inclined spiral upper edge of the upper cup acts against a fixed locking on the standard to wedge the upper cup, tightening, around the blades; providing a positive and rigid connection.

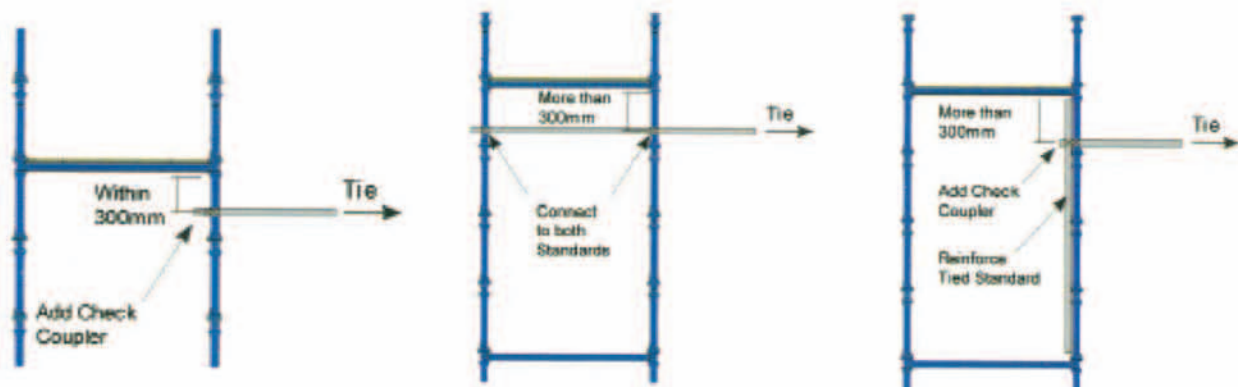
Tying To C-Cuplock Standard

Ties tubes must be connected to Standards and be parallel to Transom at a position adjacent to the junction of the Transom and Ledgers, with the following restrictions:

A - within 300mm from the underside of the cup the junction - connected to the front Standard with addition of a check Coupler.

B - Further than 300mm from underside of the cup at the junction - Tie connected to both front and rear Standards.

C - If unable to connect to two Standards then reinforce front Standard for the full height of the lift with Scaffold Tube and Swivel Couplers with Couplers attached at 900mm centers.



Note

The 300mm distance given in (a), (b) and (c) may need to be reduced, subject to the amount of tie force, increased distance between tie points in cases where ties cannot be placed in the correct position, where ties have to be removed, where tie spacing exceed those given in these assembly recommendations or in scaffolds which extend above the building, with the result that typical tie spacing given in these assembly recommendations cannot be achieved.