



International

MKII SOLDIER and

WALL TIE SYSTEMS



REVISED EDITION

MKII SOLDIER SYSTEM INTRODUCTION

PROFILE

The unique profile of SGB's MkII Soldier, with the pattern of diamond shaped holes and stiffening ribs is the result of an extensive computer analysis which determined the best balance of strength, stiffness and weight.

WIDE PRODUCT RANGE

SGB's extensive range of high quality Soldiers and accessories has evolved as a result of long established working relationships with Building and Civil Engineering companies.

The adaptability of the system allows the contractor to use an economical system suitable for all types of temporary works, ranging from Wall Formwork and Heavy Duty Shoring to more diverse applications such as Mobile Gantries and Footbridges.

CONTINUED DEVELOPMENT

The design of structures has become increasingly complex. To complement this trend in construction, temporary works must be adaptable to the contractors needs but remain economical.

The MkII Soldier equipment range is already wide and versatile, however, SGB maintain a dedicated engineering development team which is constantly exploring designs which will offer complimentary products to cope with today's demanding site requirements.

GALVANISED SOLDIER SYSTEM

SGB have, as part of their development programme, implemented a plan to galvanise the complete MkII Soldier system, in a drive to offer the user better handling and appearance as well as improved durability.

WORLDWIDE ACCEPTANCE

Through the SGB Group's worldwide network, the MkII Soldier range has become a tried, tested, and dependable system. For many years the MkII Soldier system has provided successful & innovative solutions on UK and International construction projects large & small.

QUALITY ASSURED

SGB International is ISO 9001 registered.

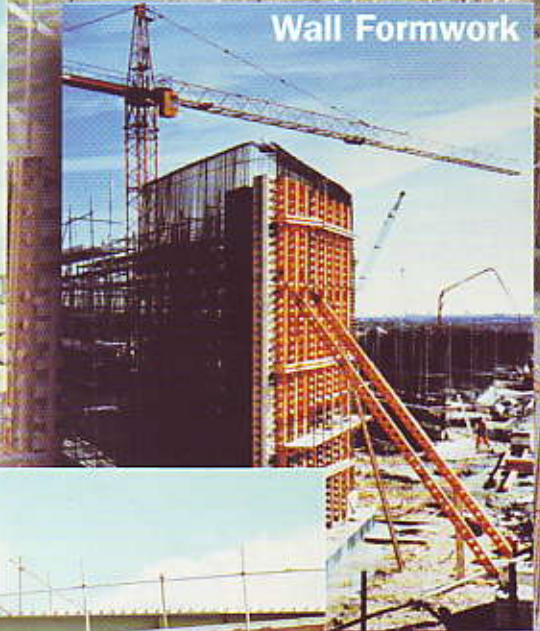
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Vertical Shoring



Wall Formwork



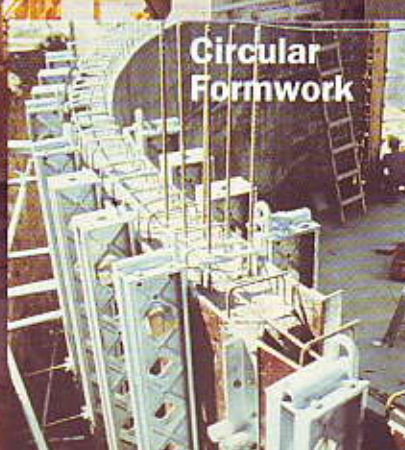
Soffit Formwork



Special Forms



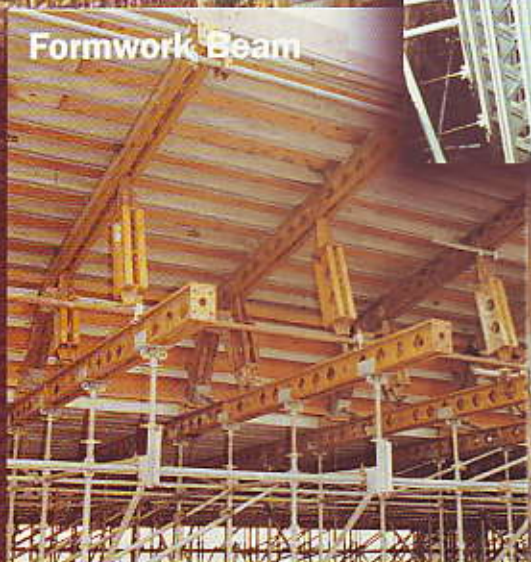
Inclined Shoring



Circular Formwork



Mobile Gantries



Formwork Beam

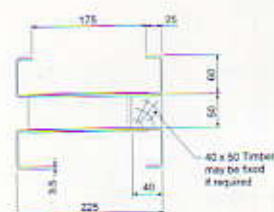


Facade Retention

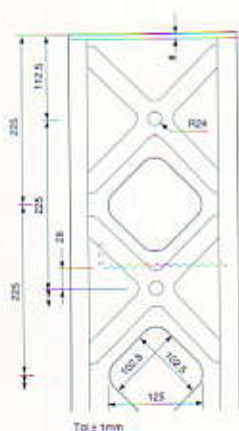
MKII SOLDIER SYSTEM

SOLDIER DETAILS

SGB has the widest range of Soldier sizes on the market to allow the user to obtain any length requirement necessary. All are standard stock and are available at all of our locations.



CROSS SECTION



SOLDIER DETAIL



LENGTH (mm):	75	150	343	450	675	900	1125	1800	2700	3150	3600
WEIGHT (kg):	5.7	7.2	8.9	11.7	17.5	21.5	25.4	37.4	55.2	62.6	71.0
Painted CODE N°:	443010	443011	443009	443007	443008	443001	443002	443003	443004	443005	443006
Galvanised CODE N°:	443210	443211	443099	443097	443098	443091	443092	443093	443094	443095	443096

SPECIFICATIONS/PROPERTIES

Finish As Specified

Weight/m	20.8	kg/m
C.S Area (Gross)	25.73	cm ²
C.S Area (Avg)	22.52	cm ²
E	206000	N/mm ²
I _{xx}	1578	cm ⁴
I _{yy}	534.6	cm ⁴
r _x	9.99	cm
r _y	5.59	cm
Minimum F.O.S.	2:1	
Axial Comp (Facade) ≤	300.0	kN
Axial Comp (Shore) ≤	100.0	kN
Axial Tension	120.0	kN
End Reaction (see note 2)	115.0	kN
Centre Reaction (see note 2)	115.0	kN
B. Mo (Hog)	38.0	kNm
B. Mo (Sag)	38.0	kNm
B. Mo (at joint)	10.00	kNm
B. Mo (Reinf joint)	15.0	kNm
Tie Load	95.0	kN
Shear (not less than)	75.0	kN
Shear at joint (not less than)	75.0	kN

Guidance notes

- 1 Comp/Tension loads may be limited by end attachment/strut length.
2. Minimum bearing length 155mm (as Tie washer 4430-20)
3. Weight excludes timber insert. (Additional weight approx. 1.1kg/m)
4. There is no reduction in the axial load at the joint.

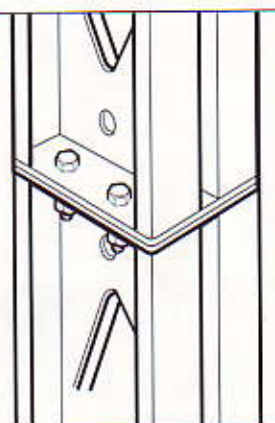
JOINT TO JOINT CONNECTION

To fix MKII Soldiers end to end. Four N°. M16 x 35 HT set screw and nuts should be used.

Code N°: 584233

Weight: 0.11kg

Max bending moment = 10 kNm.



JOINT REINFORCEMENT PLATE

When it is necessary to increase the capacity bending moment at the joint of two soldiers. Four no Joint Reinforcement Plates may be used complete with M16 x 50 HT set screw & nuts.

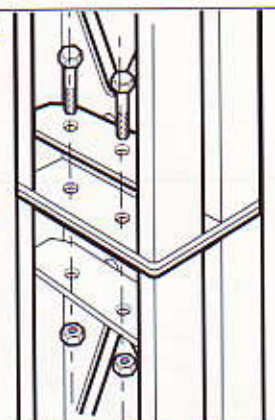
Painted Code N°: 443023

Galvanised Code N°: 443223

Weight: 0.79kg

Max bending moment = 15 kNm.

Joint Reinforcement Plate



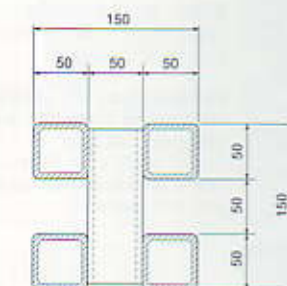
Note: Galvanised components incorporating threaded items will be electro plated.



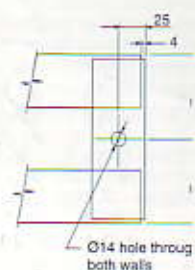
MKII SOLDIER SYSTEM

INTERNAL CORNER SOLDIER

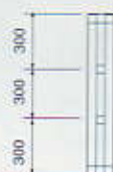
Designed to be used in conjunction with the standard soldiers, they simplify the construction of corners for wall shuttering. This allows ties to pass through in both directions replacing two standard Soldiers.



PLAN

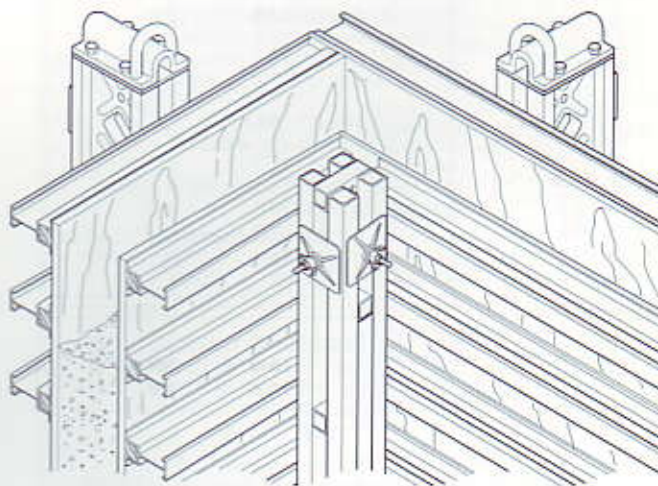
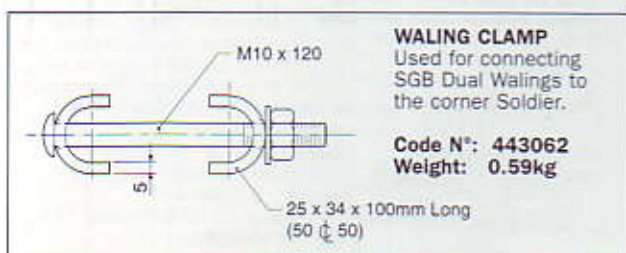
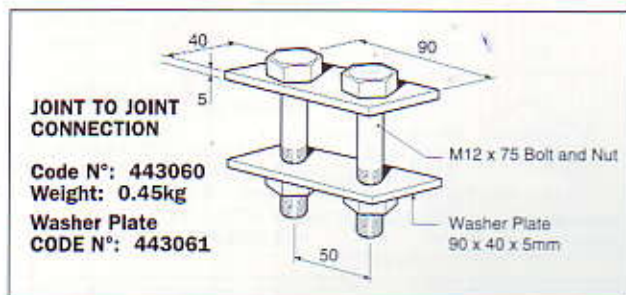


END DETAIL



LENGTH (mm):	900	1125	1800	2700	3150	3600
WEIGHT (kg):	19.00	24.1	38.0	56.6	66.3	75.4
Painted CODE N°:	443055	443054	443053	443052	443051	443050
Galvanised CODE N°:	443255	443254	443253	443252	443251	443250

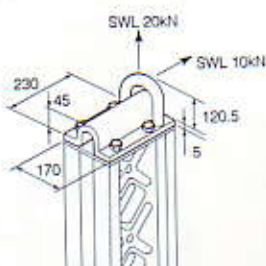
Typical Application



Specifications/ Properties

BM - 9.26 KNm
EI - 962 KN/m²
Max. Tie Load - 50 KN

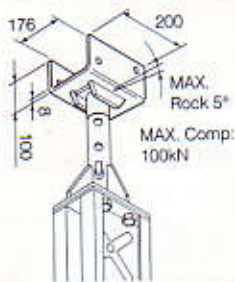
A full range of accessories is available to adapt the MkII Soldier System to suit any work requirement. All accessories are standard stock and available at all SGB Formwork locations. All items shown are available for Hire or Sale throughout the UK.



LIFTING BRACKET

Bolted to the top of Soldiers, to provide facilities for lifting by crane. A minimum of two per form should be used.

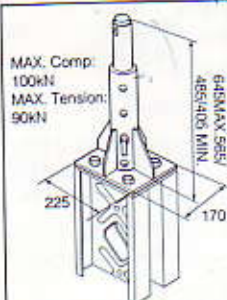
Painted Code N°: 443015
Galvanised Code N°: 443080
Weight: 2.0kg
 4 x N° M16 x 35 HT set screw and nuts are required.



FORKHEAD

Forkheads can be used in place of the Head/Base Plate and will support MKII Soldiers, timbers or steel beams up to 170mm wide.

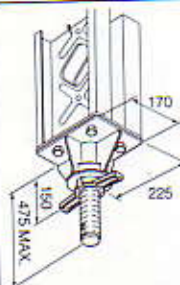
Painted Code N°: 443018
Galvanised Code N°: 443218
Weight: 4.8kg
 1 x N° M12 x 80 HT bolt & self locking nut (optional).



TUBULAR SHORING ADAPTER

Bolts to the end of a Soldier, to provide adjustment in fixed steps. Overall height varies from 405-645mm in 80mm increments and in conjunction with the Threaded Shoring Adapter, it is usable in most shoring applications.

Painted Code N°: 443037
Galvanised Code N°: 443079
Weight: 12.95kg
 4 N° M16 x 35 HT set screw nuts (Grade 8.8) required.

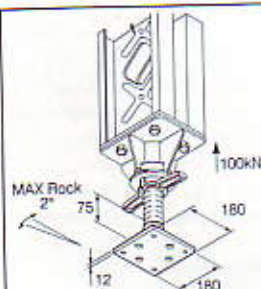


THREADING SHORING ADAPTER

Bolted to the end of a Soldier, this attachment provides a screw threaded fine adjustment range of 150mm to 475mm.

Painted Code N°: 443038
Galvanised Code N°: 443238
Weight: 8.5kg
 4 N° M16 x 35 HT set screw & nuts (Grade 8.8) required.

	Normal	Reinforced	(Special order)
Max. Comp:	100kN	100kN	
Max. Tension:	50kN	80kN	

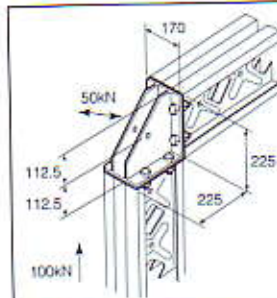


HEAD/BASE PLATE

Used to spread the load at the top or bottom of a shore, these can be bolted to the end of the Shoring Adaptors.

Painted Code N°: 443022
Galvanised Code N°: 443084
Weight: 3.2kg
 1 N° M12 x 80 HT bolt & self locking nut (optional).

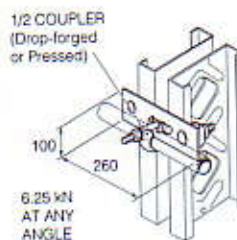
SWL may be limited by other components.



RIGHT ANGLE CONNECTOR

Used to fix Soldiers end to end at right angles.

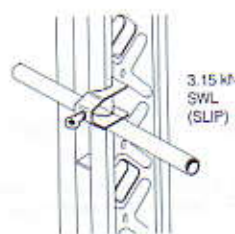
Painted Code N°: 443047
Galvanised Code N°: 443247
Weight: 11.2kg
 4 x N° M16 x 35 HT set screw and nuts per Soldier end are required.



SOLDIER BRACING COUPLER

Fixed to the Soldier, these provide a coupler for the attachment of scaffold tube, required when lacing and bracing is to be attached for applications such as free standing falsework.

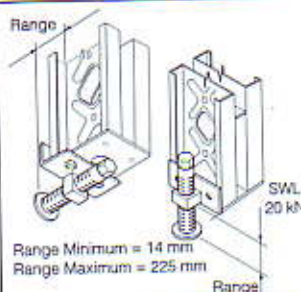
Painted Code N°: 443035
Galvanised Code N°: 443235
Weight: 3.9kg



WALLING CLIP

Used as an alternative method to attach standard scaffold tube to a Soldier.

Code N°: 445500
Weight: 0.6kg



FORM JACK

Primarily used to level a form, they can be used horizontally as a plumbing device. A minimum of two jacks are required per form side.

