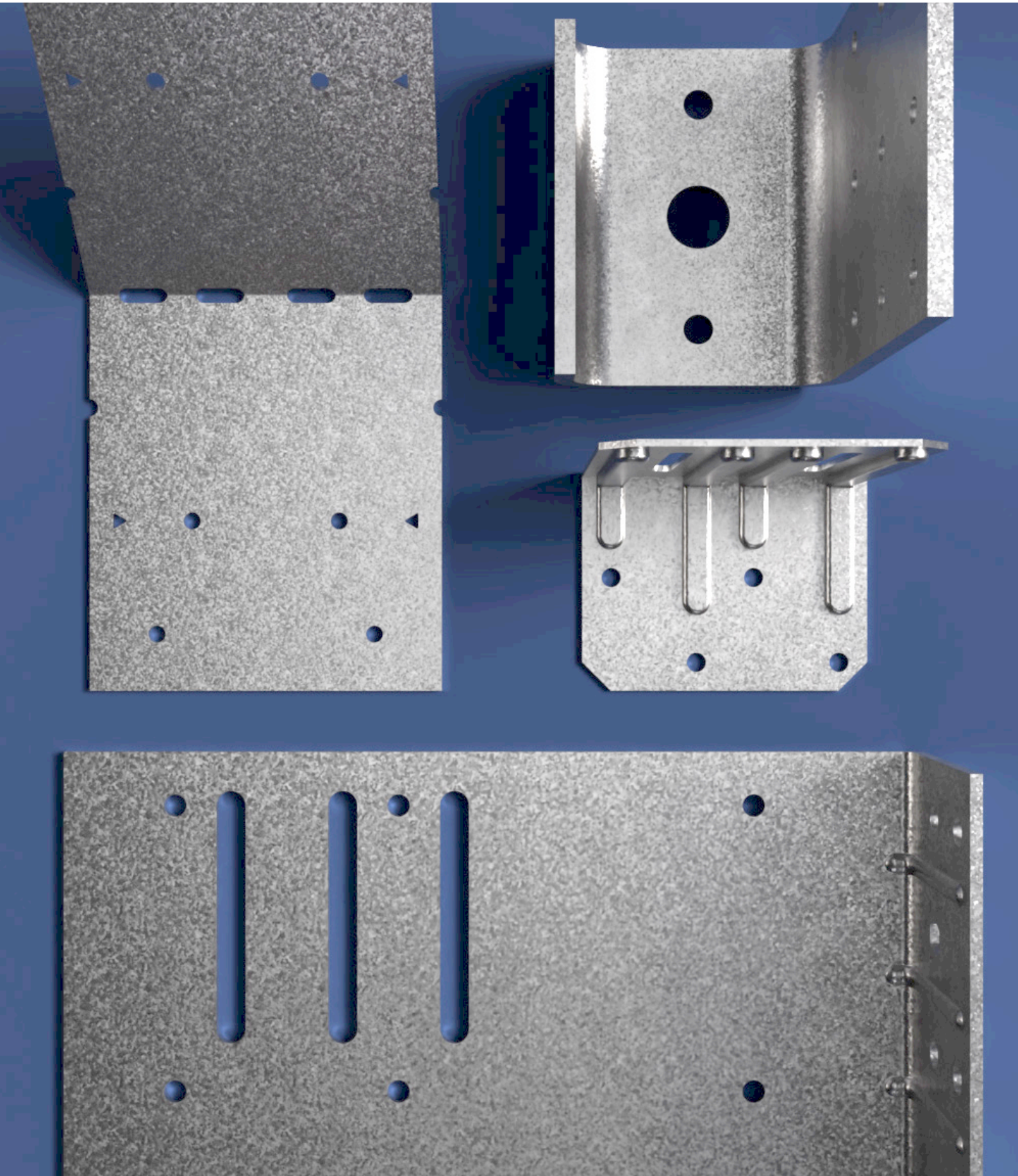
Connectors and Fasteners for

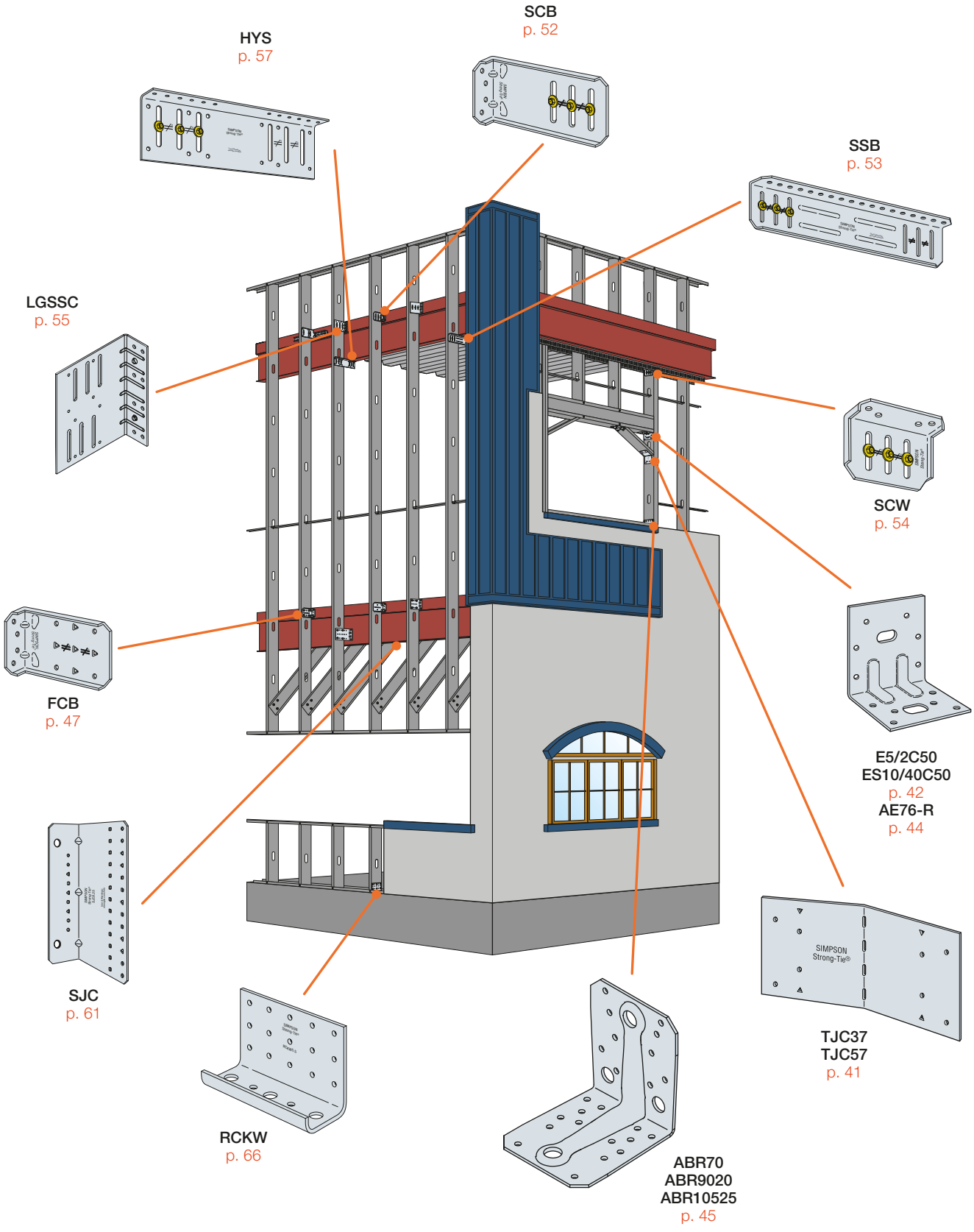
Light Gauge Steel

C-LGS-UK-2023 | 01827 255600 | strongtie.co.uk

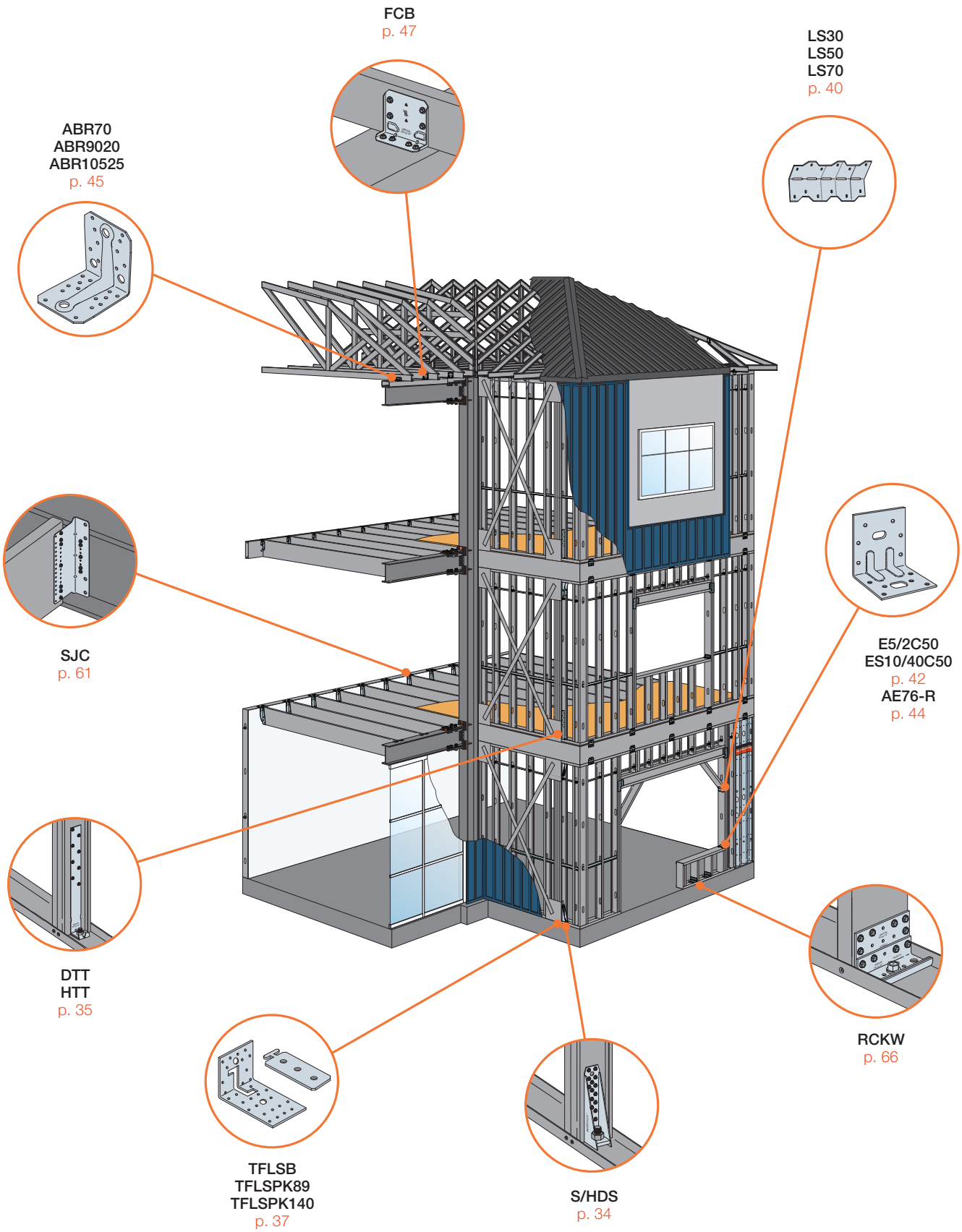
SIMPSON Strong-Tie



Facade and load bearing connector solutions

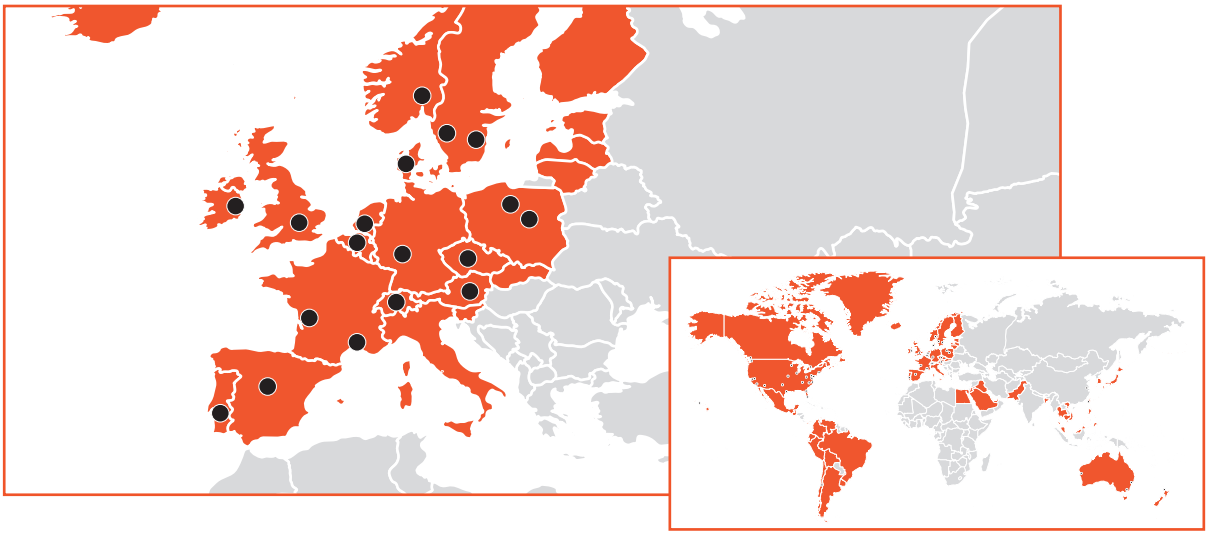


Facade and load bearing connector solutions



Company Information

For more than 60 years, Simpson Strong-Tie® has focused on creating structural products that help people build safer and stronger homes and buildings. A leader in structural systems research and technology, Simpson Strong-Tie® is one of the largest suppliers of structural building products in the world. Our commitment to product development and engineering, as well as testing and training, is evident in the consistent quality and delivery of our products and services.



● Factories, offices, or warehouses in Australia, Austria, Belgium Canada, Chile, China, Czech Republic, Denmark, France, Germany, Ireland, Netherlands,New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Taiwan, UK and USA

■ Distribution in Australia, Canada, Chile, Western Europe, part of Eastern Europe, Middle East, Egypt, Japan, Korea and other Asian countries, Mexico, New Zealand, UK, part of South America and USA

Contents

The Simpson Strong-Tie Company Inc. “No Equal” Pledge Includes:

- Quality products value-engineered for the lowest installed cost at the highest-rated performance levels
- Most thoroughly tested and evaluated products in the industry
- Strategically located manufacturing and warehouse facilities
- National code agency listings
- Largest number of patented connectors in the industry
- European locations with an international sales team
- In-house R&D and tool and die professionals
- In-house product testing and quality control engineers

Quality Policy

We help people build safer structures economically. We do this by designing, engineering and manufacturing “No Equal” structural connectors and other related products that meet or exceed our customers’ needs and expectations.

Everyone is responsible for product quality and is committed to ensuring the effectiveness of the Quality Management System. Simpson Strong-Tie® is an ISO 9001 registered company. ISO 9001 is an internationally recognised quality management system standard, which lets our customers know that they can count on the consistent quality of Simpson Strong-Tie’s products and services.

Testing Laboratory Accreditation

The Andris Peterson European Test Laboratory, located in the UK in Tamworth, Staffordshire, is the first manufacturer's facility to achieve third party accreditation to the international standard BS EN ISO/IEC 17025.