Painted Code N°: 443016
Galvanised Code N°: 443216
Weight: 4.3kg
 2 N° M16 x 45 HT set screw and nuts are required.



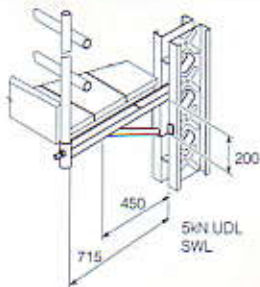
SUPPORT PLATE

Where it is necessary to give additional support to the wallings and form face on crane handled forms, these can be bolted to the bottom of the Soldiers. They should be fitted on the soldiers to which the lifting brackets are attached.

Painted Code N°: 443019
Galvanised Code N°: 443083
Weight: 3.81kg
 2 N° M16 x 35 HT set screw and nuts are required.

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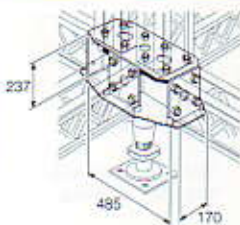
STANDARD COMPONENTS



HOP UP BRACKET

Designed to support 3 scaffold boards plus 1 toeboard, complete with a spigot to locate a guardpost. The Hop Up Bracket can be fixed at any of the bolt holes between the diamond holes.

Painted Code N°: 443017
Galvanised Code N°: 443081
Weight: 5.6kg
 1 N° M16 x 90 HT bolt & nut is required.

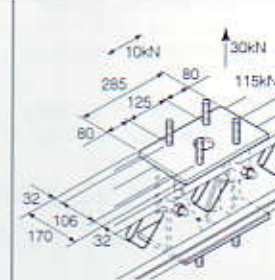


MULTIWAY CONNECTOR

Enables the Soldiers to be erected as a three dimensional frame, allowing Soldiers to be connected on either axis for a single or double Soldier.

Painted Code N°: 443029
Galvanised Code N°: 443089
Weight: 29.0kg
 4 N° M16 x 35 HT set screw & nuts (grade 8.8) per Soldier end are required.

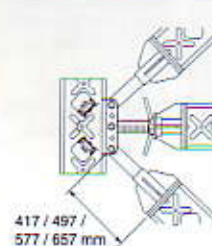
For loading details contact your nearest SGB design office.



SOLDIER SHEAR CONNECTOR

Can be used to join a Soldier at right angles without any reduction in shear loading. Can be used for example to fit Soldiers or Shoring Adaptors. Safe Shear load = 10 kN

Painted Code N°: 443070
Galvanised Code N°: 443270
Weight: 7.0kg
 2 N° M16 x 90 HT bolt & nuts to connect into the Soldier, and 4 N° M16 HT nuts for threaded studs

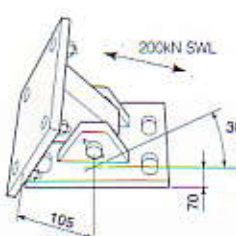


PUSH PULL BRACKET

Used to give a positive connection for up to 3 Shoring Adaptors to Soldiers either horizontally, vertically or diagonally.

Painted Code N°: 443027
Galvanised Code N°: 443077
Weight: 13.0kg
 1 N° M24 x 90 HT bolt & nut (grade 8.8) per Shoring Adaptor.

For loading details contact your local SGB Formwork design office.



MULTISHORE FIXED PIVOT

Part of the Ultra Loading components. It can be used where it is necessary to incorporate sloping levels either at the base or head of a shore. Fixed directly to a Multishore swivel jack. SWL = 200kN

Painted Code N°: 443014
Galvanised Code N°: 443214
Weight: 20kg
 4 N° M16 x 35 HT set screw & nuts (grade 8.8) per end are required.

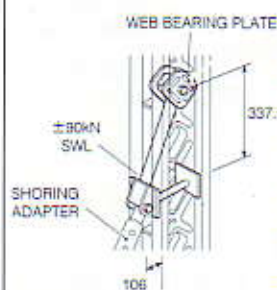


TENSION BRACE

Available in 3 sizes, provided for light and easily erected frame bracing. Not available in the UK.

Length	Painted Code N°	Galvanised Code N°	Weight
a) 4.5-5.5m	443044	443244	15.10kg
b) 3.75-4.75m	443045	443245	11.50kg
c) 2.5-3.5m	443046	443246	6.20kg

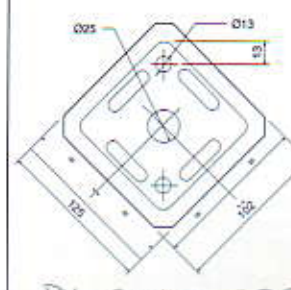
2 N° M16 x 90 HT Nut & bolt are required.



HD PUSH/PULL PROP ADAPTER

Used in conjunction with Web Bearing Plates, it provides a strong connection to Soldiers and develops the full load potential of the shore in tension or compression.

Painted Code N°: 443025
Galvanised Code N°: 443085
Weight: 6.8kg
 2 N° M24 x 90 HT bolt & nuts are required.

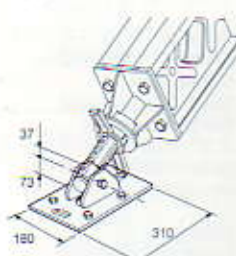


WEB BEARING PLATE

2 are required to clamp the HD Push/Pull Prop Adaptor to the Soldier at the diamond hole position.

Painted Code N°: 443026
Galvanised Code N°: 443086
Weight: 0.6kg
 2 N° M12 x 80 HT bolt & nuts per two W.B. Plates are required.

PV-SOL-000011

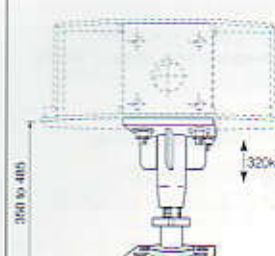


SWIVEL SHORING BASE

Designed for bolting to a suitable foundation, used in conjunction with the Shoring Adaptors. When shores are at an inclined angle. Can be bolted to the Shoring Adaptors.

SWL may be limited by other components.

Painted Code N°: 443024
Galvanised Code N°: 443087
Weight: 5.0kg
 1 N° M24 x 90 HT bolt & nuts (grade 8.8) is required.



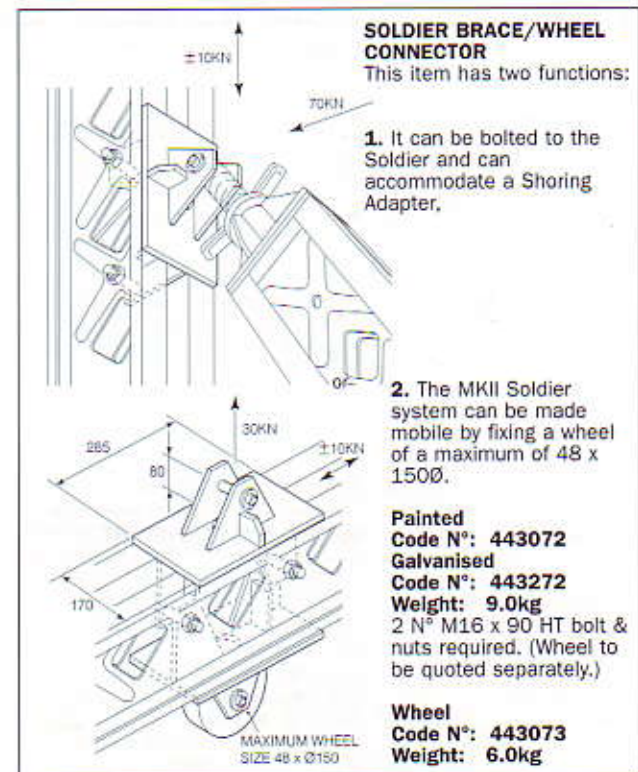
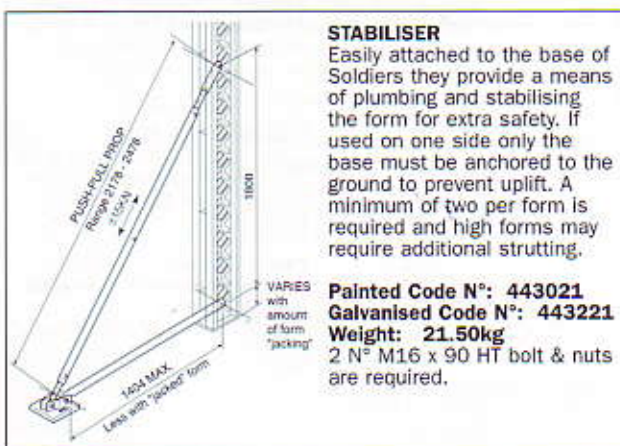
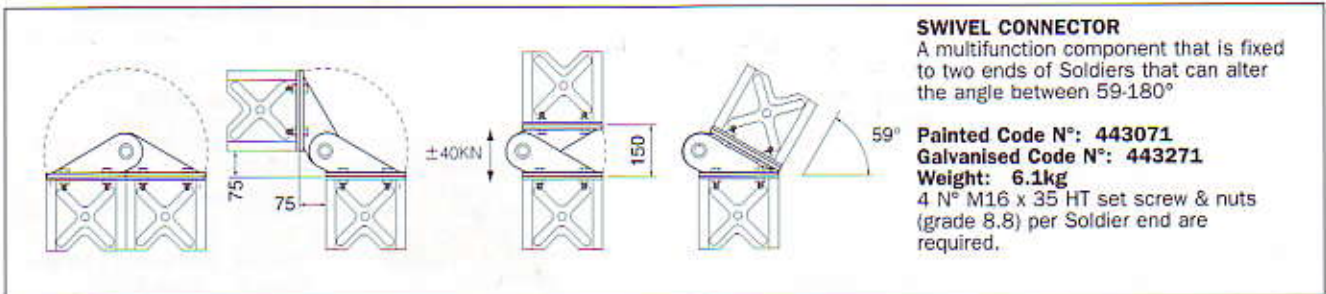
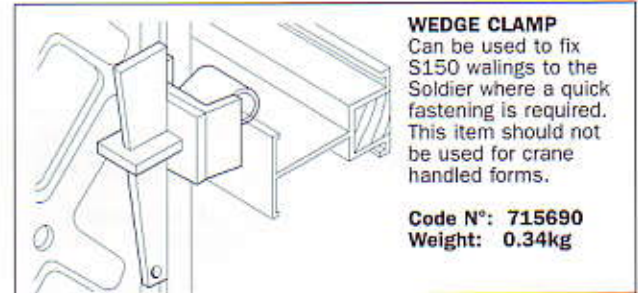
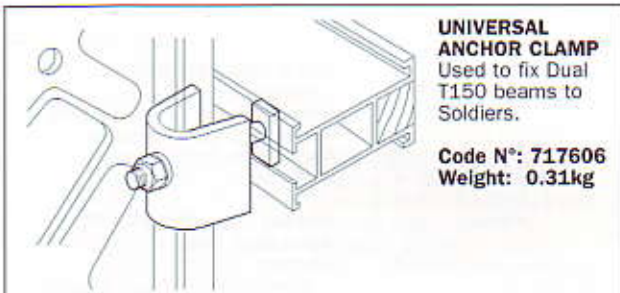
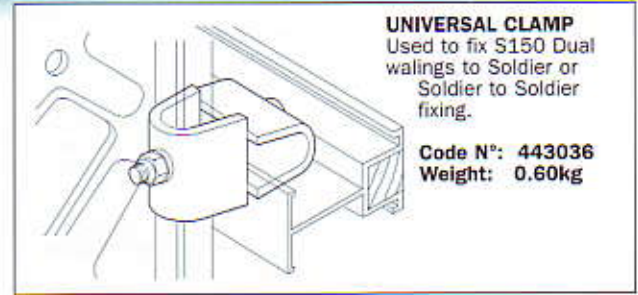
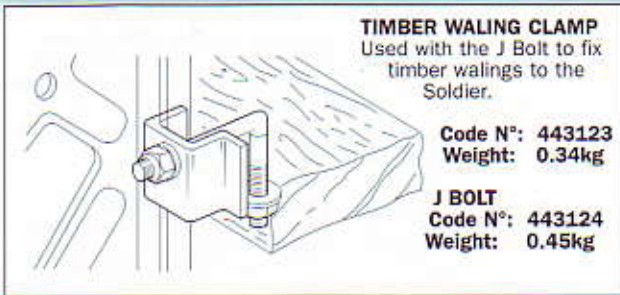
MULTISHORE SWIVEL JACK

Designed for use where very heavy loads are required to be supported. Provides overall adjustment from 350 to 485mm

SWL = 320kN
Painted Code N°: 443013
Galvanised Code N°: 443213
Weight: 20kg
 4 N° M16 x 50 HT set screw & nuts (grade 8.8) per end are required.

MKII SOLDIER SYSTEM

STANDARD COMPONENTS




MKII SOLDIER SYSTEM

STANDARD COMPONENTS

CIRCULAR FORMWORK


EDGE ANGLE
Bolts to the plywood and accommodates the Fork Arms.



Length	Painted Code N°	Galvanised Code N°	Weight
1.2m	444004	444304	16.00kg
1.8m	444011	444311	23.00kg
2.7m	444003	444303	35.00kg
3.0m	444002	444302	39.00kg
3.6m	444001	444301	47.00kg

M10 x 40 HT sq hex screws & nuts.

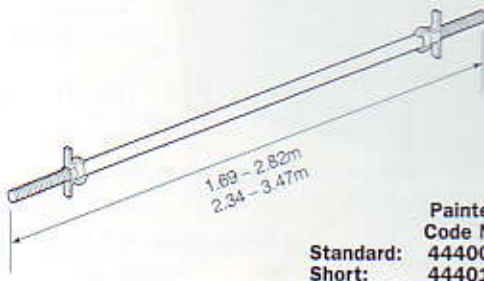
FORK ARM
2 sizes (inner & outer) sit in the spigots of the Edge Angles and fix to the Turnbuckles.



	Painted Code N°	Galvanised Code N°	Weight
Inner	444006	444306	2.0kg
outer	444005	444305	4.0kg

1 N° M10 x 70 HT Hex bolt & nut.

TURNBUCKLE
Standard & Short lengths cover the full range of radii. These are connected across the Fork Arms and when adjusted (by extending or retracting the screw) they flex the form to the required radius.



	Painted Code N°	Galvanised Code N°	Weight
Standard:	444009	444309	18.0kg
Short:	444010	444310	10.0kg

2 N° M10 x 70 HT Hex bolt & nut are required

STIFFENING BRACE
Is used to brace the turnbuckle to prevent bowing. Clamps to the Turnbuckle using a standard Double Coupler. Fixes into the bolt hole in the Soldier using nut & bolt.



Painted Code N°: 444007
Galvanised Code N°: 444307
Weight: 2.80kg
1 N° M16 x 75 HT Hex. bolt & nut is required.

MKII SOLDIER SYSTEM

NUT AND BOLT COMPONENTS

CODE N°s	DESCRIPTION	APPLICATION(S)
584201	Coach Screw SQ. HD. M10x60 HT	Fixing timber batten to Soldier
584202	Nut and Bolt CSK. M10x40 HT	Plywood to Edge Angle
584203	Nut and Bolt CSK M10x60 HT	Fixing timber batten to Soldier (Alternative)
584204	Nut and Bolt M10x70 HT	Fixing Turnbuckle to Fork Arm
584205	CSK Screw and Nut M12x30 HT	Fixing plywood to timber batten
584207	Bolt and Nut M12x80 HT	Forkhead or Base/Head Plate to Shoring Adapters. Also fixing Web B. Plt.
584211	Screw and Nut M16x45 HT	Form Jack to Soldier fixing
584220	Nut and Bolt M16x90 HT	Soldier Shear Connector, Stabiliser, Soldier Brace Connector
584233	Bolt and Nut M16 x 35 HT	Soldier to Soldier, Soldier to Shoring Adapters etc.
584235	Bolt and Nut M24x90 HT	Hd PP Prop Adaptor, Swivel Base Plate
584250	Nut and Bolt M12x260 HT	Fixing Soldier to MKII Forkhead

MKII SOLDIER SYSTEM

WALLFORMWORK

Probably the most popular use of the MkII Soldier system is as a wall shutter. Used with either the contractor's timber or SGB's S150 or T150 DU-AL Aluminium Beams the system provides an economical and versatile forming system.