The world-class facility now conducts around 10,000 product tests annually and has recently benefited from a significant investment, which will enable a doubling in productivity. We extensively test our products, which gives you the reassurance that they will perform in the toughest conditions and we strive to ensure that our products are compliant with the latest European requirements for construction products.

FM 767499

ISO 9001:2015

Simpson Strong-Tie is an ISO 9001 registered company. ISO 9001 is an internationally recognised quality management system which lets our domestic and international customers know that they can count on the consistent quality of Simpson Strong-Tie® products and services.

EMS 517722

ISO 14001:2015

Our UK facilities are ISO 14001 certified. This standard states the requirements for an environmental management system, and applies to the environmental aspects over which our company has control and can be expected to have an influence.

OHS 570006

ISO 45001:2018

Our Tamworth, UK facility is ISO 45001 certified. This certification reflects an internationally applied standard for occupational health and safety management systems.

To learn more about these certifications and organizations, please visit ISO.org.

Subject Index

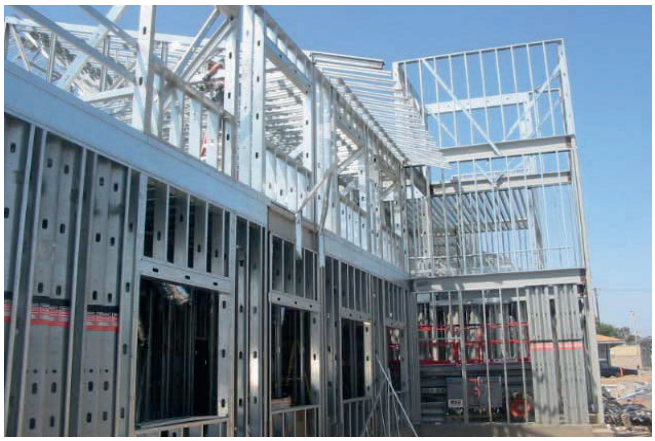
Alphabetical Index

Introduction to LGS

Light Gauge Steel

Light gauge steel systems offer a range of construction related benefits, with speed of construction, cost effectiveness and safety being the most notable. Light gauge steel is produced when thin gauge steel coils are uncoiled and cold roll-formed into light gauge steel sections, typically between 1.2mm and 3.2mm gauge. The most popular forms of light gauge steel construction are Facades (infill) and Load Bearing. Facade walls are connected between the primary structural frame of the building to provide support for cladding systems.

They do not support floor loads, but do resist wind loads applied to the facade on steel and concrete buildings. Load bearing walls are used in light gauge steel buildings, supporting floor loads, loads from walls above and resisting lateral wind loads. Both internal and external walls may be designed as load bearing. With increased interest in offsite construction methods, light gauge steel systems have become a popular choice for modern methods of construction.

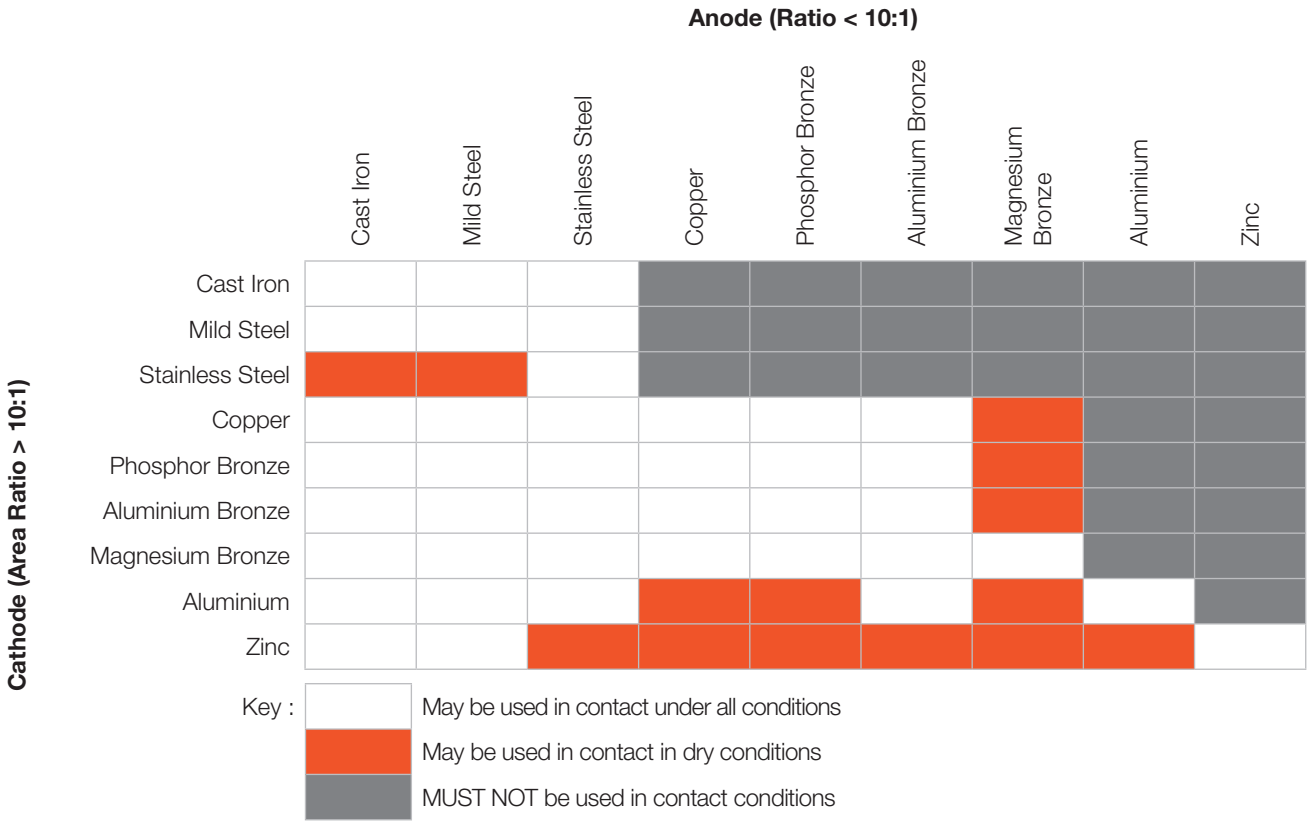


Corrosion Information

The table below provides details of general materials that may be used together in certain instances.