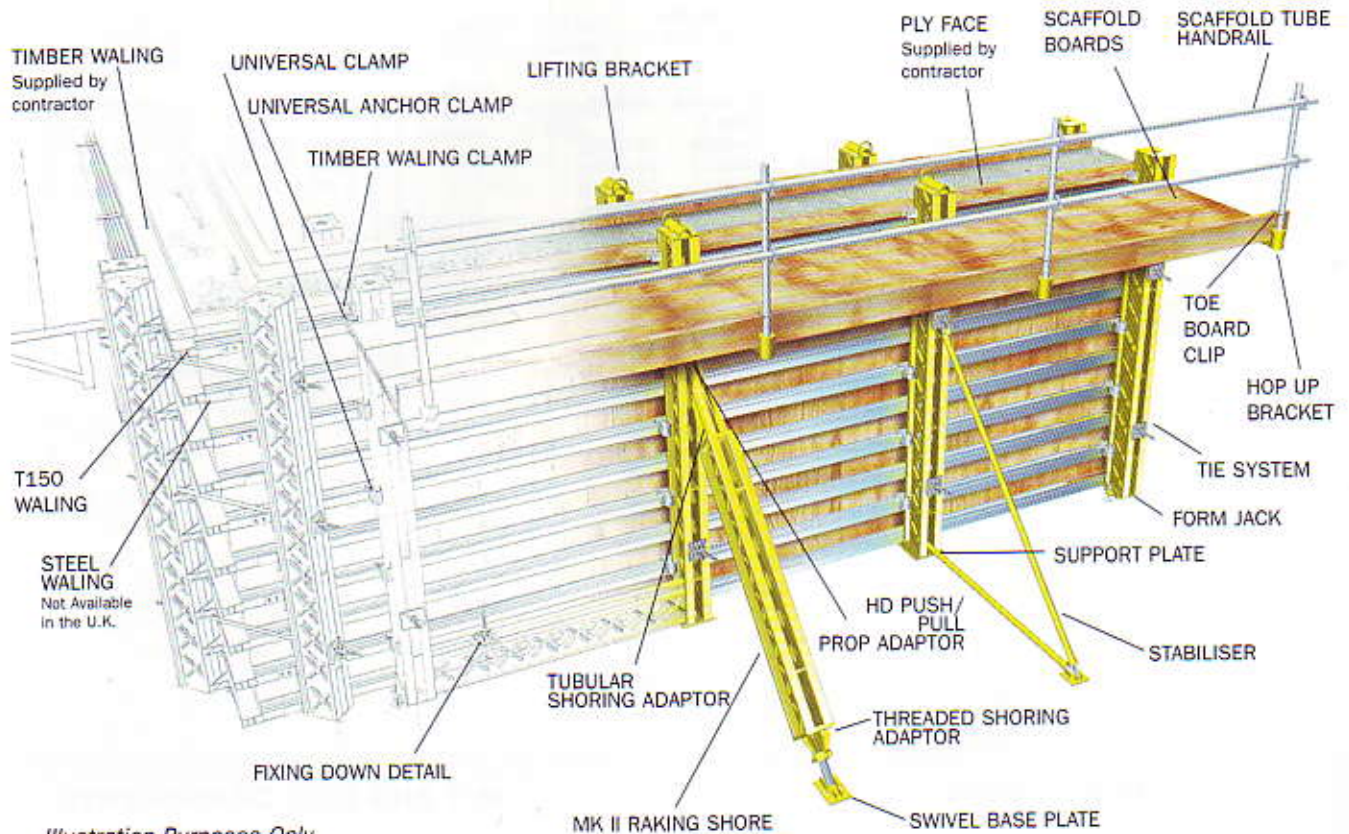
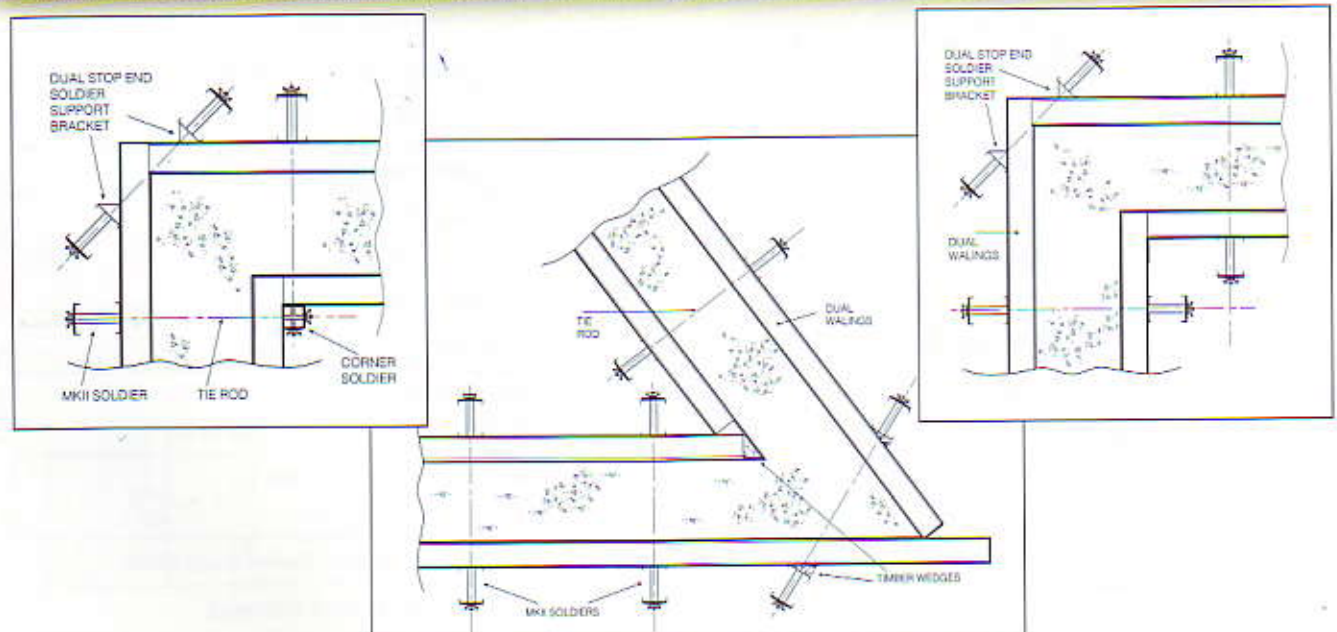


Illustration Purposes Only

WALLFORMWORK

CORNER DETAILS

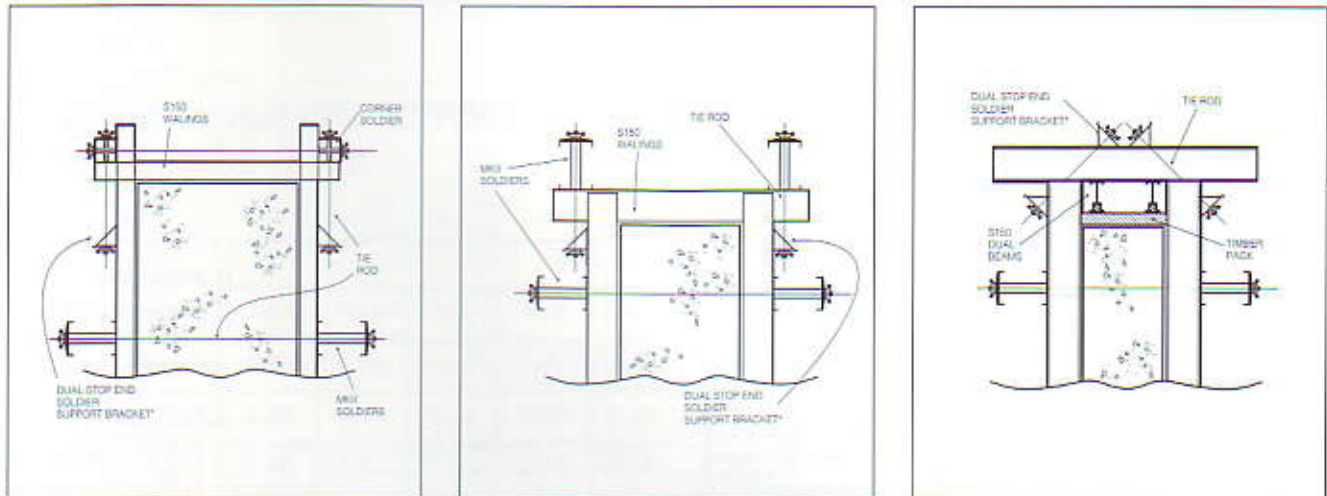


DUAL Stop End Soldier Support Bracket must be used with T150 beams.

WALLFORMWORK

STOP END DETAILS

To assist SGB's customers in a working scheme, included below are some typical solutions for creating stop ends.



DU-AL Stop End Soldier Support Bracket must be used with DU-AL T150 beams.

WALLFORMWORK

COMPATIBLE TIE SYSTEMS

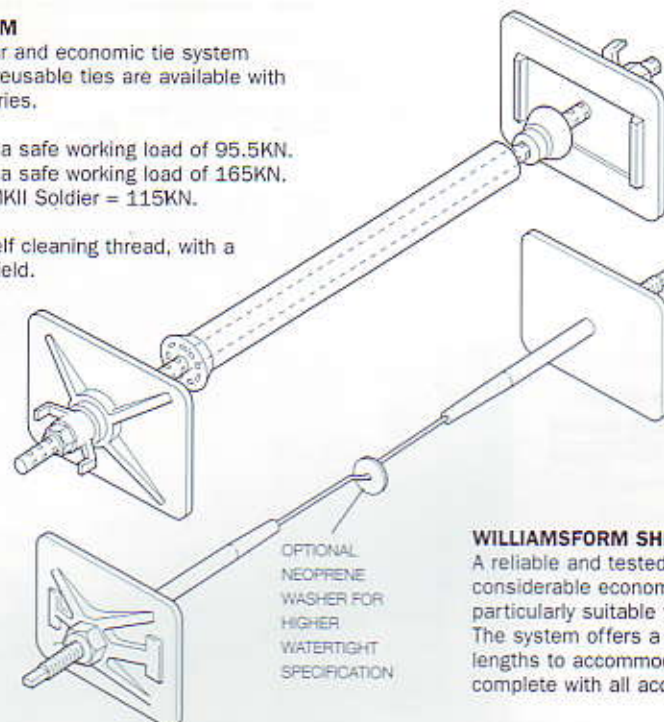
SGB MkII Soldiers will accommodate most tie systems which have a suitable safe working load. SGB offers a choice of 2 tie systems recommended for use with the MkII Soldier.

TUF TIE HEAVY DUTY SYSTEM

Undoubtedly the most popular and economic tie system method in use today. These reusable ties are available with a complete range of accessories.

The 15mm diameter rod has a safe working load of 95.5KN.
The 20mm diameter rod has a safe working load of 165KN.
Note: maximum tie load on MKII Soldier = 115KN.

Both benefit from a robust self cleaning thread, with a safety factor of 2:1 against yield.



WILLIAMSFORM SHE BOLT SYSTEM

A reliable and tested solution that achieves considerable economy. It is very easy to install and particularly suitable for water retaining structures. The system offers a range of SHE BOLT and tie lengths to accommodate different form widths, complete with all accessories.

For fuller details please refer to the 'TIE' section.

SAFE WORKING LOADS FOR PLYWOOD FORMWORK FOR WALL FORMWORK APPLICATIONS

Allowable pressure for plywood (kN/m^2)

19mm Douglas Fir, 5,6 or 7 sanded ply 18.5mm thick, face grain parallel to span.



WALLFORM APPLICATION

75mm BEARING	SPACING (mm)									PLYWOOD PROPERTIES
	203	222	244	271	305	348	406	488	610	
BENDING	124.9	104.4	86.4	70.0	55.3	42.5	31.2	21.6	13.8	0.489 kNm
SHEAR	118.6	101.0	86.2	73.0	61.2	50.9	41.4	32.8	25.0	6.79 kN
DEFLECTION	218.6	167.2	125.9	91.9	64.4	43.4	27.3	15.7	8.0	$EI = 3.26 \text{ kNm}^2$ SPAN/270
MAX ALLOWABLE kN/m^2	118.6	101.0	86.2	70.0	55.3	42.5	27.3	15.7	8.0	

50mm BEARING	SPACING (mm)									PLYWOOD PROPERTIES
	203	222	244	271	305	348	406	488	610	
BENDING	124.9	104.4	86.4	70.0	55.3	42.5	31.2	21.6	13.8	0.489 kNm
SHEAR	96.5	84.5	73.9	64.0	54.8	46.3	38.3	30.8	23.9	6.79 kN
DEFLECTION	218.6	167.2	125.9	91.9	64.4	43.4	27.3	15.7	8.0	$EI = 3.26 \text{ kNm}^2$ SPAN/270
MAX ALLOWABLE kN/m^2	96.5	84.5	73.9	64.0	54.8	42.5	27.3	15.7	8.0	

NOTES:

- 1) Figures obtained from current Manufacturers data.
- 2) Calculations based upon Load Case 58 from "Formwork - A Guide to Good Practice".

- 3) Bearing width used = 75mm and 50mm.
- 4) Allowances made for Concrete Density = 24.5 kN/m^3
Deflection = $1/270$ th of span.
- 5) Hatched area indicates criteria



To enable
easy striking
of form faces

we recommend
using SGB Chemical
release agent or SGB

Mould Oil. This gives excellent
release characteristics and
substantial reduction in blow
holes and surface blemishes.
Available for Sale in 205 or 25
Litre capacities.

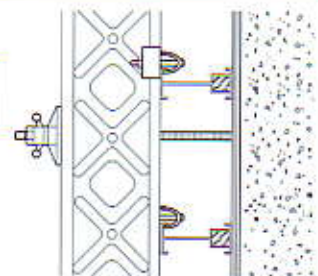


The use of Aluminium over timber has great advantages. Aluminium is lighter and stronger than timber and therefore allows larger assemblies of formwork, which in turn reduces the labour cost of fixing and erecting. SGB offers two types of Aluminium waling beam, the standard S150 for general use, and the T150 which is a stronger section and ideal for use where the Soldier centres need to be wider apart.

REQUIRED SOLDIER CENTRES FOR DU-AL S150 WALINGS

Concrete Pressure (kN/sq.m)	Waling Vertical Spacing (mm)							
	175	200	225	250	275	300	325	350
50	1800	1800	1800	1800	1800	1800	1750	1630
60	1800	1800	1800	1800	1720	1590	1470	1370
70	1800	1800	1800	1630	1490	1370	1270	1180
80	1800	1780	1590	1430	1310	1210	1120	1040
90	1800	1590	1420	1280	1170	1080	1000	940

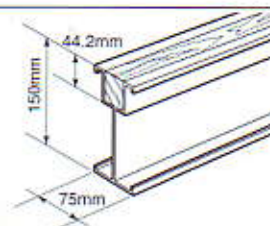
For spans exceeding 1800mm, contact SGB Technical Services for guidance.


S150 ALUMINIUM WALINGS

Length	Code N°	Weight	Length	Code N°	Weight
1.2	715212	4.80	5.1	715251	20.40
1.8	715218	7.20	5.7	715257	22.80
2.7	715227	10.80	6.4	715264	25.60
3.6	715236	14.40	7.2	715272	28.80
4.2	715242	16.80			

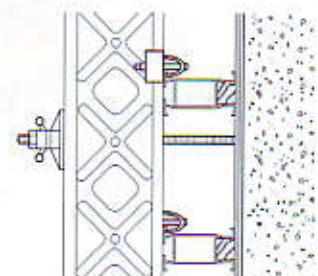
PROPERTIES

Moment of resistance kNm	6.80
Area cm²	11.96
Inertia xxcm⁴	356
Inertia YY cm⁴	43.764
Section Modulus Zxxcm³	47.15
Weight (kg/m)	3.24
Youngs Modulus N/mm²	68900


REQUIRED SOLDIER CENTRES FOR DU-AL T150 WALINGS

Concrete Pressure (kN/sq.m)	Waling Vertical Spacing (mm)							
	175	200	225	250	275	300	325	350
50	2500	2500	2500	2500	2500	2490	2420	2370
60	2500	2500	2500	2490	2410	2350	2290	2230
70	2500	2500	2450	2370	2300	2230	2170	2120
80	2500	2440	2350	2270	2200	2140	2080	2020
90	2450	2350	2260	2180	2120	2060	1940	1800

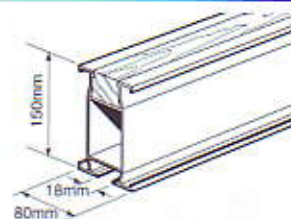
For spans exceeding 2500mm, contact SGB Technical Services for guidance.