It is sometimes hard to give general statements on certain materials (e.g. Aluminium) as the inclusion of certain ingredients in the alloy (e.g. Copper) has a major impact on the corrosion resistance in the presence of certain electrolytes (e.g. de-icing salt). In addition, the post treatment (e.g. Eloxation) makes a big difference with the corrosion resistance.

Good to know: When low-alloy steels in high moisture atmospheres are in contact even with small carbon steel particles, bimetallic corrosion can cause a nucleus for stainless steel corrosion. This might happen for example when stainless fasteners are processed with non-stainless tools.



Service classes according to Eurocode 5: Definition of the service classes environment are given within the EN1995-1-1

Service Class	Description	Examples
1 	Moisture content in the materials corresponding to a temperature of 20°C and the relative humidity of the surrounding air only exceeding 65% for a few weeks per year.	Warm roof, intermediate floors, timber frame walls - internal and party walls.
2 	Moisture content in the materials corresponding to a temperature of 20°C and the relative humidity of the surrounding air only exceeding 85% for a few weeks per year.	Cold roof, ground floors, timber frame walls - external walls where member is protected from direct wetting.
3 	Climatic conditions leading to higher moisture contents than in service class 2.	External uses - fully exposed.

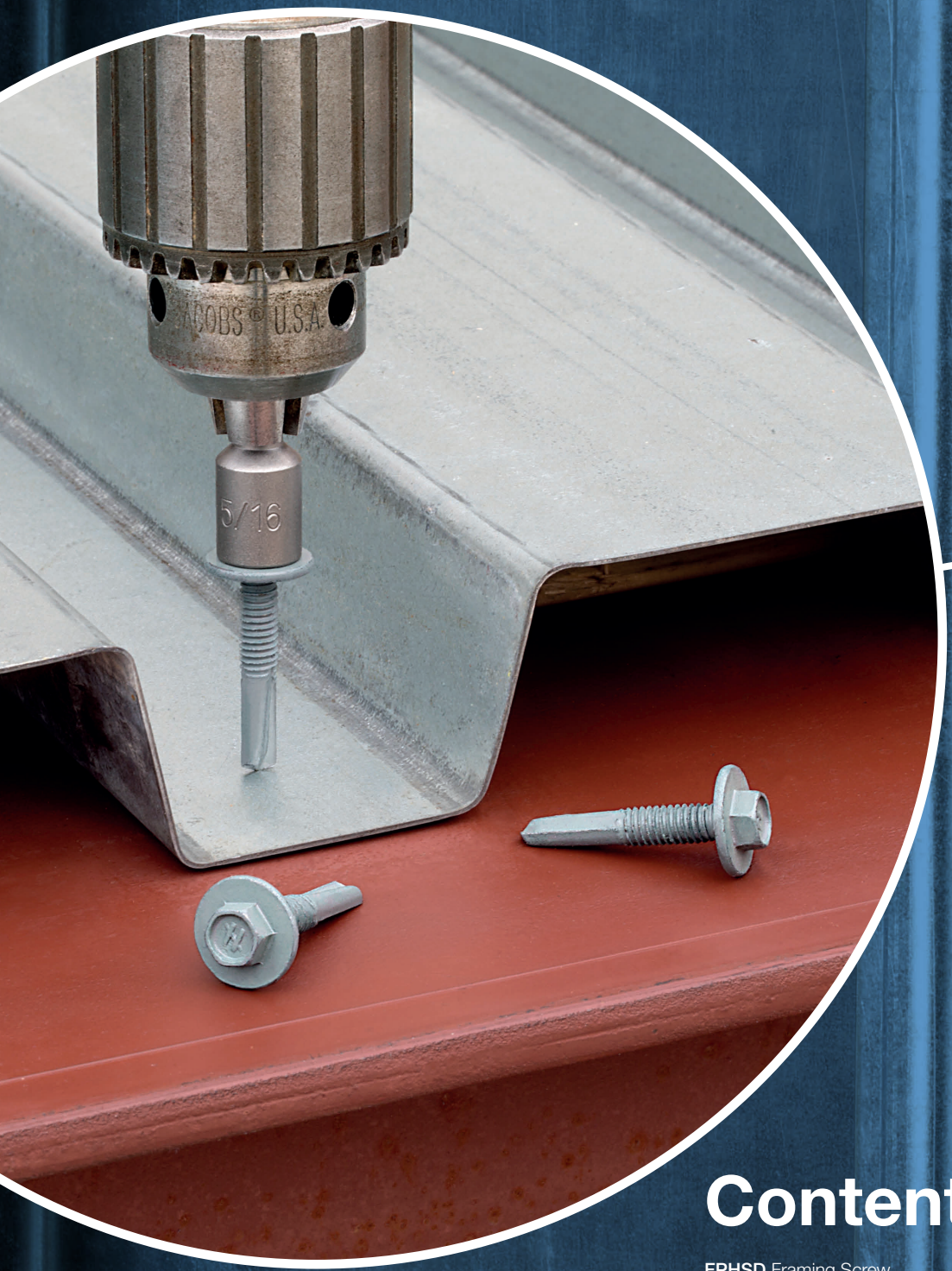
Simpson Strong-Tie® Connectors for Light Gauge Steel Construction

Whether you are a manufacturer of Light Gauge Steel load-bearing structures or a manufacturer of Light Gauge Steel facades, Simpson Strong-Tie can provide a connection solution for your client's building. From the foundation up, we have a comprehensive range of products, which can ensure you make the right connection when you need it.

Our range of ergonomically designed connectors can assist on-site installation to ensure projects are completed on time and to your specification. You also have the reassurance of knowing that you are specifying a tested product, whether it be a hold down anchored to the foundation, or an adjustable angle bracket connecting to the Light Gauge Steel, we can provide the connector and the fixings for the solution.

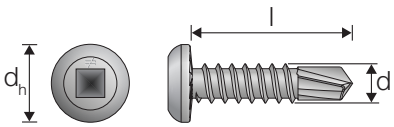
Shown in photo: Oadby Plastics Extension, Leicester. Manufactured by EOS Framing Ltd.

Loose Fasteners



Contents

FPHSD Framing Screw



FPHSD

Framing screw for connecting LGS sections together. The FPHSD is a self-drilling screw with a #3 drill point and flat pan head. These screws are usually fixed through pre-formed holes in the steel frame, however they are capable of drilling through steel up to 5.5mm thick.

Material: Steel - Electro galvanised

Installation: Holes in the frame should be aligned before the framing screw is installed.

Key Features:

- 5.5mm x 19mm
- Flat pan head
- #3 square drive (not included)
- #3 drill point

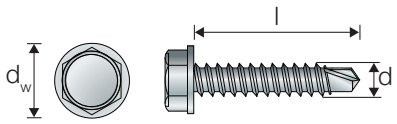
Product Dimensions

References	Fastener dimensions [mm]			TPI	Drill point	Drive Type	
	d_h	d	l				
FPHSD34S1214R	9	5.5	19	14	#3	#3 Square	100,000

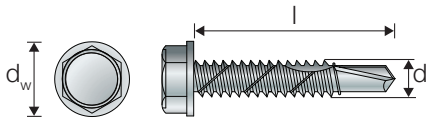
Performance Values

References	Member Thickness [mm]	Safe Working Loads [kN]		Characteristic Loads [kN]	
		Shear	Tension	Shear	Tension
FPHSD34S1214R	1.2	2.2	1.1	3.5	1.7
	1.6	2.7	1.4	4.3	2.3

X12 Self-Drilling Screw



X1214



X1224

The X12 screws are self-drilling screws with a hex washer head and drill point. The X1214 screws have 14 TPI and a #3 drill point capable of drilling through steel up to 5mm thick. The X1224 screws have 24 TPI and a #5 drill point capable of drilling through steel up to 12.5mm thick. Driver bit not included.

Material: Steel - Ruspert 500 coating

Installation: X1214 self-drilling screws connect steel section to steel section without the need for pre drilling.

X1224 self-drilling screws connect LGS sections to hot rolled steel without the need for pre drilling.

Key Features:

- 5⁄16" hex washer head
- Drill point
- X1214 suitable for 450 grade hardened steel
- X1224 suitable for hot rolled steel sections up to 12.5mm
- CE marked to EN14566

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Product Dimensions

References	Fastener dimensions [mm]				TPI	Drill Point	
	Head	d_w	d	l			
X1214D325	5/16" Hex	12.2	5.5	25	14	#3	250
X1214D350	5/16" Hex	12.2	5.5	50	14	#3	250
X1224D540	5/16" Hex	12.2	5.5	40	24	#5	250

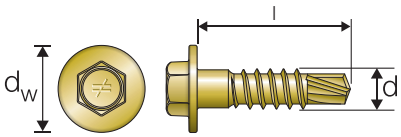
Performance Values

References	Fastener Performance					
	Safe Working Loads [kN]			Characteristic Loads [kN]		
	Tension	Shear	Torsional [Nm]	Tension	Shear	Torsional [Nm]
X1214D325	4.1	2.8	3.3	6.5	4.5	5.3
X1214D350						
X1224D540						

References	Pull-Out Performance Values / Support Thickness [mm]													
	Safe Working Loads [kN]							Characteristic Loads [kN]						
	1.2	1.5	2	3	4	5	6	1.2	1.5	2	3	4	5	6
X1214D325	0.8	0.9	1.2	2.1	2.6	3.3	4.1	1.2	1.4	1.8	3.4	4.2	5.2	6.5
X1214D350	0.8	0.9	1.2	2.1	2.6	3.3	4.1	1.2	1.4	1.8	3.4	4.2	5.2	6.5
X1224D540	0.6	0.8	1.0	2.0	2.3	2.9	3.6	1.0	1.2	1.5	3.2	3.6	4.6	5.8

1) Steel thickness <4.0mm BS EN10025-S355, minimum yield strength 355N/mm²
2) Steel thickness ≥4.0mm BS EN10025-S275, minimum yield strength 275N/mm²
3) Pull out is limited by tensile strength of the fastener

XLSH Bracket Screw



XLSH

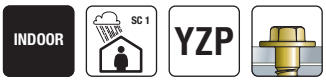
The XLSH screws are self-drilling screws with a hex washer head and shoulder. The screw is used for connecting movement clip and LGSSC brackets to LGS sections. Driver bit not included.

Material: Steel - Yellow zinc coating

Installation: The shoulder screw is positioned through the slots in the movement bracket and fixed to the LGS sections. For the LGSSC bracket the screw is positioned through the lower slots of the LGSSC bracket and fixed to the lower stud of the LGS sections. See page 55.

Key Features:

- Hex head shoulder screw
- Self-drilling point
- Suitable for 450 grade hardened steel

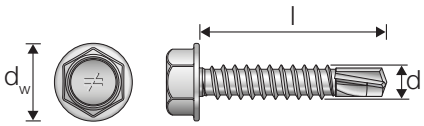


Product Dimensions

References	Fastener Dimensions [mm]				TPI	Drill point	
	Head	d_w	d	l			
XLSH34B1414-83	$^5/_{16}$" Hex	15.6	6.2	19	14.0	#3	83
XLSH78B1414	$^5/_{16}$" Hex	15.6	6.2	22	14.0	#3	N/A

XLSH78B1414 screws supplied with specific brackets only. Not available for individual purchase.

X1B Bracket Screw



X1B

The X1B is a self-drilling screw with a #3 drill point and 5⁄16" hex washer head. The drill point allows the screw to penetrate the steel without the need for a pilot hole. Suitable for connecting LGS sections together between 0.9mm and 2.6mm thickness. Ideally suited for use with LGSSC brackets. Driver bit not included.

Material: Steel - Bright zinc coating

Installation: The screw is positioned through the round holes in the LGSSC bracket and fixed to the upper stud of the LGS sections. See page 55.

Key Features:

- 5.5mm x 25mm
- 5⁄16" hex washer head
- #3 drill point
- Suitable for 450 grade hardened steel
- Also available collated as X1S screws for Quik Drive system

INDOOR | SC 1 | EG 5 µm

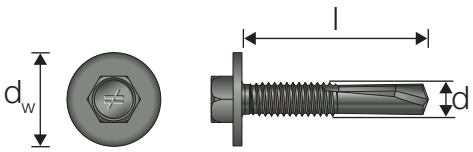
Product Dimensions

References	Fastener Dimensions [mm]				TPI	Drill point	
	Head	dw	d	l			
X1B1214R100	5/16" Hex	10.1	5.5	25	14	#3	100

Performance Values

References	Member Thickness [mm]	Safe Working Loads [kN]		Characteristic Loads [kN]	
		Shear	Tension	Shear	Tension
X1B1214R100	1.2	2.2	0.8	3.5	1.2
	1.6	2.8	1.2	4.5	1.9

XLQ Bracket Screw



XLQ

The XLQ is a self-drilling screw with a #5 drill point and hex washer head. It has an integral large washer. Commonly used for connecting movement brackets. Driver bit not included.

Material: Steel - Quik Guard coating

Installation: The XLQ screw fixes the IDCB, SCHA and LGSSC connectors back to the hot rolled steel section.

Key Features:

- 5.8mm x 32mm
- 5⁄16" hex washer head
- 15.5mm integral washer
- #5 drill point
- Suitable for hot rolled steel sections up to 12.5mm

INDOOR | SC 2 | QUIK GUARD®

Product Dimensions

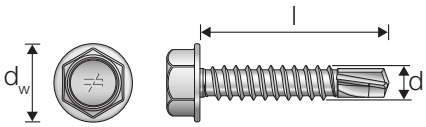
References	Fastener Dimensions [mm]				TPI	Suitable Material Thickness [mm]	Drill point	
	Head	d_w	d	l				
XLQ114B1224/1	5/16" Hex	15.5	5.8	32	24	3.5 - 12.5	#5	1
XLQ114B1224-250	5/16" Hex	15.5	5.8	32	24	3.5 - 12.5	#5	250

Performance Values

References	Member Thickness [mm]	Safe Working Loads [kN]	Characteristic Loads [kN]
		Shear	
XLQ114B1224	1.2	4.5	7.2
	1.6	5.0	8.1

References	Member Thickness [mm]	Safe Working Loads [kN]	Characteristic Loads [kN]
		Pull-Out	
XLQ114B1224	3.2	1.7	2.6
	4.8	2.6	3.8
	6.4	3.4	5.1
	9.5	5.1	7.7

E1B Self-Drilling Screw



E1B

The E1B is a 6.1mm diameter self-drilling screw with a #3 drill point and hex washer head. The drill point allows the screw to penetrate the steel without the need for a pilot hole. Suitable for use with hold downs such as S/HDS. Driver bit not included.

Material: Steel - Clear zinc coating

Installation: Recommended for use with certain Simpson Strong-Tie connectors for fixing to steel up to 8mm thick.

Key Features:

- 6.1mm x 25mm
- ⅜" hex washer head
- 12.2mm integral washer
- #3 drill point

INDOOR | SC 1 | EG 5 µm

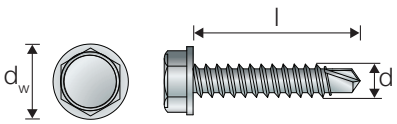
Product Dimensions

References	Fastener dimensions [mm]				TPI	Drill Point	
	Head	d_w	d	l			
E1B1414B/1	$^3/_8$" Hex	12.2	6.1	25	14	#3	1
E1B1414B	$^3/_8$" Hex	12.2	6.1	25	14	#3	2500

Performance Values

References	Member Thickness [mm]	Safe Working Loads [kN]		Characteristic Loads [kN]	
		Shear	Tension	Shear	Tension
E1B1414B	1.2	1.3	0.6	2.0	0.9
	1.6	2.7	1.1	4.0	1.7

X34 Self-Drilling Screw



X34

The X34 is a 4.8mm diameter self-drilling screw with a #3 drill point and hex washer head. The drill point allows the screw to penetrate the steel without the need for a pilot hole. Driver bit not included

Material: Steel - Clear zinc coating

Installation: Recommended for use with Simpson Strong-Tie tension ties when fixing to light gauge steel.

- 4.8mm x 19mm
- 5⁄16" hex washer head
- #3 drill point

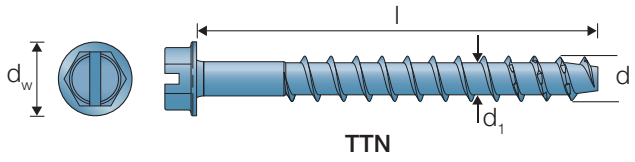
Product Dimensions

References	Fastener Dimensions [mm]				TPI	Drill point	
	Head	d_w	d	l			
X34B1016R100	5/16" Hex	10.5	4.8	19	16	#3	100

Performance Values

References	Member Thickness [mm]	Safe Working Loads [kN]		Characteristic Loads [kN]	
		Shear	Tension	Shear	Tension
X34B1016R100	1.2	1.6	0.6	2.5	0.9
	1.6	2.4	0.9	3.6	1.4

TTN Hex Head Masonry Screw



TTN

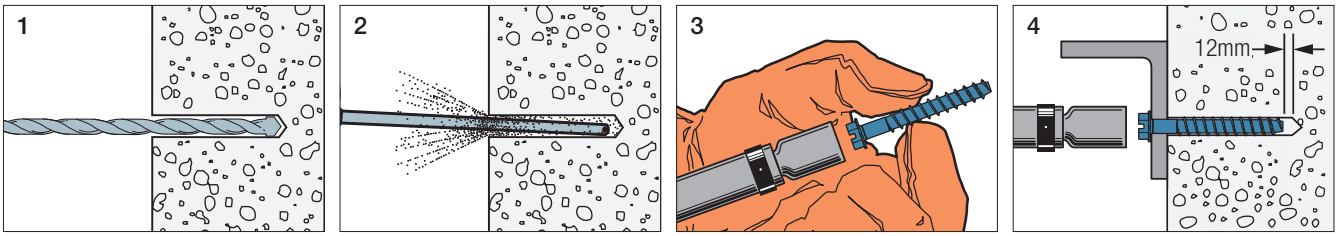
The Titen concrete and masonry screw is ideal for attaching all types of components to concrete and masonry. The improved thread design undercuts the base material more efficiently. This reduces installation torque making it easier to drive without binding, breaking or stripping, even during installation into hard base material. Driver bit not included.

Material: Steel - Zinc plated with baked-on ceramic coating

Installation: The Titen hex head screw connects over sail and LGSSC brackets to the concrete substrate. Pre-drilling is required.

Key Features:

- Patented undercutting threads reduce installation torque
- Hex and flat screw head helps with installation
- 6.4mm diameter
- Blue colour for simple on site recognition
- For use in dry interior environments
- Drill bit included in each box



Product Dimensions

References	Dimensions [mm]					Drill Diameter	
	Head	d_w	l	d	d_1		
TTN25134H	$^5/_{16}$" Hex	10.0	45	6.4	4.8	4.8	100

Performance Values

References	Recommended Loads [kN]		Design Resistance [kN]		Characteristic Resistance [kN]	
	Tension (N_{Rec})	Shear (V_{Rec})	Tension (N_{rd})	Shear (V_{rd})	Tension (N_{rk})	Shear (Vrk)
TTN25134H	1.9	3.2	2.7	4.5	4.8	8.7

Installation Information

Characteristic	Symbol	Unit	TTN25134H
Drill Hole Depth	h_1	[mm]	45
Effective Embedment Depth	h_{ef}	[mm]	26
Characteristic Spacing	$S_{cr,N}$	[mm]	78
Minimum Spacing	S_{min}	[mm]	50
Characteristic Edge Distance	$C_{cr,N}$	[mm]	75
Minimum Edge Distance	C_{min}	[mm]	45
Minimum Concrete Thickness	h_{min}	[mm]	80
Installation Torque (C20/25)	$T_{sd} \leq$	[Nm]	105

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We offer a complete range of nails and screws for almost every application, including stainless steel, structural and collated options. Also featuring the Quik Drive auto-feed system. **Building Safer, Stronger Structures.**

SIMPSON
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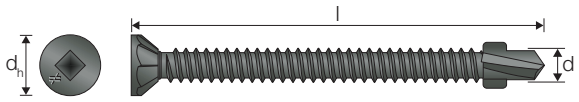
Quik Drive Collated Fasteners

Contents

CBSDQ Fibre Cement Board to Steel Screw



CBSDQ

The CBSDQ screw is suitable for fixing fibre cement board to steel between 1mm and 3mm thick. Ideally suited for modular housing construction. It has a countersunk, ribbed flat head with a fine thread and a drill point with wings. The wings ream a larger hole in the cement board, and then break off when they connect with the steel. This allows the cement board to be pulled tight to the steel substrate.