T150 ALUMINIUM WALINGS

Length	Code N°	Weight	Length	Code N°	Weight
1.2	717512	6.96	4.2	717542	24.36
1.3	717513	7.54	4.8	717548	27.84
1.6	717516	9.28	5.0	717550	29.05
1.8	717518	10.44	5.4	717554	31.37
2.5	717525	14.55	6.4	717564	37.16
3.6	717536	20.92	7.2	717572	41.76
3.9	717539	22.66			

PROPERTIES

Moment of resistance kNm	13.00
Area cm²	18.87
Inertia xxcm⁴	574.30
Inertia YY cm⁴	147.4
Section Modulus Zxxcm³	75.36
Weight (kg/m)	5.81
Youngs Modulus N/mm²	68900

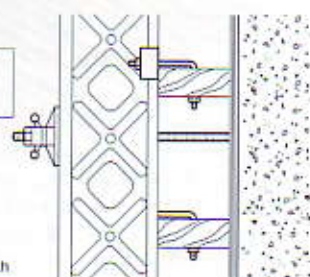


Important: In some world areas outside the UK, SGB also offers steel channel walings. For details please contact SGB International.


REQUIRED SOLDIER CENTRES FOR TIMBER WALINGS*

Concrete Pressure (kN/sq.m)	Timber Waling Size (mm)	Vertical Spacing (mm)							
		175	200	225	250	275	300	325	350
50	150x75	1800	1690	1590	1510	1440	1380	1320	1260
60	150x75	1640	1540	1450	1380	1310	1230	1140	1060
70	150x75	1520	1420	1340	1260	1160	1060	990	920
80	150x75	1420	1330	1230	1110	1020	940	870	820
90	150x75	1340	1230	1100	1000	910	840	780	730

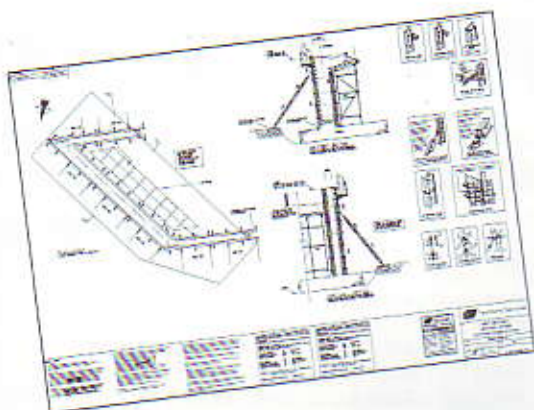
The walings have been considered continuous over THREE spans. Timber properties for Grade SC4 have been employed in accordance with "Formwork - A Guide to Good Practice." Concrete Society/Institution of Structural Engineers.



*SGB does not supply timber. The above figures should be used as a guide only.

GUIDE TO WALLFORM CONSTRUCTION

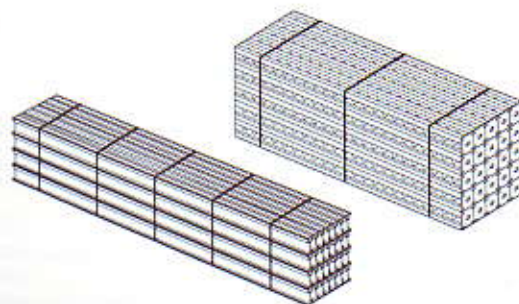
1



The design is checked by the client as a correct interpretation of requirements.

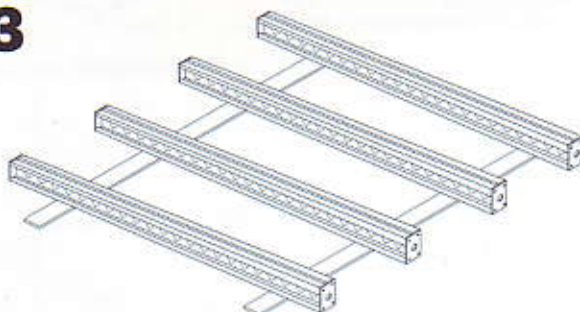
A WORKING DRAWING is then issued by SGB Formwork to allow erection of Formwork on the job site.

2



The SGB Formwork equipment arrives on site in bundles. MKII Soldiers, Dual Waling Beams and Ancillary components such as tie-rods and Plastic Sleeving etc. The client will provide M16 & M12 spanners plus a hammer for nailing the ply.

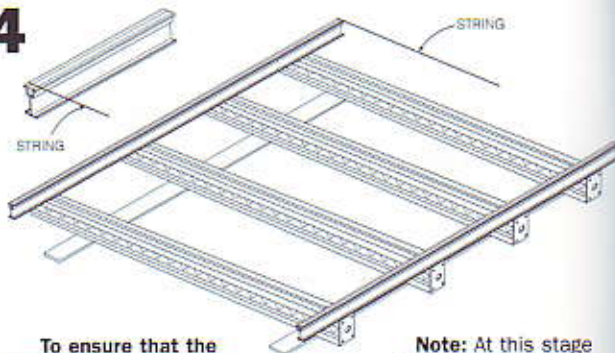
3



The MKII Soldiers are spaced to the required centres ready to receive the waling members.

Fitting out is best done on even ground. If this is not possible, scaffold boards should be laid down to provide a common level for the Soldiers.

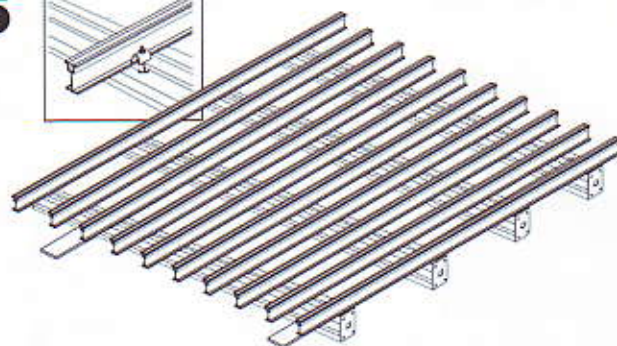
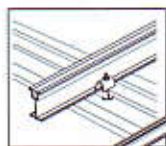
4



To ensure that the walings edges line up, it is good practice to fix a length of string between the top and bottom walings at both ends.

Note: At this stage it is important to check that the Soldiers are still parallel to each other, and the walings are at right angles to the Soldiers.

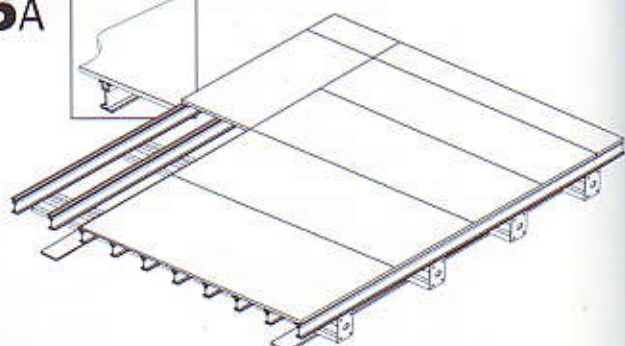
5



The DU-AL walings are now fixed to the Soldiers using Universal Clamps.

Walings should be spaced at the appropriate centres as specified in the design supplied. The Universal Clamps are positioned above and below the waling at alternate positions.

6A

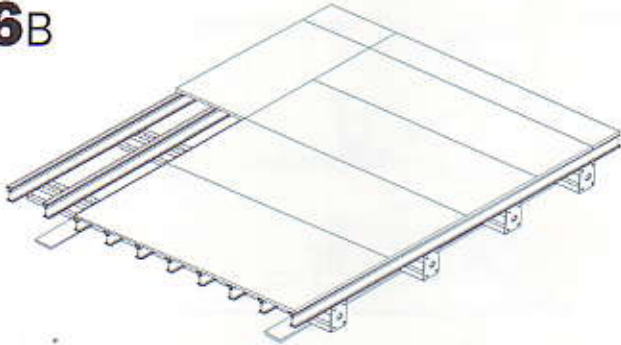


The Plywood is laid out with the edges flush with the DU-AL walings.

This is the most straight forward method of laying out the plywood but will require the form ends to be taped, to prevent any grout loss during pouring.

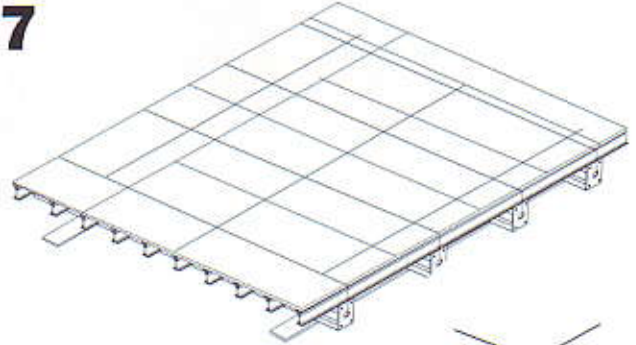
SGB MKII SOLDIER DUAL WALLFORM ERECTION GUIDE

6B

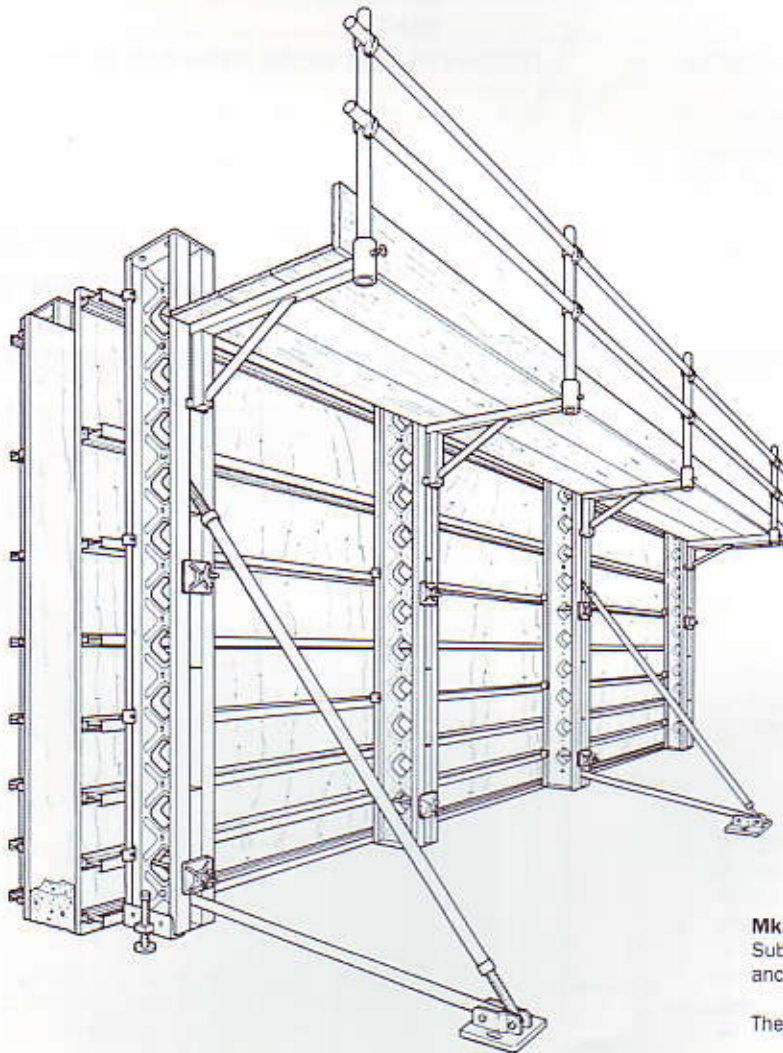
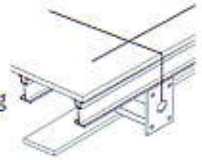


Plywood is laid out with a 50mm offset, both ends. The layout should be identical on forms butting against each other.

7



Tie holes may now be marked on the plyface. This is done by lining up the centres of the MKII Soldier, top and bottom, with a piece of string or a straight edge. A 16mm dia. hole can then be drilled.



MKII WALLFORM COMPLETE

Subject to the site requirements, the different ancillary components may be added.

The formwork is then ready for use.

MKII SOLDIER SYSTEM

CIRCULAR FORMWORK

The SGB CIRCULAR FORMWORK SYSTEM eliminates the need for special curved walings by flexing the plywood form face to the required radius. The minimum recommended radius is 2m using the appropriate plywoods.

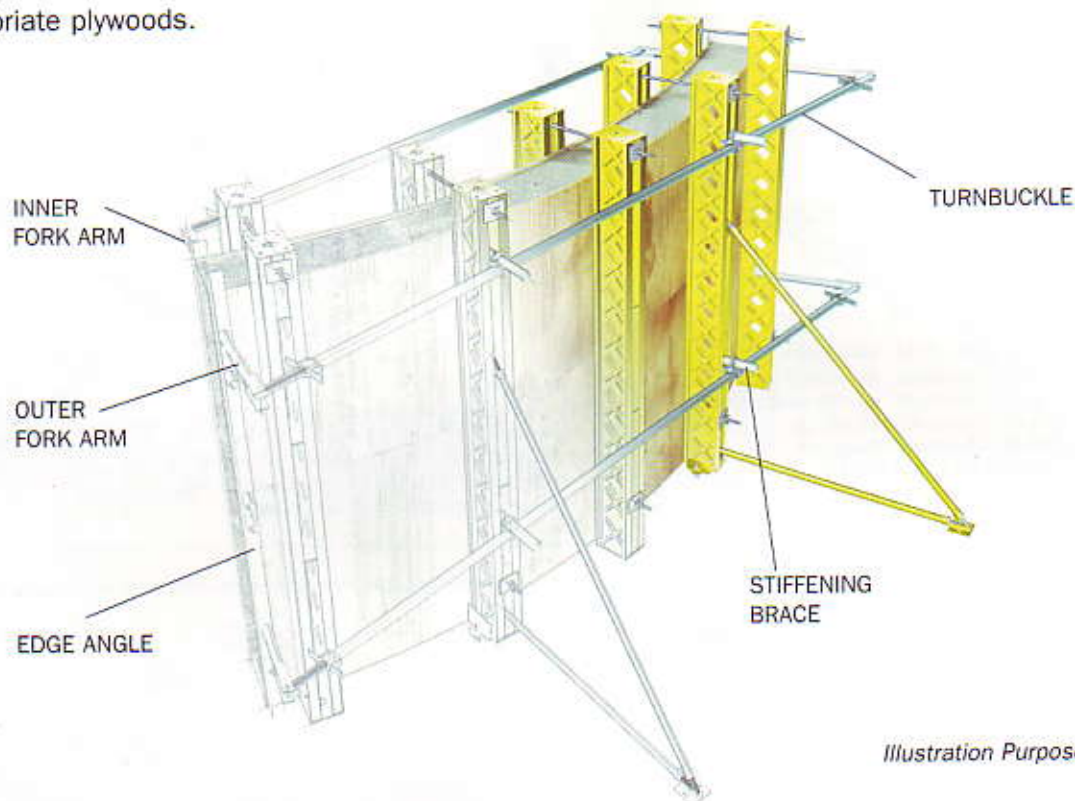
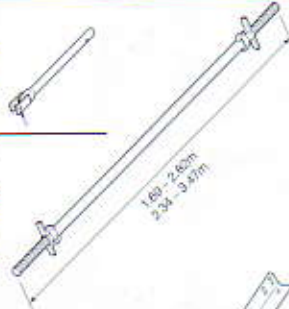


Illustration Purposes only


CIRCULAR FORMWORK

COMPONENTS


FORK ARM			
	Painted	Galvanised	Weight
	Code N°	Code N°	kg
Outer	444005	444305	4.0
Inner	444006	444306	2.0




TURNBUCKLE			
	Painted	Galvanised	Weight
	Code N°	Code N°	kg
Standard	444009	444309	18.0
Short	444010	444310	10.0



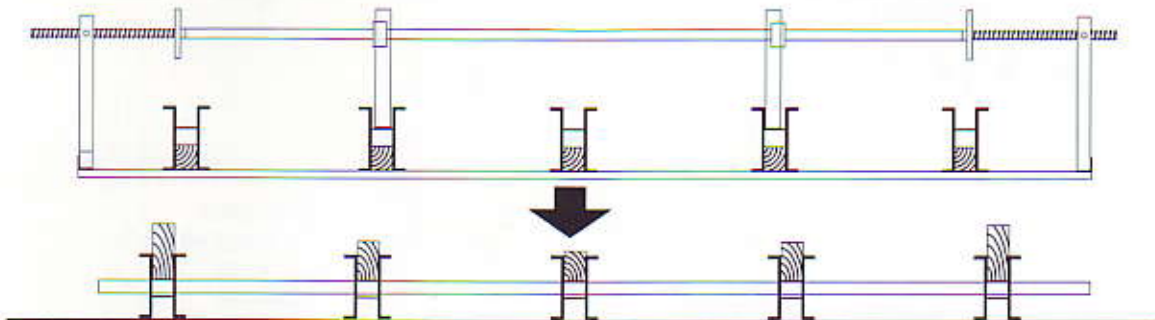
STIFFENING BRACE			
	Painted	Galvanised	Weight
	Code N°	Code N°	kg
	444007	444307	2.80



EDGE ANGLE			
Length	Painted	Galvanised	Weight
	Code N°	Code N°	kg
1.2m	444004	444304	16.00
1.8m	444011	444311	23.00
2.7m	444003	444303	35.00
3.0m	444002	444302	39.00
3.6m	444001	444301	47.00



TIME SAVING FOR CURVING SEVERAL PANELS

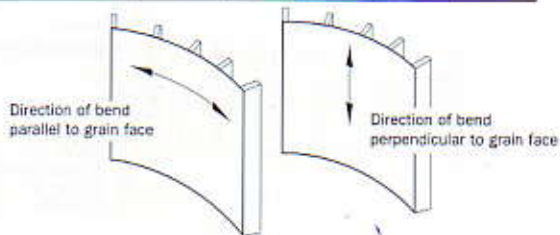


Where several formwork assemblies are to be curved, a curving 'bed' can be assembled to simplify the process. Lay a minimum of 5 soldiers on the ground, linked with scaffold tubes to prevent lateral movement. Bolt timber firing pieces of appropriate height into soldiers and check

with curve template. When the formwork assembly is lowered onto this bed, its self-weight will pull it into the required curve as the turnbuckles are adjusted. Alternatively, a bed may be assembled from scrap plywood and timber framing on-site.