Material: Steel - Quik Guard coating

Installation: The CBSDQ screws connect most types of cement board and fibre cement board to the LGS sections without the need for pre-drilling. Only suitable for fixing to steel.

Key Features:

- CE Marked to EN14566
- Fibre cement board to steel frame 1mm to 3mm thickness
- Ribbed countersunk head with self tapping fine thread
- Drill point with wings to clear debris from hole
- #2 square undersized driver bit included (BIT2SUE)

Product Dimensions

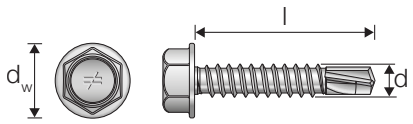
References	Fastener Dimensions [mm]			Drive Type	TPI	Drill Point	Qty per Strip	Recommended RPM	Quik Drive Attachment	
	d_h	d	l							
CBSDQ41E	8.4	4.2	41	#2 Undersize Square	18	#2	30	2500	QDPR051E / QDPR064E / QD76KE	1500
CBSDQ55E	8.4	4.8	57	#2 Undersize Square	16	#2	30	2500	QDPR064E / QD76KE	1000

Performance Values

References	Member Thickness mm]	Safe Working Loads [kN]			Characteristic Loads [kN]		
		Head Pull-Through	Shear	Tension	Head Pull-Through	Shear	Tension
CBSDQ41E	1.2	0.8	1.0	0.8	1.2	1.6	1.2
CBSDQ55E	1.6	0.8	1.1	1.2	1.2	1.7	1.9

Notes:
1) Head pull-through based upon 12mm Fibre Cement Board

X1S Quik Drive Collated Self-Drilling Screw



X1S

The X1S is a self-drilling screw with a #3 drill point and 8mm hex washer head. The drill point allows the screw to penetrate the steel without the need for a pilot hole. Suitable for connecting LGS sections together between 0.9mm and 2.6mm thickness.

Material: Steel - Electro galvanised

Installation: Self-drilling screws connect steel section to steel section without the need for pre drilling.

Key Features:

- #3 drill point
- 5⁄16" hex washer head
- LGS section to LGS section tek screw
- Compatible with QDPROHX516G2 Quik Drive attachment

INDOOR | SC 1 | EG 5 µm

Product Dimensions

References	Fastener Dimensions [mm]				TPI	Drill Point	Qty per Strip	Recommended RPM	Quik Drive Attachment	
	Head	d_w	d	l						
X1S1214	$^5/_{16}$" Hex	10.1	5.5	25	14	#3	22	2500	QDPROHX516G2	1500

Performance Values

References	Member Thickness [mm]	Safe Working Loads [kN]		Characteristic Loads [kN]	
		Shear	Tension	Shear	Tension
X1S1214	1.2	2.2	0.8	3.5	1.2
	1.6	2.8	1.2	4.5	1.9

Quik Drive Attachments

Contents

QDPRO51E Quik Drive Attachment 51mm

QDPRO51E

Smooth nose will not mark drywall surface.

Self-locking depth adjustment for consistent countersink.

The QDPRO51E Quik Drive attachment is suitable for screws ranging from 25mm to 51mm in length. Smooth nose piece prevents marking of the work surface. Teflon coated moving parts reduce friction and impart non-stick properties, meaning that no lubrication is required. Available with or without extension pole. Use code QDPRO51E for attachment only and QDPRO51KE for added extension pole. Suitable for use with CBSDQ41E screws.

Key Features:

- Suitable for screws 25mm to 51mm
- Self locking depth adjustment for accurate countersinking of screws
- Quick connection and release to screw gun or extension pole
- Teflon coated moving parts for durable performance
- Available as kit with or without extension pole

Kit includes:		QDPRO51E	QDPRO51KE
Extension	QDEXTE		✓
Attachment	QDPRO51E	✓	✓
Pouch	QUIVER	✓	✓
Mandrel	MANDREL165E-RC	✓	✓
Carry Case	TOOLCASE-LGE		✓
Spare Bits	BIT2PE (x3)	✓	✓
	BIT2SE (x1)	✓	✓
	BIT3SUE	✓	✓

Compatible Screws	
BHSDZ DWC DWF DWD DWFSD MTH CBSDQ PPSD	RDWF RDPF CHB WSHL WSC DWHL WSNTL (44mm and 51mm)

For more information on collated Quik Drive screws see our Premium Fasteners catalogue.

QDPRO51E

QDPRO51KE

QDPRO64E Quik Drive Attachment 64mm

QDPRO64E

Non-skid nose piece increases stability (not interchangeable).

Uniform toe-nailing and countersink on slick surfaces.

The QDPRO64E Quik Drive attachment is suitable for screws ranging from 38mm to 64mm in length. The serrated nose piece provides increased stability and prevents skidding on smooth or slippery surfaces. Teflon coated moving parts reduce friction and impart non-stick properties, meaning that no lubrication is required. Available with or without extension pole. Use code QDPRO64E for attachment only and QDPRO64KE for added extension pole. Suitable for use with CBSDQ41E and CBSDQ55E screws.

Key Features:

- Suitable for screws 38mm to 64mm
- Self locking depth adjustment for accurate countersinking of screws
- Quick connection and release to screw gun or extension handle
- Teflon coated moving parts for durable performance
- Available as kit with or without extension pole

Kit includes:		QDPRO64E	QDPRO64KE
Extension	QDEXTE		✓
Attachment	QDPRO64E	✓	✓
Pouch	QUIVER	✓	✓
Mandrel	MANDREL191E-RC	✓	✓
Carry Case	TOOLCASE-LGE		✓
Spare Bits	BIT2SE (x2)	✓	✓
	BIT3SUE	✓	✓

Compatible Screws	
CBSDQ DTHQ PPSD SSDCL SSWSCB	SSDTH WSNTL WSNTLG CHB DCSD

For more information on collated Quik Drive screws see our Premium Fasteners catalogue.

QDPRO64E

QDPRO64KE

QDPROHX516G2 Quik Drive Attachment 25mm

QDPROHX516G2

The QDPROHX516G2 is designed to be used in light gauge steel applications with Simpson Strong-Tie X1S1214 self drilling screws. Teflon coated moving parts reduce friction and impart non-stick properties, meaning that no lubrication is required. This kit comes with mandrel, hex driver bit, screw quiver and carry case. Extension poles can be ordered separately.

Key Features:

- Suitable for X1S1214 hex head screws
- Self locking depth adjustment to prevent damage to steel
- Quick connection and release to screw gun or extension pole
- Can be used with QDEXTG2-T2 extension handle
- Teflon coated moving parts for durable performance

Kit includes:		QDPROHX516G2
Attachment	QDPROHX516G2	✓
Mandrel	MANDRELBPHX516G2	✓
Spare Bits	BITHEXLB516 (x1)	✓
Pouch	QUIVER	✓

Compatible Screws
X1S1214 X25E1016

For more information on collated Quik Drive screws see our Premium Fasteners catalogue.

QDPROHX516G2

Chemical Anchor Systems

Contents

AT-HP Methacrylate Resin

ATHP300BG-UK
ATHP420BG-UK

AT-HP is a styrene free methacrylate resin suitable for securing threaded rod into concrete.

Easy to dispense and fast curing, specially designed for structural fixings that need connecting to concrete.

Unique feature: The resin changes colour to grey as it cures, helping the installer on site.

Installation: Ensure all drilled holes are cleaned (2 x blows - 4 x brushes - 2 x blows) before dispensing resin.

Key Features:

- ETA approved for threaded rod installations
- Changes colour as it cures
- Fast curing
- Low odour
- Non-flammable
- 2 mixing nozzles supplied
- 300ml and 420ml tubes

Product Dimensions

References	Description
ATHP300BG-UK	300ml
ATHP420BG-UK	420ml

Product Values

Basic load data for single anchor with no influence of edge distances and spacings [4) 7)] / DESIGN METHOD EOTA TR 029																	
					M8		M10		M12		M16		M20		M24	
					5.8	A4-70	5.8	A4-70	5.8	A4-70	5.8	A4-70	5.8	A4-70	5.8	A4-70
		h_{ef} = 8d [mm]			64		80		96		128		160		192	
Characteristic resistance [1) 8)]																	
Cracked concrete (T1: 24°C/40°C)	C20/25	Tension	N_{Rk}	[kN]	-	-	-	-	12.7	12.7	22.5	22.5	-	-	-	-
	C30/37				-	-	-	-	13.2	13.2	23.4	23.4	-	-	-	-
	C40/50				-	-	-	-	13.5	13.5	24.1	24.1	-	-	-	-
	C50/60				-	-	-	-	13.8	13.8	24.5	24.5	-	-	-	-
	C20/25	Shear [5)]	V_{Rk}	[kN]	-	-	-	-	21.0	25.3	39.0	45.0	-	-	-	-
	C30/37				-	-	-	-	21.0	26.3	39.0	46.8	-	-	-	-
	C40/50				-	-	-	-	21.0	27.1	39.0	48.2	-	-	-	-
	C50/60				-	-	-	-	21.0	27.6	39.0	49.1	-	-	-	-
Non-cracked concrete 6) (T1: 24°C/40°C)	C20/25	Tension	N_{Rk}	[kN]	16.1	16.1	23.9	23.9	32.6	32.6	51.4	51.4	75.4	75.4	101.3	101.3
	C30/37				18.0	18.0	26.7	26.7	36.5	36.5	57.6	57.6	84.4	84.4	113.4	113.4
	C40/50				18.0	19.8	29.0	29.4	40.0	40.0	63.3	63.3	92.7	92.7	124.6	124.6
	C50/60				18.0	20.9	29.0	31.0	42.0	42.3	66.9	66.9	98.0	98.0	131.7	131.7
	C20/25	Shear [5)]	V_{Rk}	[kN]	9.0	13.0	15.0	20.0	21.0	30.0	39.0	55.0	61.0	86.0	88.0	124.0
	C30/37				9.0	13.0	15.0	20.0	21.0	30.0	39.0	55.0	61.0	86.0	88.0	124.0
	C40/50				9.0	13.0	15.0	20.0	21.0	30.0	39.0	55.0	61.0	86.0	88.0	124.0
	C50/60				9.0	13.0	15.0	20.0	21.0	30.0	39.0	55.0	61.0	86.0	88.0	124.0
Bending Moment			$M^0_{Rk,s}$	[Nm]	19.0	26.0	37.0	53.0	66.0	92.0	167.0	233.0	326.0	454.0	561.0	784.0

1. Steel failure decisive
2. The design resistances have been calculated using the partial safety factors for resistances stated in the ETA-assessment(s).
3. The recommended loads have been calculated using the partial safety factors for resistances stated in ETA-assessment(s) and with a partial safety factor for actions of yF=1.4.
4. The load figures are valid for unreinforced concrete and reinforced concrete with a rebar spacing s ≥ 15 cm (any diameter) or with a rebar spacing s ≥ 10cm, if the rebar diameter is 10 mm or smaller.
5. The figures for shear loads are based on a single anchor without influence of concrete edges.
6. Concrete is considered non-cracked when the tensile stress within the concrete is σL + σR ≤ 0. In the absence of detailed verification σR = 3 N/mm² can be assumed (σL equals the tensile stress within the concrete induced by external loads, anchor loads included).
7. For combined tension and shear loads or anchor groups and/or in case of edge influence, a calculation per TR 029, design method A shall be performed. For details see ETA - assessment(s)
8. Values for temperature range T1: 24°C/40°C: -40°C to +40°C (max.long term temperature: +24°C; max. short term temperature: +40°C)

AT-HP Methacrylate Resin

Design resistance [1) 2) 8)]																	
Cracked concrete (T1: 24°C/40°C)	C20/25	Tension	N_{Rd}	[kN]	-	-	-	-	8.4	8.4	15.0	15.0	-	-	-	-
	C30/37				-	-	-	-	8.8	8.8	15.6	15.6	-	-	-	-
	C40/50				-	-	-	-	9.0	9.0	16.1	16.1	-	-	-	-
	C50/60				-	-	-	-	9.2	9.2	16.4	16.4	-	-	-	-
	C20/25	Shear [5)]	V_{Rd}	[kN]	-	-	-	-	16.8	16.9	30.0	30.0	-	-	-	-
	C30/37				-	-	-	-	16.8	17.6	31.2	31.2	-	-	-	-
	C40/50				-	-	-	-	16.8	18.1	31.2	32.1	-	-	-	-
	C50/60				-	-	-	-	16.8	18.4	31.2	32.7	-	-	-	-
Non-cracked concrete 6) (T1: 24°C/40°C)	C20/25	Tension	N_{Rd}	[kN]	10.7	10.7	15.9	15.9	21.7	21.7	34.3	34.3	50.2	50.2	67.5	67.5
	C30/37				12.0	12.0	17.8	17.8	24.3	24.3	38.4	38.4	56.3	56.3	75.6	75.6
	C40/50				12.0	13.2	19.3	19.6	26.7	26.7	42.2	42.2	61.8	61.8	83.1	83.1
	C50/60				12.0	13.9	19.3	20.7	28.0	28.2	44.6	44.6	65.3	65.3	87.8	87.8
	C20/25	Shear [5)]	V_{Rd}	[kN]	7.2	8.3	12.0	12.8	16.8	19.2	31.2	35.3	48.8	55.1	70.4	79.5
	C30/37				7.2	8.3	12.0	12.8	16.8	19.2	31.2	35.3	48.8	55.1	70.4	79.5
	C40/50				7.2	8.3	12.0	12.8	16.8	19.2	31.2	35.3	48.8	55.1	70.4	79.5
	C50/60				7.2	8.3	12.0	12.8	16.8	19.2	31.2	35.3	48.8	55.1	70.4	79.5
Bending Moment			M_{Rd}	[Nm]	15.2	16.7	29.6	34.0	52.8	59.0	133.6	149.4	260.8	291.0	448.8	502.6

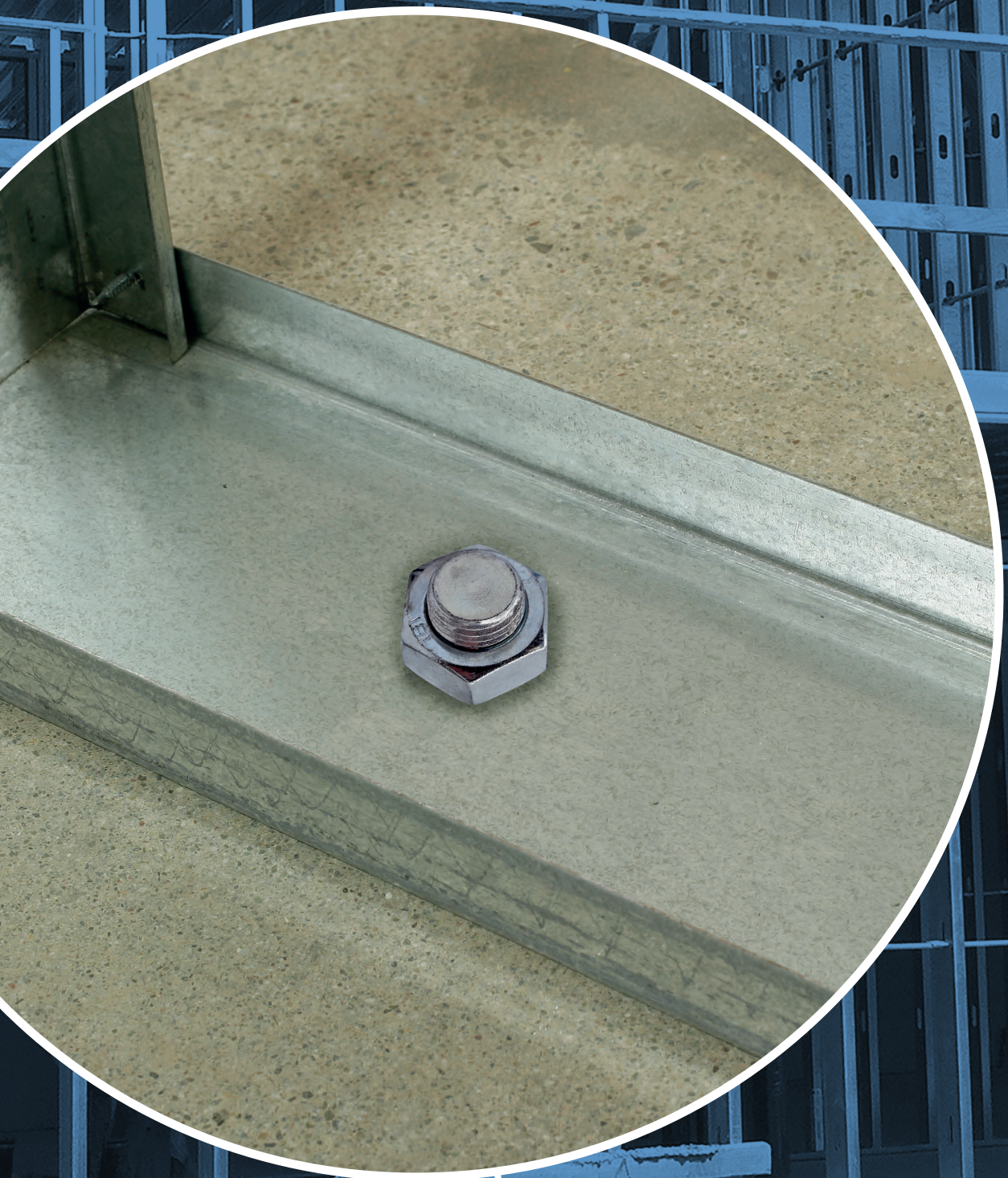
Recommended Loads [1) 3) 8)]																
Cracked concrete (T1: 24°C/40°C)	C20/25	Tension	N_{Rec}	[kN]	-	-	-	-	6.0	6.0	10.7	10.7	-	-	-	-
	C30/37				-	-	-	-	6.3	6.3	11.1	11.1	-	-	-	-
	C40/50				-	-	-	-	6.5	6.5	11.5	11.5	-	-	-	-
	C50/60				-	-	-	-	6.6	6.6	11.7	11.7	-	-	-	-
	C20/25	Shear [5)]	V_{Rec}	[kN]	-	-	-	-	12.0	12.1	21.4	21.4	-	-	-	-
	C30/37				-	-	-	-	12.0	12.5	22.3	22.3	-	-	-	-
	C40/50				-	-	-	-	12.0	12.9	22.3	22.9	-	-	-	-
	C50/60				-	-	-	-	12.0	13.1	22.3	23.4	-	-	-	-
Non-cracked concrete 6) (T1: 24°C/40°C)	C20/25	Tension	N_{Rec}	[kN]	7.7	7.7	11.4	11.4	15.5	15.5	24.5	24.5	35.9	35.9	48.2	48.2
	C30/37				8.6	8.6	12.7	12.7	17.4	17.4	27.4	27.4	40.2	40.2	54.0	54.0
	C40/50				8.6	9.4	13.8	14.0	19.1	19.1	30.1	30.1	44.1	44.1	59.3	59.3
	C50/60				8.6	9.9	13.8	14.8	20.0	20.2	31.8	31.8	46.7	46.7	62.7	62.7
	C20/25	Shear [5)]	V_{Rec}	[kN]	5.1	6.0	8.6	9.2	12.0	13.7	22.3	25.2	34.9	39.4	50.3	56.8
	C30/37				5.1	6.0	8.6	9.2	12.0	13.7	22.3	25.2	34.9	39.4	50.3	56.8
	C40/50				5.1	6.0	8.6	9.2	12.0	13.7	22.3	25.2	34.9	39.4	50.3	56.8
	C50/60				5.1	6.0	8.6	9.2	12.0	13.7	22.3	25.2	34.9	39.4	50.3	56.8
Bending Moment			M_{Rec}	[Nm]	10.9	11.9	21.1	24.3	37.7	42.1	95.4	106.7	186.3	207.9	320.6	359.0

Installation Data												
• Dry or wet concrete (Use category 1) • Overhead installation is not permitted			M8		M10		M12		M16		M20		M24	
			Steel	A4	Steel	A4	Steel	A4	Steel	A4	Steel	A4	Steel	A4
Nominal drill hole diameter	d_0	[mm]	10		12		14		18		24		28	
Cylindrical drill hole depth	$h_0 \geq$	[mm]	64		80		96		128		160		192	
Diameter of clearence hole of the fixture	d_f	[mm]	9		12		14		18		22		26	
Width across flats DIN 934 (ISO 4032)	SW	[mm]	13		17(16)		19(18)		24		30		36	
Installation torque (max.)	$T_{inst,\,max}$	[mm]	10		20		30		60		90		140	