MINIMUM BENDING RADII FOR PLYWOOD

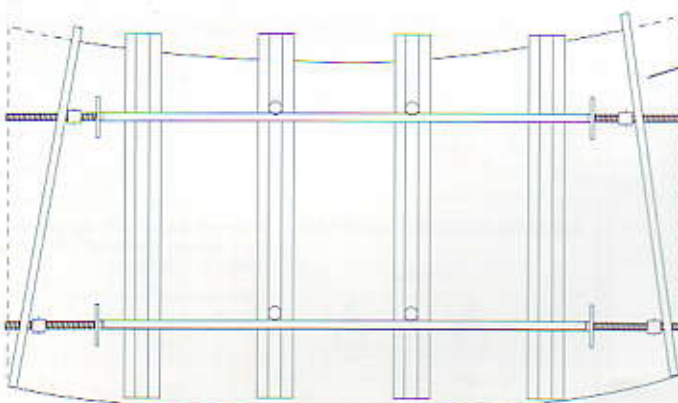
Thickness of Plywood not exceeding:	6.5mm	9mm	13mm	16mm	19mm
Direction of bend parallel to face grain	1.5m	2.4m	3.6m	4.8m	7.0m
Direction of bend perpendicular to face grain	0.7m	1.5m	2.4m	3.6m	4.8m



SCHEDULE OF BOLTS

Description	Used For:
M10 x 90° countersunk square hexagon (bolt & nut) HT	Fixing continuous timber batten to soldier
M10 x 40 90° countersunk square hexagon (screw & nut) HT	Fixing edge angles to plywood
M 16x 35 Hexagon round hexagon (bolt & nut) HT	Joining two shutter units together
M10 x 70 Hexagon round hexagon (bolt & nut) HT	Fixing fork arms into spigots of edge angles
M10 x 70 Hexagon round hexagon (bolt & nut) HT	Fixing turnbuckles to fork arms
M1 6x 75 Hexagon round hexagon (bolt & nut) HT	Fixing stiffening braces to soldiers

CURVING SLOPING WALLS WITH VARYING RADII



Plywood sheet trimmed to account for different arc lengths (as shown on SGB Formwork drawing). Edge angle fixed to cut edge.

Where the curved wall is to slope, the formwork panels can be tapered. It is not normally necessary to arrange the soldiers into a fan pattern, lay them parallel as normal (though they will not align with the edge angles). Edge angles will be fixed to the cut edge of the sheet. See SGB design drawings for full details.

MKII SOLDIER SYSTEM

VERTICAL SHORING

The SGB MkII Soldier in conjunction with the shoring accessory components can be used as a back prop or vertical shore. In this application, with this equipment, loading capacities of up to 100kN can be sustained, at up to 10 metres. Standard scaffold tube can be used to brace towers for extra stability.

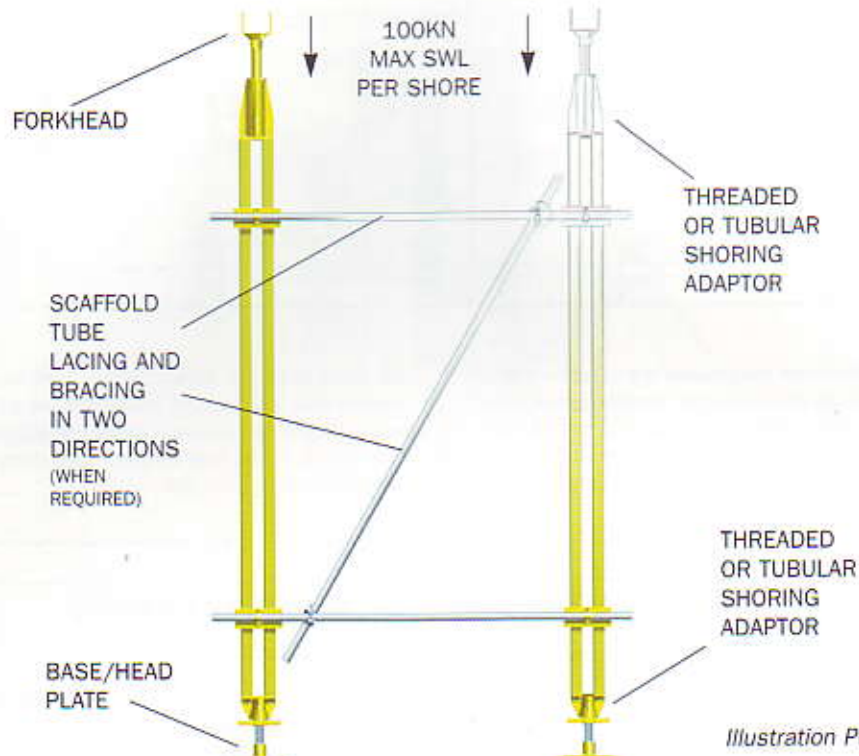
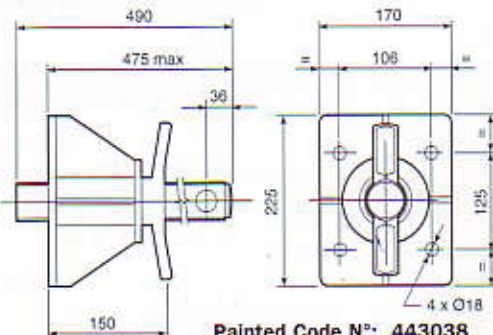
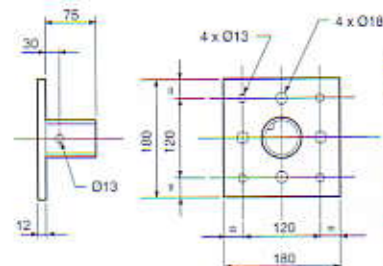


Illustration Purposes only

THREADED SHORING ADAPTER



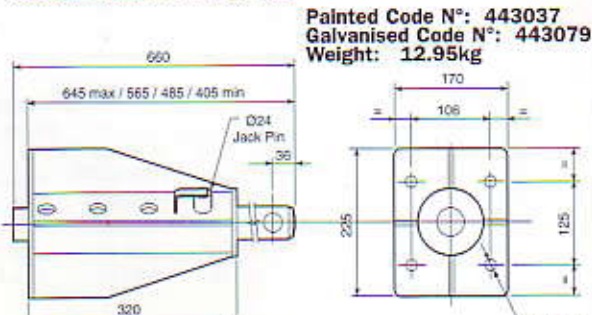
Painted Code N°: 443038
Galvanised Code N°: 443238
Weight: 8.5kg



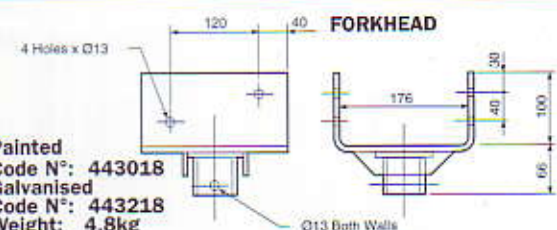
BASE/ HEAD PLATE

Painted
Code N°: 443022
Galvanised
Code N°: 443084
Weight: 3.2kg

TUBULAR SHORING ADAPTOR



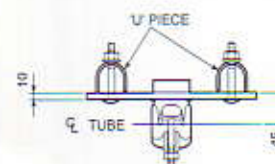
Painted Code N°: 443037
Galvanised Code N°: 443079
Weight: 12.95kg



FORKHEAD

Painted
Code N°: 443018
Galvanised
Code N°: 443218
Weight: 4.8kg

SOLDIER BRACING COUPLER



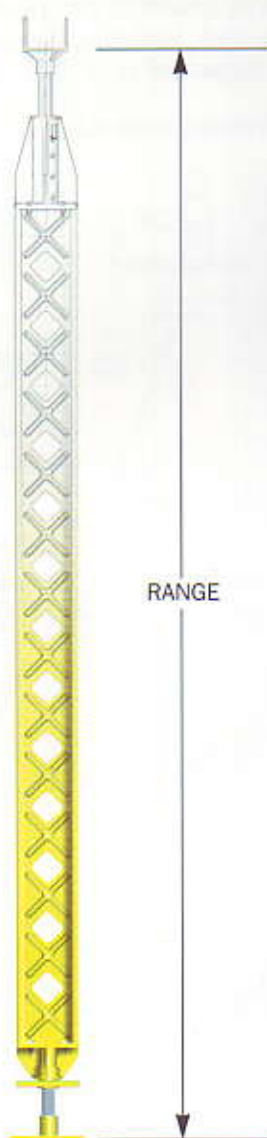
Painted Code N°: 443035
Galvanised Code N°: 443235
Weight: 3.9kg



VERTICAL SHORING

HEIGHT MAKE UP & LOADING

USING SOLDIERS AS A VERTICAL SHORE



RANGE		SOLDIERS							SHORING ADAPTOR		Forkhead	Baseplate	M16 x 35 H.T. Set Screws & Nuts (Grade 8.8)	Weightkg
MIN	MAX	0.450	0.900	1.125	1.800	2.700	3.150	3.600	Threaded Bottom	Tubular Top				
1178	1598	1	-	-	-	-	-	-	1	1	1	1	8	42.34
1558	2048	-	1	-	-	-	-	-	1	1	1	1	8	52.12
1783	2273	-	-	1	-	-	-	-	1	1	1	1	8	56.12
2008	2498	1	1	-	-	-	-	-	1	1	1	1	12	64.23
2233	2723	1	-	1	-	-	-	-	1	1	1	1	12	68.23
2458	2948	-	-	-	1	-	-	-	1	1	1	1	8	68.11
2683	3173	-	1	1	-	-	-	-	1	1	1	1	12	78.01
2908	3398	1	-	-	1	-	-	-	1	1	1	1	12	80.22
3133	3623	1	1	1	-	-	-	-	1	1	1	1	16	90.14
3358	3848	-	-	-	-	1	-	-	1	1	1	1	8	84.89
3583	4073	-	-	1	1	-	-	-	1	1	1	1	12	94.00
3808	4298	-	-	-	-	-	1	-	1	1	1	1	8	93.27
4033	4523	-	-	3	-	-	-	-	1	1	1	1	16	107.92
4258	4748	-	-	-	-	-	-	1	1	1	1	1	8	101.66
4483	4973	-	-	1	-	1	-	-	1	1	1	1	12	110.78
4708	5198	1	-	-	-	-	-	1	1	1	1	1	12	113.77
4933	5423	-	-	1	-	-	1	-	1	1	1	1	12	119.16
5158	5648	-	1	-	-	-	-	1	1	1	1	1	12	123.55
5383	5873	-	-	1	-	-	-	1	1	1	1	1	12	127.55
5608	6098	-	-	-	1	-	1	-	1	1	1	1	12	131.15
5833	6323	-	1	1	-	-	1	-	1	1	1	1	16	141.09
6058	6548	-	-	-	1	-	-	1	1	1	1	1	12	139.54
6283	6773	-	1	1	-	-	-	1	1	1	1	1	16	149.46
6508	6998	-	-	-	-	1	1	-	1	1	1	1	12	146.93
6733	7223	-	-	1	1	-	1	-	1	1	1	1	16	157.06
6958	7448	-	-	-	-	1	-	1	1	1	1	1	12	156.32
7183	7673	-	-	1	1	-	-	1	1	1	1	1	16	165.45
7408	7898	-	-	-	-	-	1	1	1	1	1	1	12	164.70
7633	8123	-	-	1	-	1	1	-	1	1	1	1	16	173.84
7858	8348	-	-	-	-	-	-	2	1	1	1	1	12	173.09
8083	8573	-	-	1	-	1	-	1	1	1	1	1	16	182.23
8308	8798	-	-	-	1	1	1	-	1	1	1	1	16	185.83
8533	9023	-	-	1	-	-	1	1	1	1	1	1	16	190.61
8758	9248	-	-	-	1	1	-	1	1	1	1	1	16	194.22
8983	9473	-	-	1	-	-	-	2	1	1	1	1	16	199.00
9208	9698	-	-	-	-	2	1	-	1	1	1	1	16	202.61
9658	10148	-	-	-	-	1	-	2	1	1	1	1	16	210.99

LOADING DATA



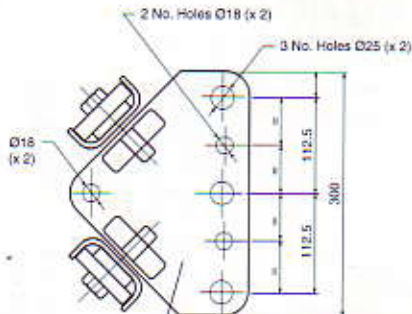
*A MKII Head & Base Plate may be used instead of the Forkhead.

** To secure either the Forkhead or Head/Base Plate to the Shoring Adaptors a M12x80 HT bolt & nut may be used.

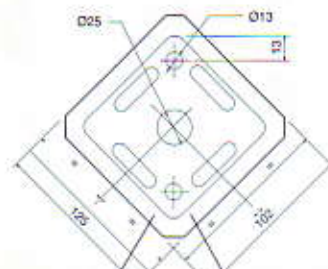
This graph shows the relationship between the allowable loads and the height or length of unbraced shores.

INCLINED SHORING

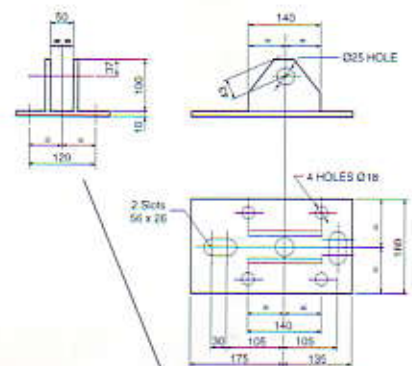
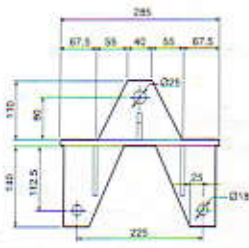
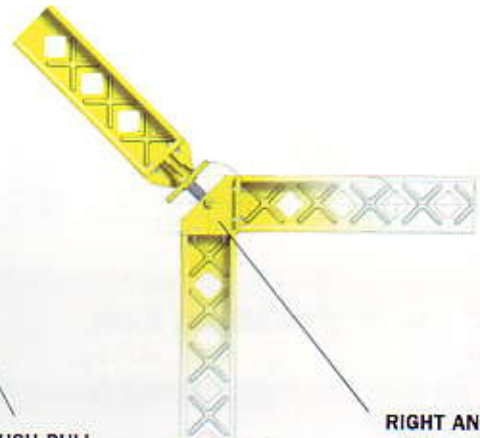
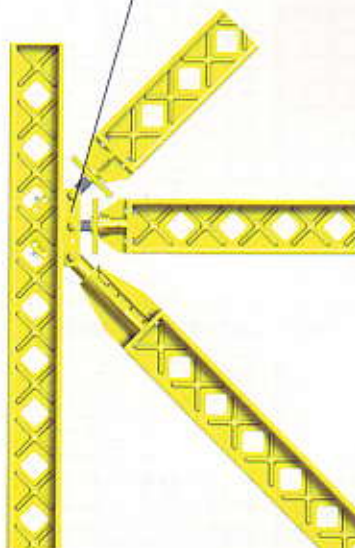
PUSH PULL BRACKET



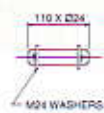
WEB BEARING PLATES



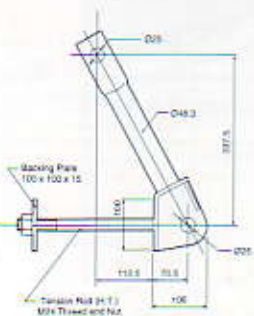
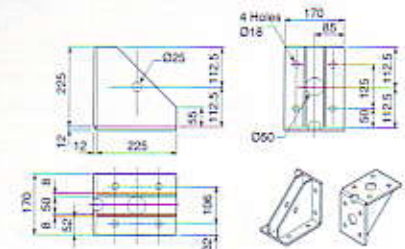
SWIVEL BASE PLATE

TUBULAR
SHORING
ADAPTOR

Technical drawing of a mechanical part, showing a cross-section with dimensions: 170, 52, 8, 50, 81.