Spacing, edge distance and member thickness												
			M8		M10		M12		M16		M20		M24	
			Steel	A4	Steel	A4	Steel	A4	Steel	A4	Steel	A4	Steel	A4
Effective embedment depth	$h_{ef,min}$	[mm]	60		60		70		80		90		100	
	$h_{ef,max}$	[mm]	160		200		240		320		400		480	
Effective embedment depth (8d)	$h_{ef,8d}$	[mm]	64		80		96		128		160		192	
Characteristic spacing	$s_{cr,N}$	[mm]	192		240		288		384		480		576	
Minimum spacing	s_{min}	[mm]	40		50		60		80		100		120	
Characteristic edge distance	$c_{cr,N}$	[mm]	96		120		144		192		240		288	
Minimum edge distance	c_{min}	[mm]	40		50		60		80		100		120	
Minimum member thickness	h_{min}	[mm]	100		110		126		164		208		248	

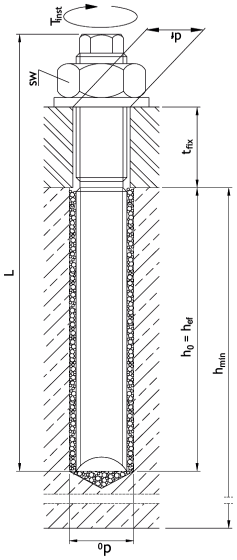
Working and curing times / Drill hole cleaning procedure				
Temperature of the anchorage base $T_{base\ material}$	Working time (Gel time)	Curing time (In dry concrete)	Curing time (In wet concrete)	Manual Air Cleaning (MAC) for all drill hole diameters d0 ≤ 24 mm and drill hole depth $h_0 \leq 10d$
	t_{gel}	$t_{cure,dry}$	$t_{cure,wet}$	
0°C ≤ Tbase material < +5°C	25 min	90 min	3:00 h	4x blowing (Hand pump) 4x brushing
'+5°C ≤ Tbase material < +10°C	17 min	70 min	2:20 h	
+10°C ≤ Tbase material < +20°C	12 min	65 min	2:10 h	
+20°C ≤ Tbase material < +30°C	6 min	60 min	2:00 h	
+30°C ≤ Tbase material ≤ +40°C	3 min	45 min	1:30 h	
Cartridge temperature (Bond material): ≥ +20°C				

Fixings For Chemical Anchor Systems

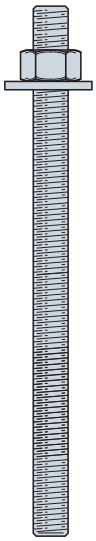


Contents

LMAS Threaded Rod



LMAS



LMAS threaded rods are intended to be used in conjunction with ATHP300BG-UK and ATHP420BG-UK resin.

Features:

- Zinc plated LMAS threaded rods are supplied with nuts & washers
- Available in M10 to M16

Material:

- Zinc Plated Steel: Grade 5.8

Product Dimensions

References	Code	Bolt Dimensions [mm]		Fixture & Hole Dimensions [mm]			
				Max Fixture Thickness	Max hole diameter within Fixture	Embedment Depth	Drilled Hole Size
		Diameter	l	t_{fix}	d_f	h_{ef}	d_o x h_o
M10x130	LMAS1012090025	M10	130	25	12	90	12 x 90
M10x150	LMAS1016085050	M10	150	50	12	85	12 x 85
M12x150	LMAS1214100035	M12	150	35	14	100	14 x 100
M12x185	LMAS1214100070	M12	185	70	14	100	14 x 100
M16x170	LMAS1618130020	M16	170	20	18	130	18 x 130
M16x200	LMAS1618130050	M16	200	50	18	130	18 x 130

DT Resin Dispensing Tool

DT300

DT380

Dispensing tool allows effortless installation of ATHP300BG-UK and ATHP420BG-UK resin.

Installation: The DT300 dispensing tool is suitable for the 300ml cartridges and the DT380 dispensing tool is suitable for the 420ml cartridges.

Key Features:

- Dispensing tool for 300ml and 420ml cartridge
- Unlike ordinary cartridge guns, the DT300 and DT380 are machined to cope with the heavier duty demands of concrete resins, dispensing smoothly with less effort
- Ergonomically designed for easier dispensing of the resin and better handling

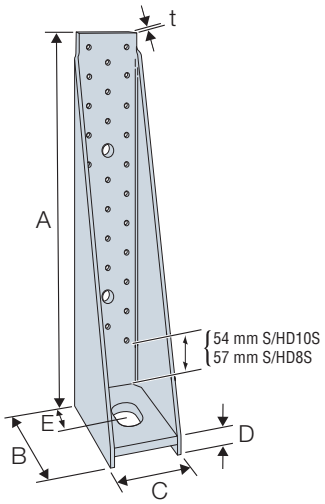
Product Dimensions

References	Description
DT300	300ml Cartridge
DT380	420ml Cartridge

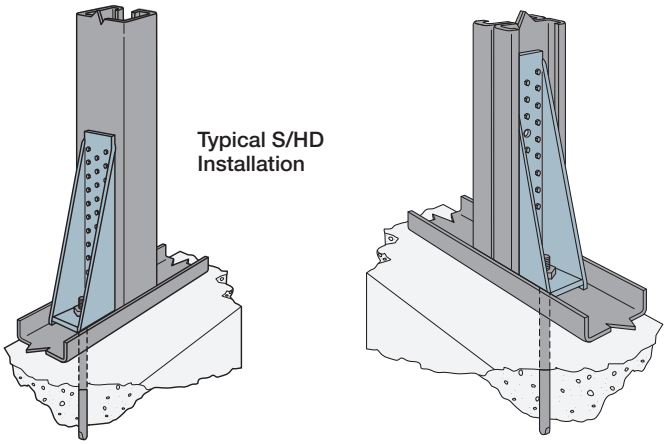
Hold Downs and Tension Ties

Contents

S/HDS Hold Downs



S/HD10S



Typical S/HD Installation

The S/HDS series of hold downs are designed to connect the building structure to the foundation. Connection to the stud is with screws. When connecting with a back to back detail, fasteners must be specified by the designer. In a back to back installation, the binding members enable the two sections to act as one.

Material: Galvanised Mild Steel: 275g/m^2

Installation: Use the specified number of fasteners to attach the strap portion of the tie to the light gauge steel stud.

Connect the base to the wall or foundation with a suitable anchor; see performance table for fastener type and required bolt diameter.

Key Features:

- The S/HD8S uses a maximum of 17 fasteners and the S/HD10S uses a maximum of 22 fasteners
- Designed to utilize fewer fasteners for reduced installation times

LMAS RECOMMENDED FIXINGS

ATHP RECOMMENDED FIXINGS

E1B1414B RECOMMENDED FIXINGS

X1224D540 RECOMMENDED FIXINGS

Product Dimensions

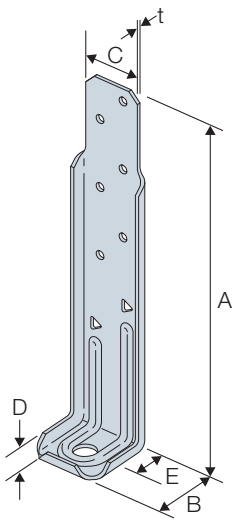
References	Hanger Dimensions [mm]						Holes		
							Flange A		Flange B
	A	B	C	D	E	t	Ø6.4	Ø14.3	Ø24x28
S/HD8S	279	86	52	22	38	3.4	19	2	1
S/HD10S	343	86	52	22	38	3.4	24	2	1

Performance Values

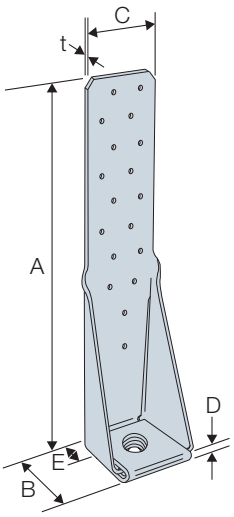
References	Fasteners				Installation	Member Thickness [mm]	Safe Working Loads [kN]		Characteristic Capacities [kN]	
	Flange A		Flange B				$R_{2,SWL,ST}$	Deflection at Load [mm]	$R_{2,k}$	Deflection at Load [mm]
	Stud (E1B1414B)	Steel Section (X1224D540)	Anchor Bolt							
	Qty	Qty	Qty	Ø [mm]						
S/HD8S	17	-	1	22	Back to Back Studs	1.2	38.9	2.2	62.2	3.7
	17	-	1	22	Back to Back Studs	1.6	39.4	2.7	62.9	4.1
	-	17	1	22	Steel Section	-	48.2	1.3	77.1	1.8
S/HD10S	22	-	1	22	Back to Back Studs	1.2	49.5	2.8	79.0	3.1
	22	-	1	22	Back to Back Studs	1.6	54.4	2.4	86.8	3.7
	-	22	1	22	Steel Section	-	55.0	1.1	88.2	1.5

1. The engineer or designer shall be responsible for specifying suitable anchor type, embedment and configuration
2. Deflection at Load includes fastener slip, hold down deformation and anchor rod elongation for hold downs installed up to 100mm above top of concrete. Hold downs may be installed raised, up to 450mm above top of concrete, with no load reduction provided that additional elongation of the anchor rod is accounted for.
3. For instances where the S/HDS hold downs are installed onto steel sections with material thickness greater than 8mm, use S1224D540 screws (suitable for use on RSJ or steel sections upto 12.5mm thick)
4. Not all fastener holes for S/HDS hold downs need to be filled, as additional fastener holes provided. Install fasteners symmetrically.

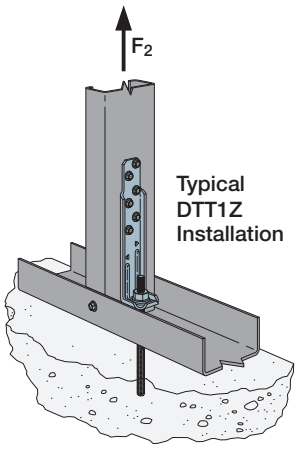
DTT/HTT Tension Ties



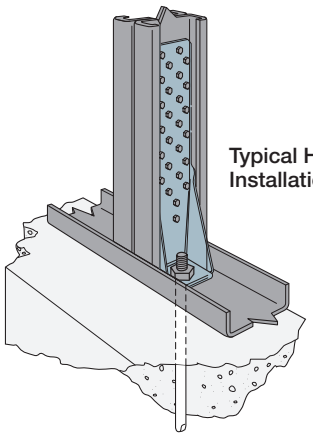
DTT1Z



HTT



Typical DTT1Z Installation



Typical HTT5 Installation

The DTT and HTT tensions ties are ideal for retrofit or new construction projects. They provide high strength, post pour, light gauge steel to concrete connections.