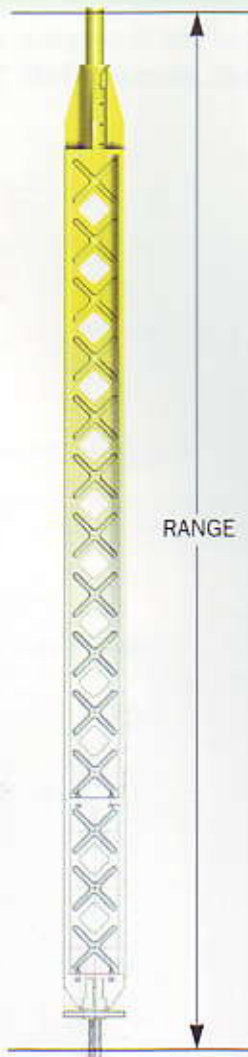
Technical drawing of a shaft with a keyway. The shaft has a total length of 100 units. The diameter of the shaft is 48 units. The keyway is located in the center of the shaft, with a width of 100 units.

RIGHT ANGLE
CONNECTOR

Painted Code N°: 443047
Galvanised Code N°: 443247
Weight: 11.2kg

INCLINED SHORING

HEIGHT MAKE UP & LOADING

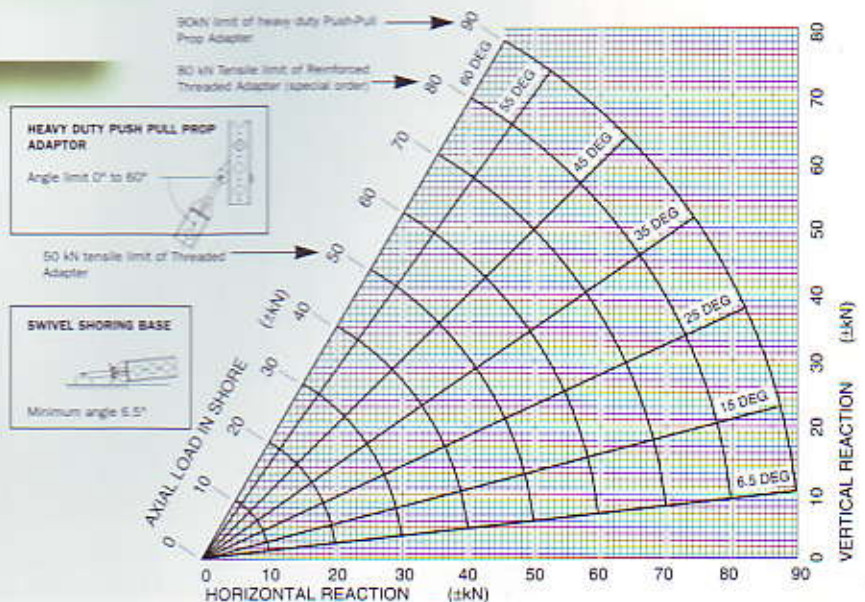
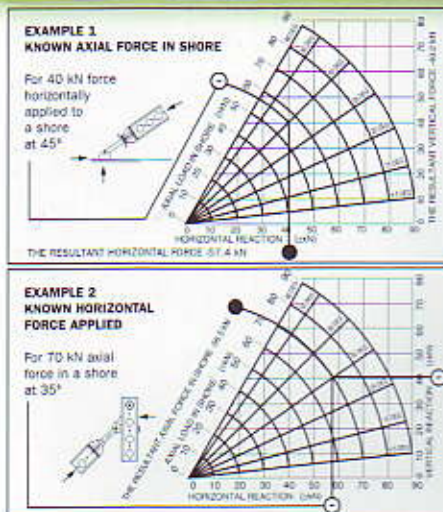


USING SOLDIERS AS A RAKING SHORE

RANGE		SOLDIERS							SHORING ADAPTOR		END OPTION 1	END OPTION 2	M16 x 35 H.T. Set Screws & Nuts (Grade 8.8)	Weight kg excluding adaptor and base
MIN	MAX	0.450	0.900	1.125	1.800	2.700	3.150	3.600	Threaded	Tubular	Swivel Base Plate	H.D Push Pull Prop Adaptor		
1078	1498	1	-	-	-	-	-	-	1	1	1	1	8	33.68
1468	1948	-	1	-	-	-	-	-	1	1	1	1	8	43.82
1693	2173	-	-	1	-	-	-	-	1	1	1	1	8	47.82
1918	2398	1	1	-	-	-	-	-	1	1	1	1	12	55.93
2143	2623	1	-	1	-	-	-	-	1	1	1	1	12	59.93
2368	2848	-	-	-	1	-	-	-	1	1	1	1	8	59.81
2593	3073	-	1	1	-	-	-	-	1	1	1	1	12	69.71
2818	3298	1	-	-	1	-	-	-	1	1	1	1	12	71.92
3043	3523	1	1	1	-	-	-	-	1	1	1	1	16	81.84
3268	3748	-	-	-	-	1	-	-	1	1	1	1	8	76.59
3493	3973	-	-	1	1	-	-	-	1	1	1	1	12	85.70
3718	4198	-	-	-	-	-	1	-	1	1	1	1	8	84.94
3943	4423	-	-	3	-	-	-	-	1	1	1	1	16	99.62
4168	4648	-	-	-	-	-	-	1	1	1	1	1	8	93.36
4393	4873	-	-	1	-	1	-	-	1	1	1	1	12	102.48
4618	5098	1	-	-	-	-	-	1	1	1	1	1	12	105.47
4843	5323	-	-	1	-	-	1	-	1	1	1	1	12	110.86
5068	5548	-	1	-	-	-	-	1	1	1	1	1	12	115.25
5293	5773	-	-	1	-	-	-	1	1	1	1	1	12	119.25
5518	5998	-	-	-	1	-	1	-	1	1	1	1	12	122.85
5743	6223	-	1	1	-	-	1	-	1	1	1	1	12	132.77
5968	6448	-	-	-	1	-	-	1	1	1	1	1	16	131.24
6193	6673	-	1	1	-	-	-	1	1	1	1	1	12	141.16
6418	6898	-	-	-	-	1	1	-	1	1	1	1	16	139.63
6643	7132	-	-	1	1	-	1	-	1	1	1	1	12	148.76
6868	7348	-	-	-	-	1	-	1	1	1	1	1	16	148.02
7093	7573	-	-	1	1	-	-	1	1	1	1	1	12	157.15
7318	7798	-	-	-	-	-	1	1	1	1	1	1	16	156.40
7543	8023	-	-	1	-	1	1	-	1	1	1	1	12	165.54
7768	8248	-	-	-	-	-	-	2	1	1	1	1	16	164.79
7993	8373	-	-	1	-	1	-	1	1	1	1	1	12	173.93
8218	8698	-	-	-	1	1	1	-	1	1	1	1	16	177.53
8443	8923	-	-	1	-	-	1	1	1	1	1	1	16	182.31
8668	9148	-	-	-	1	1	-	1	1	1	1	1	16	185.92
8893	9373	-	-	1	-	-	-	2	1	1	1	1	16	190.70
9118	9598	-	-	-	-	2	1	-	1	1	1	1	16	194.31
9568	10048	-	-	-	1	-	-	2	1	1	1	1	16	202.69

RANGE MEASURED FROM Ø 25 HOLES IN SHORING ADAPTORS TUBE OR THREADED

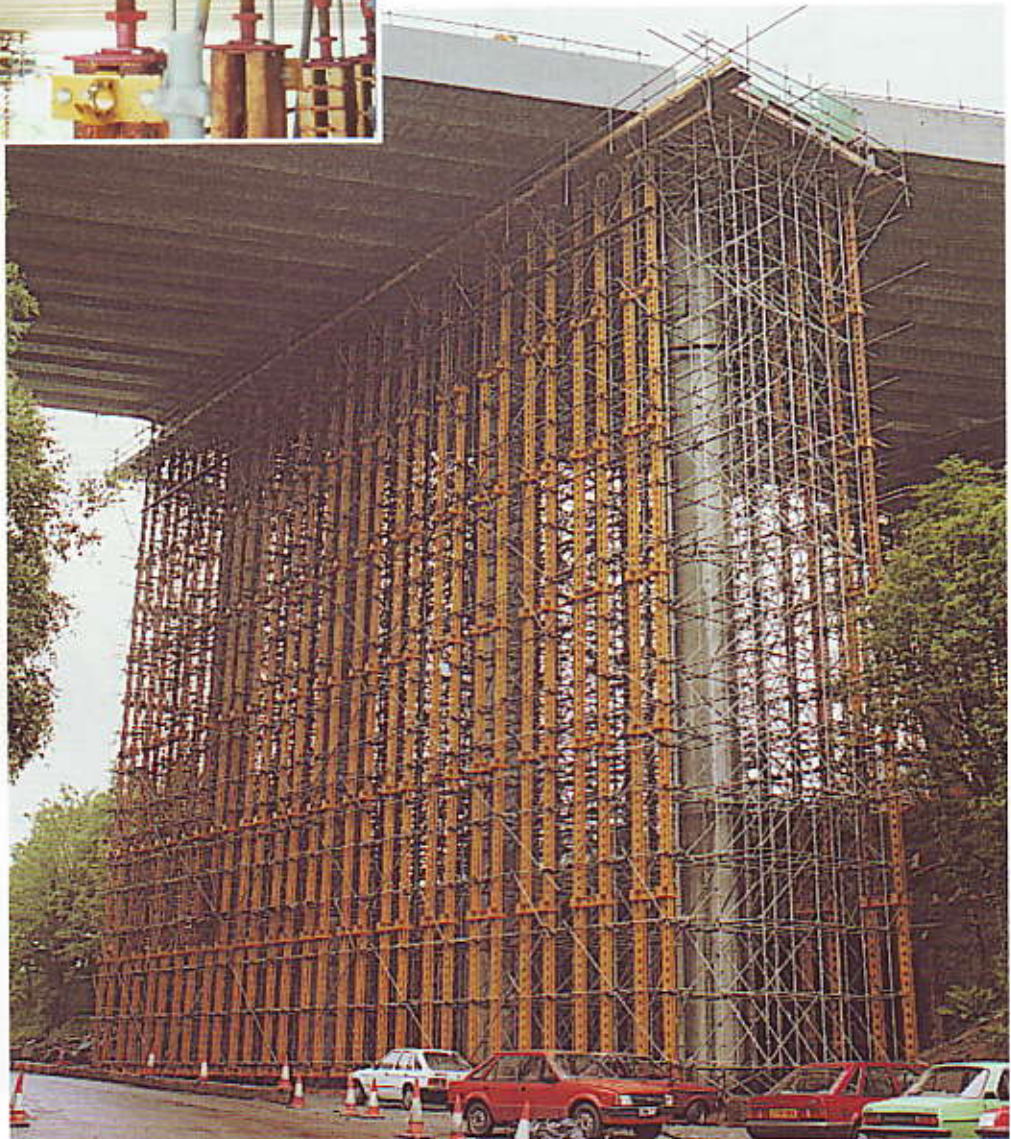
LOADING DATA

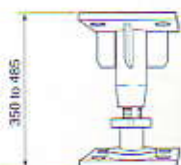


MKII SOLDIER SYSTEM

ULTRA HEAVY DUTY SHORING

In certain circumstances, there is a requirement to support very high loadings. The normal option is to utilise more shores. This can be costly, both in terms of equipment and in the time taken to prepare ground, erection and levelling. By utilising particular key components, standard MkII Soldiers can be used to take a safe working load of up to 32 tonnes.





MULTISHORE SWIVEL JACK

Provides adjustment in a range from 350 to 485mm for final levelling.

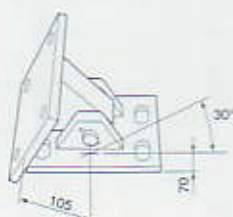
SWL = 320KN

Painted Code N°: 443013

Galvanised Code N°: 443213

Weight: 20kg

4 N° M16 x 35 HT set screw and nuts are required per Soldier end.



MULTISHORE PIVOT BASE

To accommodate sloping levels in either base or soffit conditions.

SWL = 200KN

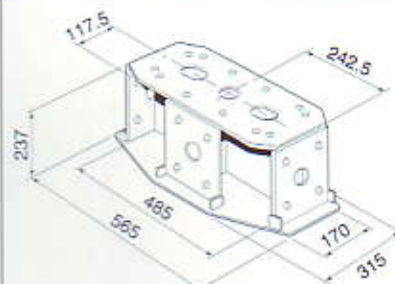
Painted Code N°: 443014

Galvanised Code N°: 443214

Weight: 20kg

4 N° M16 x 35 HT set screw and nuts are required per Soldier end.

Only to be used with Multishore Swivel Jack.



MULTIWAY CONNECTOR

Allows Soldiers to be fixed at right angles or next to each other to then concentrate the loads to one Multishore Swivel Jack.

For loadings refer to your local SGB Formwork design office.

Painted Code N°: 443029

Galvanised Code N°: 443089

Weight: 29.0kg

4 N° M16 x 35 HT set screw and nuts are required per Soldier end.

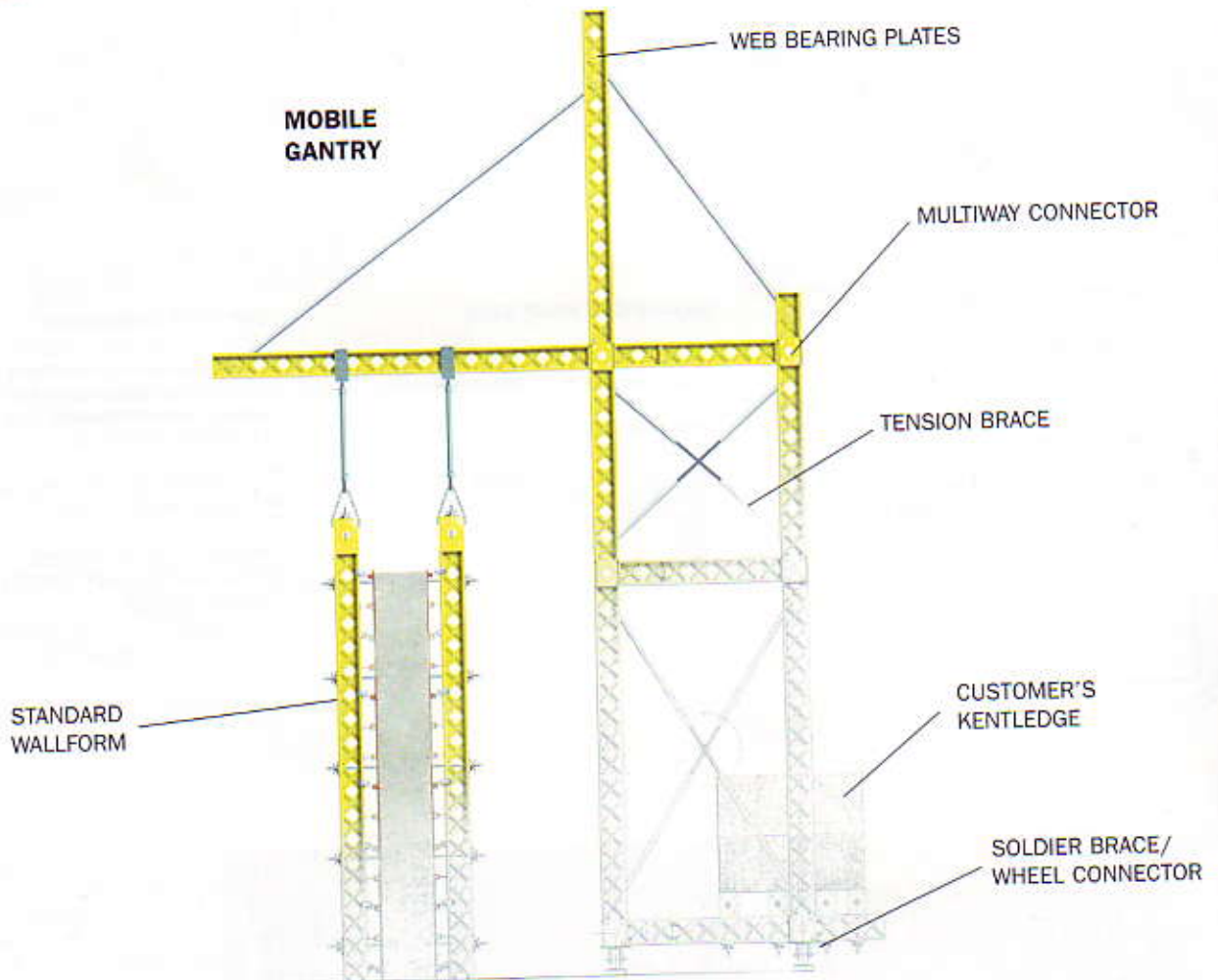


*For technical or design enquiries please contact your nearest SGB Formwork Design Office.

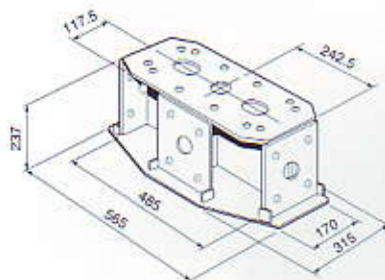
MKII SOLDIER SYSTEM

FRAME APPLICATIONS

Due to its effective design, the SGB MkII Soldier is also ideal as a structural member, complete with a range of components. The system has been successfully used for frame structures ranging from the facade support for refurbishment of multi storey buildings, to travelling gantries to move formwork shutters.



COMPONENTS



MULTIWAY CONNECTOR

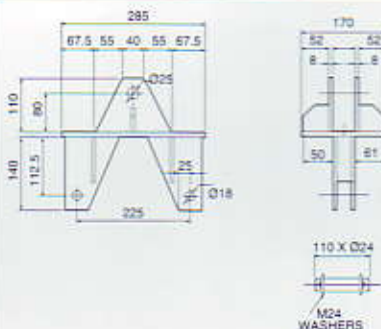
The versatile Multiway Connector enables the Soldiers to be erected as a three dimensional frame, allowing Soldiers to be connected on either axis for a single or double Soldier.

Painted Code N°: 443029

Galvanised Code N°: 443089

Weight: 29.0kg

4 N° M16 x 35 HT set screw & nuts
per Soldier end are required.



**SOLDIER BRACE/WHEEL
CONNECTOR**

A dual purpose component used either with a wheel for creating a mobile system or without the wheel, as a connection for Shoring Adaptor bracing.

Painted Code N°: 443072

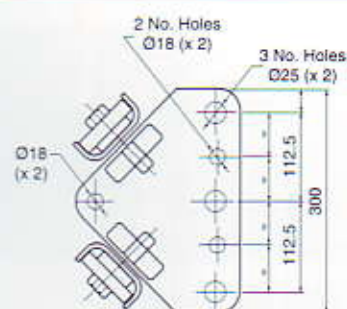
Galvanised Code N°: 443272

Weight: 9.0Kg

2 N°. M16 x 90 HT bolt & nuts are required.

Wheel Code

N°: 443073



PUSH PULL BRACKET (COMPLETE)

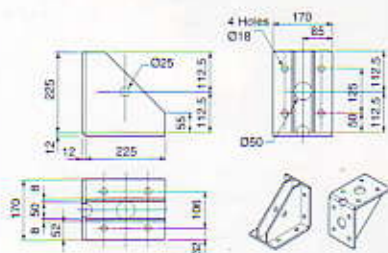
Used to give a positive connection for up to 3 No Shoring Adaptors to Soldiers either horizontally, vertically or diagonally.

Painted Code N° 443027

Galvanised Code N°: 443077

Weight: 13.0kg

1 N°. M24 x 90 HT bolt & nut
(grade 8.8) per Shoring Adaptor.



RIGHT ANGLE CONNECTOR

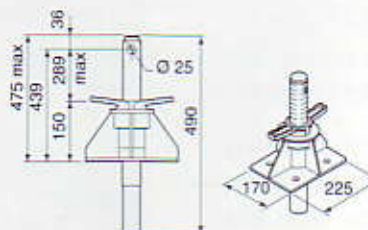
Used for fixing Soldiers end to end at right angles.

Painted Code N° 443047

Galvanised Code N°: 443247

Weight: 11.2kg

4 No. M16 x 35 HT set screw & nuts
per Soldier end.



THREADED SHORING ADAPTOR

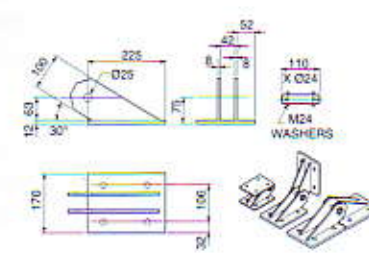
Used for fine adjustment of forms, providing an adjustment of 150mm to 475mm.

Painted Code N° 443038

Galvanised Code N°: 443238

Weight: 8,5kg

4 N° M16 x 35 HT set screw & nuts are required.



SWIVEL CONNECTOR

Fixed to the ends of two Soldiers to provide a hinge mechanism with an angle range from 59-180°.

Painted Code No 443071

Galvanised Code N°: 443271

Weight: 6.1kg

4 N°. M16x35 HT set screw & nuts
per Soldier end.

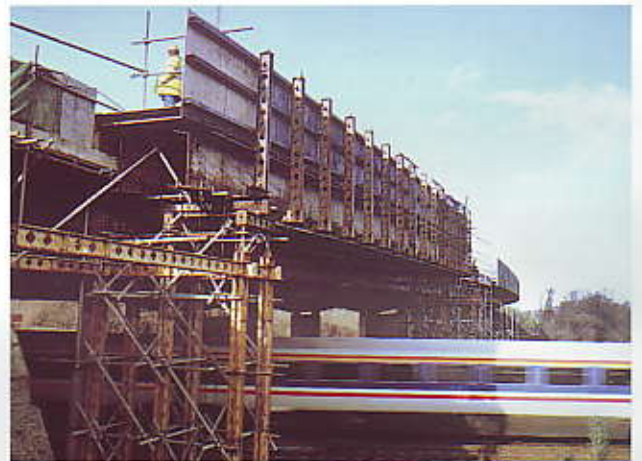


Construction of bridges and parapets often requires the area beneath the structure to remain operative. For example railway lines or roadways.

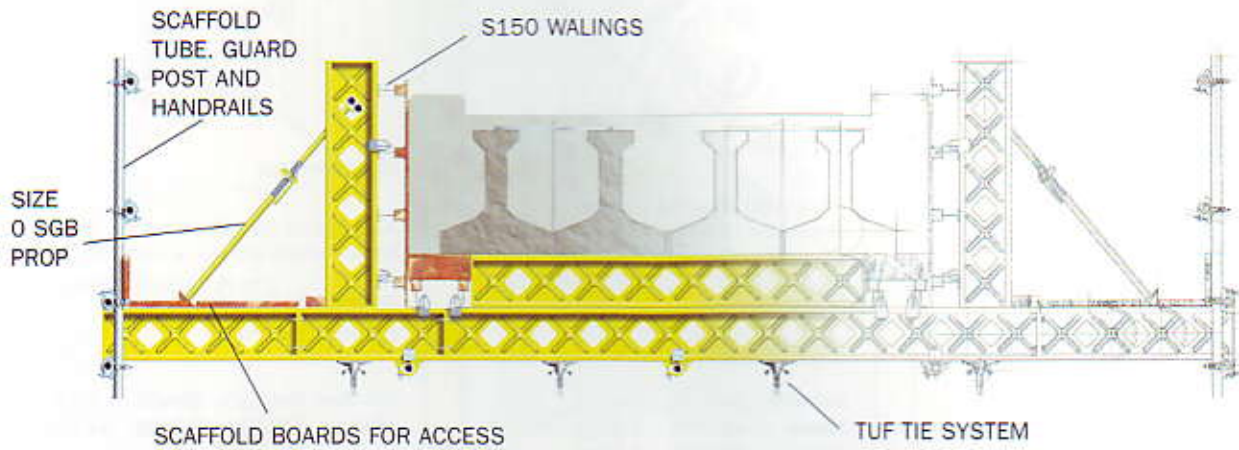
A successful temporary works solution must be able to create the form required and maintain safe clearances.

Through the use of its MKII Soldier System SGB offers a variety of alternatives to cater for various construction techniques.

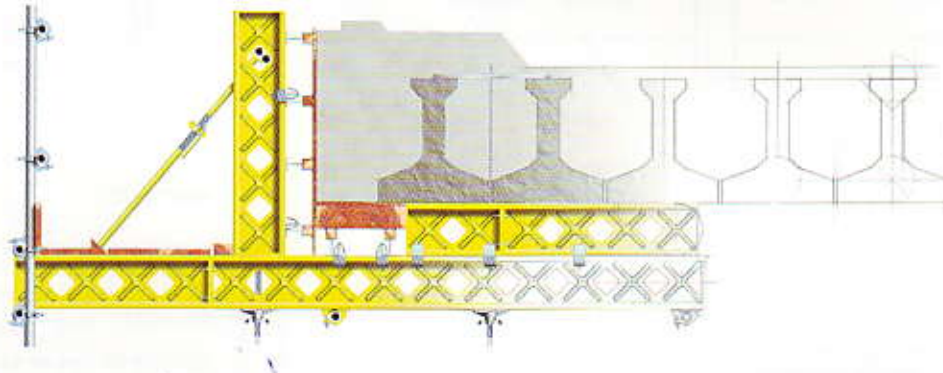
Successful on many major construction projects, SGB are experts in resolving the difficulties public work construction can sometimes pose.



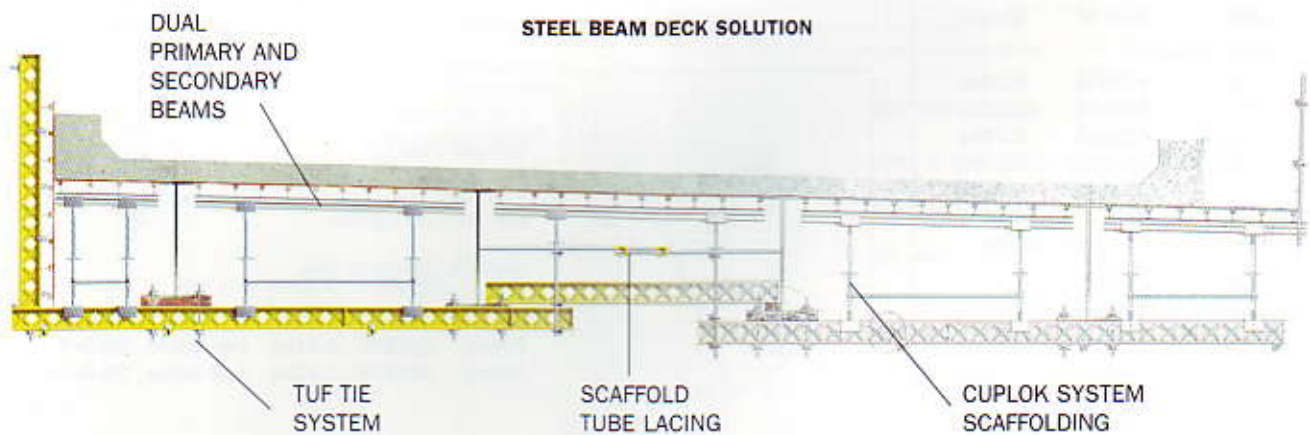
PRECAST DECK SOLUTION



PRECAST DECK -PARAPET SOLUTION



STEEL BEAM DECK SOLUTION



TIE EQUIPMENT

TUF TIE (THROUGH TIE SYSTEM)



TUF TIE ROD

Continuous threaded rods, specifically designed and manufactured for use as formwork tie rods for all types of concrete structures. 15mm and 20mm tie rods and accessories are compatible with all other leading makes.

Available for hire or sale.

Length	Code N°	Weight
15mm diameter		
0.75m	421831	1.13kg
1.00m	421826	1.50kg
1.50m	421832	2.25kg
2.00m	421828	3.00kg
3.00m	421830	4.50kg
5.70m	421829	9.00kg
SWL 95.5 kN (2:1 safety factor)		

20mm diameter		
0.40m	421869	1.07kg
1.00m	421860	2.68kg
1.50m	421870	4.02kg
6.00m	421871	16.08kg
SWL 165 kN (2:1 safety factor)		

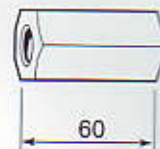


WING NUT

A knock-on Wing Nut used in conjunction with tie plates for securing the rods in formwork applications. Wing Nuts are self colour or anti-rust finish.

Available for hire or sale.

Bar size	Code N°	Weight	SWL
15mm	421839	0.33kg	95.5kN
20mm	421865	0.35kg	165kN



HEXAGON NUT

Available for the 15mm tie bar. Ideal for use where access is restricted.

Available for hire or sale.

Bar size	Code N°	Weight	SWL
15mm	421822	0.23kg	95.5kN

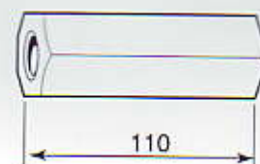


MKII TIE WASHER

Designed with lugs on the base to prevent any rotation when used with SGB MKII Soldiers.

Available for hire or sale.

Bar size	Code N°	Weight	SWL
15mm	443020	0.65kg	115kN

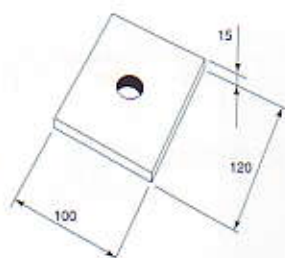


JOINT NUT

Used for the joining of tie rods. Complete with centre stop to ensure equal spacing of bar inside the connector.

Available for hire or sale.

Bar size	Code N°	Weight	SWL
15mm	421823	0.41kg	95.5kN
20mm	421862	0.43kg	165kN



THRUST PLATE

Used with Wing Nuts this can be used to clamp wall shutters together.

Available for hire or sale.

Bar size	Code N°	Weight	Finish	SWL
15mm	421850	1.41kg	Galvanised	95.5kN
20mm	421856	1.41kg	Self colour	95.5kN

Note: All Tuf Tie SWL's may be limited by other components.

TIE EQUIPMENT

TUF TIE (THROUGH TIE SYSTEM)



SWIVEL THRUST PLATE

This plate is of use when clamping is required, for non parallel faces.

Available for hire or sale.

Subject to availability.

Bar size	Code N°	Weight	SWL
15mm	421851	1.30kg	115kN



PLASTIC SLEEVING

Used as a distance keeper between form faces, these allow tie rods to be withdrawn for re-use.

Available in 2 or 3m lengths.

For sale only.

Bar size	Code N°	Weight
15mm	421847	0.66kg
20mm	421872	0.66kg

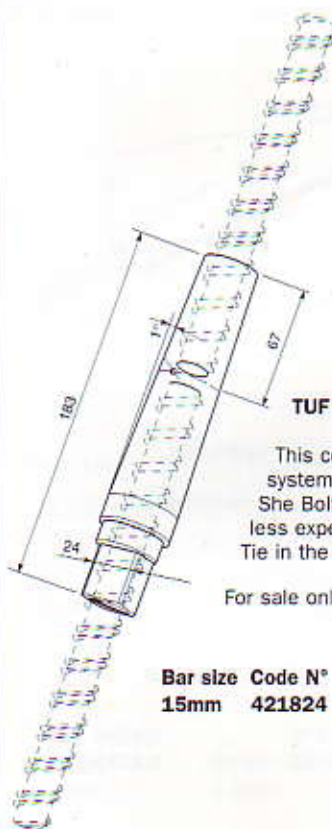


SLEEVING CONE

For use with the Plastic Sleeve tube to suit either 15mm or 20mm tie rod.

For sale only.

Bar size	Code N°	Weight
15mm	421848	0.01kg
20mm	421867	0.02kg

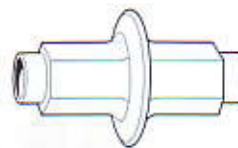


TUF TIE SHE BOLT

This converts a through tie system to form a recoverable She Bolt System. Leaves a less expensive amount of Tuf Tie in the wall.

For sale only.

Bar size	Code N°	Weight	SWL
15mm	421824	0.65kg	95.5kN



WATER BARRIER

Cast into the concrete wall between two tie bars, these allow through tie systems to be used in water retaining structures.

For sale only.

Bar size	Code N°	Weight	SWL
15mm	452520	0.55kg	95.5kN
20mm	452525	0.65kg	165kN



END TIE WASHER

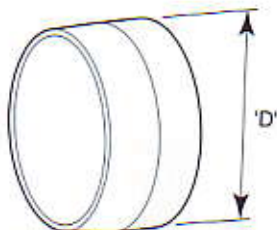
Used in conjunction with standard tie rods and thrust plates these enable two soldiers to be fixed at right angles.

For sale or hire.

Bar size	Painted Code N°	Galvanised Code N°	Weight	SWL
15mm	443034	443234	1.60kg	60kN

TIE EQUIPMENT

TUF TIE (THROUGH TIE SYSTEM)



PLASTIC PLUG

A round tapered Plastic Plugs for filling redundant tie holes in plywood. Choose maximum size possible and hammer in for tight seal.

For sale only.

D size	Code N°	Weight per 1000
20mm	452310	1.85kg
22mm	452311	2.37kg
26mm	452312	5.00kg



WELDABLE ANCHOR

Metal anchors which can be welded to RSJ's and other metal structures to accept 15mm tie rod. Anchors must be welded continuously all the way round. Load tests should be conducted before use.

For sale only.

Bar size	Code N°	Weight
15mm	452320	0.40kg



ROCK ANCHOR

For securing single sided formwork to rock or concrete walls. Hole diameter required 36mm-38mm. Conduct tensile tests before applying final load.

For sale only.

Bar size	Code N°	Weight
15mm	452324	0.30kg



TIE ADAPTER

For use with SGB's CL25 bracket. Internal diameter available = 18/22/25 mm.

Size must be specified.

For sale only.

Hole Diameter	Code N°	Weight
18mm	152393	0.30kg
22mm	152394	0.30kg
25mm	152395	0.30kg



PLASTIC SLEEVE PLUG

A flexible, tight fitting plug for the internal water sealing of Plastic Sleeve. Prior to filling with a recommended grout.

For sale only.

Bar size	Code N°	Weight per 1000
15mm	452316	9.50kg
20mm	452317	14.40kg

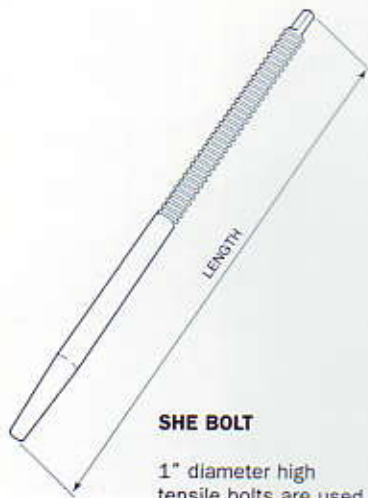


SLEEVE PLUG KEY

For securely fixing Plastic Sleeve Plugs.

For sale only.

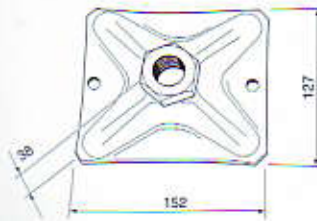
Code N°	Weight
452318	0.12kg

**SHE BOLT**

1" diameter high tensile bolts are used with ties and clamps.

For sale only.

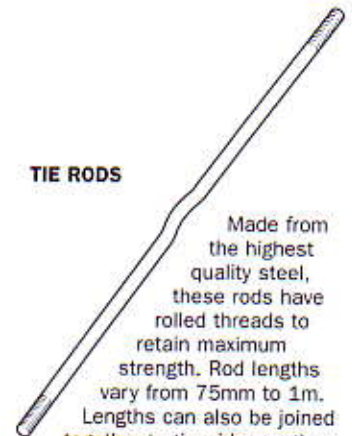
Length	Code N°	Weight
500mm	450850	1.71kg
600mm	450860	2.05kg
700mm	450870	2.39kg

**H4 CLAMP**

These clamps have a large load bearing area and incorporate a captive nut which makes installation and dismantling easier and simpler.

For sale only.

Code N°	Weight
451003	1.52kg

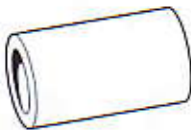
TIE RODS

Made from the highest quality steel, these rods have rolled threads to retain maximum strength. Rod lengths vary from 75mm to 1m. Lengths can also be joined together to tie wider sections, and each rod has a slight crimp that locks into the concrete to eliminate rotation. Diameter = 5/8".
SWL = 96kN (safety factor 1:5:1)
Safety factors:
1.5:1 Expendable tie
2:1 Reusable
1.7:1 Against yield if less than failure.

For sale only.

Lengths available 75mm to 1m in 25mm or 50mm increments.

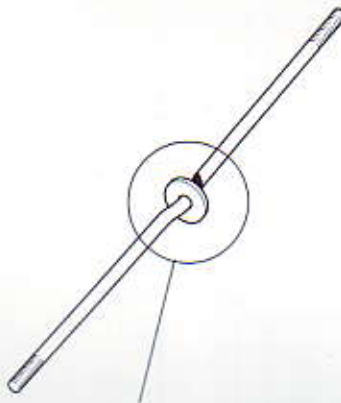
Lengths under 175mm do not have a crimp in the bar.

**COUPLING**

Coupling joins two or more ties where non standard or extra long ties are required.

For sale only.

Code N°	Weight
452603	0.12kg

**WATER BARRIER**

Made of plastic these barriers simply slip on to standard ties and are as effective as a brazed metal plate for a fraction of the cost. Holes should be sealed for the best results.

For sale only.

Code N°	Weight
452503	0.01kg

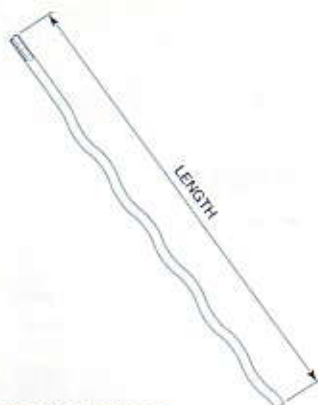
**HIGH TENSILE STUDDING**

(CONTINUOUSLY THREADED ROD)

Not to be confused with CT rod, continuously threaded rod is also available for the customer to then cut to his specific requirement. Available in 3m lengths.

For sale only.

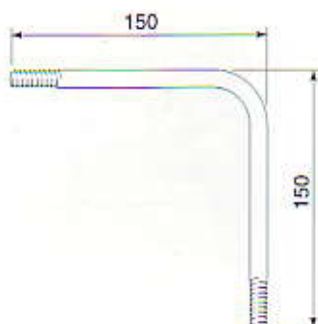
Code No	Weight
450503	3.71kg

**PIGTAIL ANCHORS**

When cast-in provides anchorage into previous concrete pours.

For sale only.

Length	Code N°	Weight
450mm	451345	0.74kg
600mm	451360	0.99

**L ANCHORS**

The L anchor is for use with single face, climbing formwork or anchorage into kickers. It may also be used as a heavy duty anchor.

For sale only.

Code N°	Weight
451603	0.36kg

**H4 RATCHET SPANNER**

Designed for use with the H4 Clamp, this spanner eases use.

For sale only.

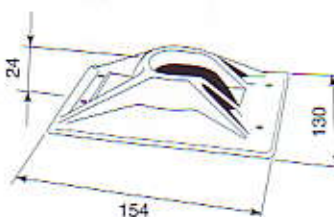
Code N°	Weight
453303	1.93kg

**1" SHE BOLT SPANNER**

For use with the 1" She Bolt.

For sale only.

Code N°	Weight
452403	0.79kg

**B5B CLAMP**

The most versatile clamp. This allows the She Bolt to be passed through at an angle of up to 45° either side of the centre line. Used in conjunction with Wing Nuts.

For sale only.

Code N°	Weight
451010	1.03kg

**W5A WING NUT**

For use with the B5B Clamp.

For sale only.

Code N°	Weight
453203	0.33kg

CL 25 HEAVY DUTY CANTILEVER FRAME

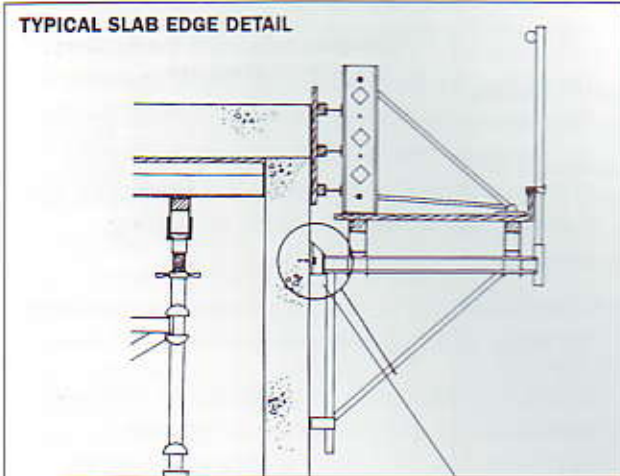


With a safe working load of up to 25 kN, the CL25 bracket can provide safe access and formwork support for lifted pours. It also simplifies the process of fixing soffit edge formwork.

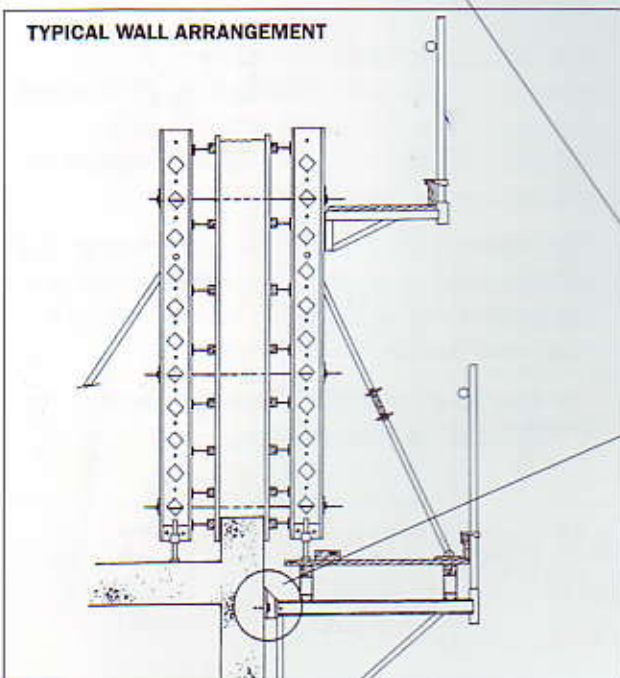
Supported from an existing tie point or cast-in anchor, the triangulated design of the frame allows simple installation and reduces the risk of damage to the concrete finish.

Complete assemblies can be pre-fabricated on the ground and lifted into place to support both personnel and formwork. With decking, toe boards and hand rails, a secure working area can be provided.

TYPICAL SLAB EDGE DETAIL



TYPICAL WALL ARRANGEMENT



FEATURES

- Maximum Safe Working Load of 25kN (2.5 tonnes)
- Single fixing point to concrete
- Can accommodate trailing work platform
- Can be supported from tie fixing point
- Provides safe working deck at any height
- Maximum 2.4m horizontal spacing
- Continuous deck possible around outside corners
- Can be prefabricated at ground level

FIXING

Brackets are normally fixed to an existing cast-in tie point. Recoverable anchor screws can also be used. Minimum concrete strength for all applications is 21 N/mm.

FIXING OPTIONS

STEEL SECTIONS

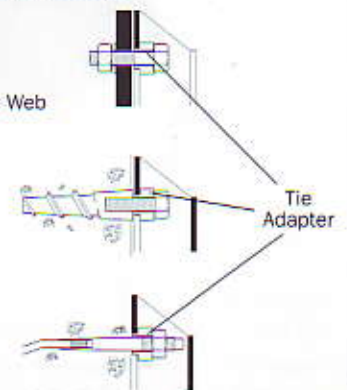
Bolt Through Steel Girder Web

ANCHOR SCREW

Cast-in Anchor

SGB SHE BOLT TIE

Short 1" dia. She-Bolt
Reinstated into She-Bolt Cavity





Magnaform large panel system



MKII Soldier system



Aluminium Shoring system

THE WORKOUT DISK

The "Workout Disk" allows customers to produce their own Formwork and Falsework designs using the complete range of SGB Formwork's products.

Designed by formwork engineers for formwork engineers, using expertise gained on some of the World's largest and most complex projects, the Workout Disk cuts right through the strain spent on designing temporary works.

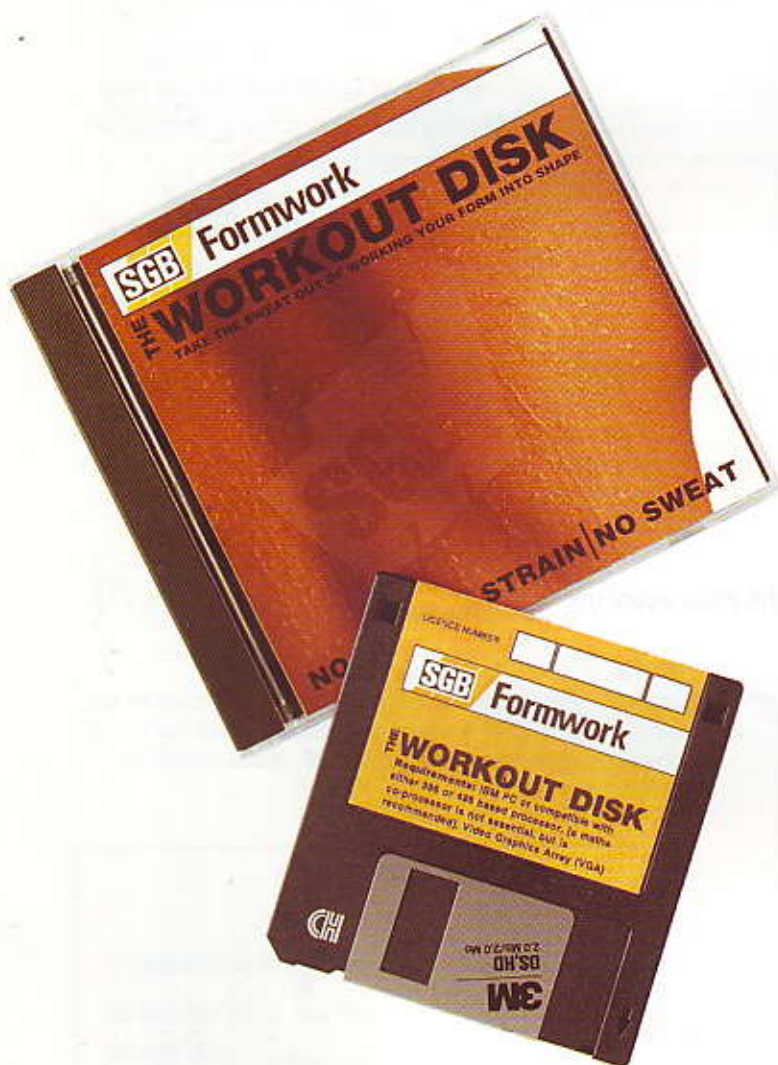
Time spent on manual calculations can now be more profitably applied.

Using the formwork Workout Disk, different solutions and options can be quickly explored and itemised equipment listings produced.

The Simple Question and Answer format gives you quick and easy access to different Formwork and Falsework options plus regularly updated full costing information on equipment for hire or sale.

The Workout Disk leads the user through the design process enabling you to produce an equipment listing perfectly tailored to your formwork needs.

Contact your local SGB Formwork branch for a "Workout" demonstration.



REQUIREMENTS

IBM PC or compatible with either 386 or 486 based processor, (a maths co-processor is not essential, but is recommended), Video Graphics Array (VGA), MSDOS 3.0 or later, Epson or Hewlett Packard DeskJet or LaserJet compatible printer.

CAN NOW RUN STRAIGHT FROM WINDOWS 3.1 and WINDOWS 95.

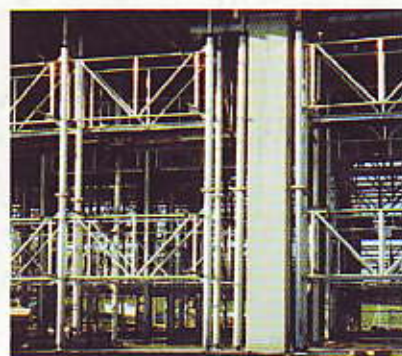
A vintage computer setup featuring a monitor displaying a software interface. The interface includes a menu with options like 'File', 'Edit', 'View', 'Options', 'Help', and a status bar at the bottom with text: 'You are viewing a file in the system's file system. The file is located in the system's file system.' In the foreground, there is a keyboard, a mouse, and several software boxes, including one labeled 'Dataquest' and another 'Flow'. A document with a picture of a building is also visible.

35

SGB International



METRIFORM



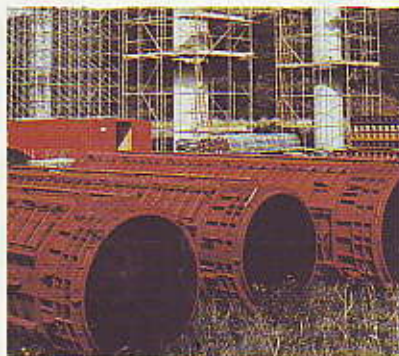
GASS ALUMINIUM SHORING SYSTEM



DUAL ALUMINIUM BEAMS



MKII SOLDIER



SPECIAL FABRICATION



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