Material: Galvanised Mild Steel:
HTT – 275g/m², DTT – 565g/m²

Installation: Use the specified number of fasteners to attach the strap portion of the tie to the light gauge steel stud.

Connect the base to the wall or foundation with a suitable anchor; see performance table for fastener type and required bolt diameter.

Key Features:

- The DTT and HTT are single piece formed tension ties with the HTT having a 4-ply formed seat that eliminates the need for any washers

LMAS RECOMMENDED FIXINGS

ATHP RECOMMENDED FIXINGS

X34B1016 RECOMMENDED FIXINGS

Product Dimensions

References	Hanger Dimensions [mm]						Holes							
							Flange A					Flange B		
	A	B	C	D	E	t	Ø4.3	Ø4.7	Ø5.0	Ø14.0	Tri	Ø11	Ø17.5	Ø21.0
DTT1Z	180	37	38	7	19	2.0	6	-	-	-	2	1	-	-
HTT4	314	60	64	11	35	2.8	-	18	-	-	-	-	1	-
HTT5	406	56	64	11	35	2.8	-	26	-	-	-	-	1	-

Performance Values

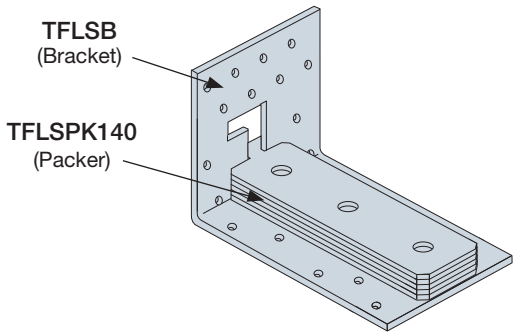
References	Fasteners			Installation	Member Thickness [mm]	Safe Working Loads [kN]		Characteristic Capacities [kN]	
	Flange A	Flange B				$R_{2,SWL,ST}$	Deflection at Load [mm]	$R_{2,K}$	Deflection at Load [mm]
	Stud (X34B1016)	Anchor Bolt							
	Qty	Qty	Ø [mm]						
DTT1Z	6	1	10	Single Stud	1.2	4.0	4.0	5.6	6.4
HTT4	18	1	16	Single Stud	1.2	14.1	2.6	21.2	4.7
	18	1		Back to Back Stud	1.2	19.5	3.2	29.7	6.4
HTT5	26	1	16	Single Stud	1.2	18.9	3.2	28.9	6.4
				Back to Back Stud	1.2	20.8	3.2	31.0	6.4
				Single Stud	1.6	18.5	3.2	28.6	6.4

1. Performance values are based upon tests completed by Simpson Strong-Tie U.S. in accordance to ICC-ES AC261 – Acceptance criteria for connectors used with Cold-Formed Steel Structural Members
2. Deflection at Load is the deflection of the hold down measured between the anchor bolt and the strap portion of the hold down when loaded to the stated tension load
3. The engineer or designer shall be responsible for specifying suitable anchor type, embedment and configuration

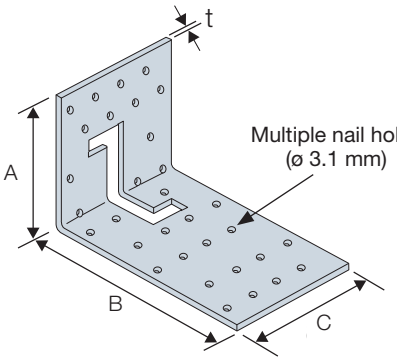
Levelling Systems

Contents

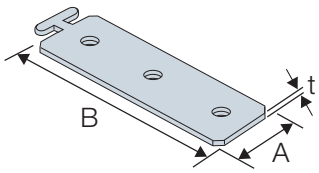
TFLS Levelling System



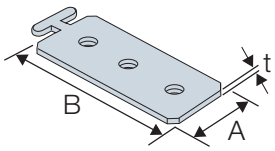
Patent Pending GB
0816765.2



TFLSB



TFLSPK140
(140x40 Packer)



TFLSPK89
(Packer 89x40)

The TFLS provides the combined function of levelling and fixing an LGS frame system sole plate to a foundation or sub-structure. It comprises a universal bracket and packing pieces which can be added or removed as required. The system transfers vertical and lateral loads from the wall to the foundation.

Material: Galvanised Mild Steel: 275g/m^2

Features:

- Adaptable - accomodates structural packing up to 30mm deep
- Universal - suitable for walls widths from 89mm to 140mm
- Flexible - packing pieces can easily be added or removed from the base plate to achieve the required depth
- Structural - satisfies requirements for permanent structural packing of the sole plate when installed at load points
- Multiple nail holes in bracket offer a variety of nailing points

Standard Installation: Starting at the highest point of the foundation slab, position and install the TFLS bracket, including one packer underneath the base track.

Position and install a second TFLS bracket at one end of the base track and level to the first by adding packers to the second TFLS bracket. If necessary, install a third TFLS at the other end of the base track and level to the first.

Infill between TFLS brackets with additional brackets. Level by adding packers as necessary to each bracket. Ideally position infill brackets under load points (stud positions) at centres specified by the engineer/building designer.

Repeat the process around the rest of the building. Once the ground floor walls are in situ, install packers under the load points not supported by a TFLS bracket.

Alternative Installation: Can also be installed to ensure mortar bedding is level between 2 or more brackets - using the packers provided.

Product Dimensions - Bracket

References	Hanger Dimensions [mm]				Holes			
					Flange A		Flange B	
	A	B	C	t	Ø3	Ø8	Ø3	Ø8
TFLSB	89	140	80	1	16	1	25	1

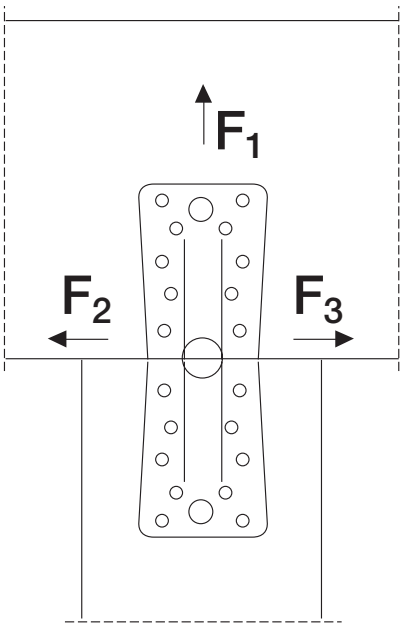
Product Dimensions - Packers

References	Hanger Dimensions [mm]			Holes
	A	B	t	Ø8
TFLSPK89	39	89	2	3
TFLSPK140	39	140	2	4

Angle Brackets

Contents

Definition of Force Directions



F_1 = Uplift, applied in line with the angle bracket.

F_2 / F_3 = Lateral load, applied perpendicular to the connection.

Basis of Design

The capacities stated in this document are un-modified characteristic capacities R_k. The design capacities are obtained according to the following formula:

$$R_{design} = \frac{R_k}{\gamma_m}$$

If combined forces are applied to the angle brackets, the following checks must be satisfied:

F_1 combined with F_2 or F_3:

$$\left(\frac{F_{1,d}}{R_{1,d}}\right) + \left(\frac{F_{2or3,d}}{R_{2or3,d}}\right) \leq 1$$

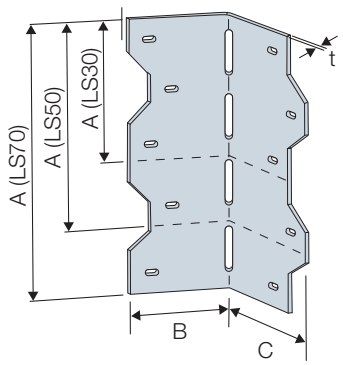
Bending Capacities

The angle brackets are typically produced from steel grade S250 GD except for ABR10525, which are made from S350 in accordance with standard EN 10346 with the characteristic lower yielding strength of 250 MPa or 350 MPa and a lower ultimate tensile strength of 330 MPa or 420 MPa respectively.

Some of the angle brackets have embossed ribs which considerably increase the bending capacity of the brackets. In such cases bending tests have been performed in accordance with ETAG 015:2012, clause 2.4.1.1.2.3.4.

The characteristic bending capacities of angle brackets without ribs can be determined by calculation as prescribed in the Eurocodes.

LS Skewable Angles



LS

LS skewable angles are a cost effective method for connecting roof sections to hip sections, and because they are on-site adjustable, they can be used for connecting angled LGS sections too.

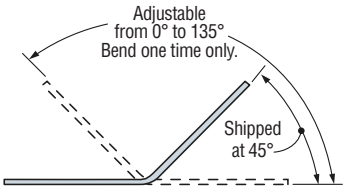
Material: Galvanised Mild Steel: 275g/m²

Installation: Use the specified number of fasteners (see performance table for fastener type).

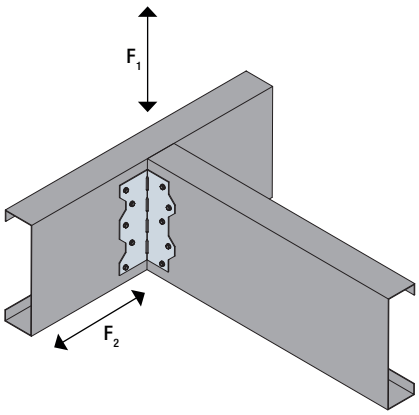
On-site skewable; bend one time only.

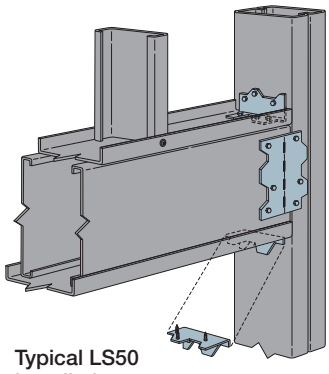
Key Features:

- Multiple screw hole locations to allow for easy installation
- Site adjustable from 0° - 135°

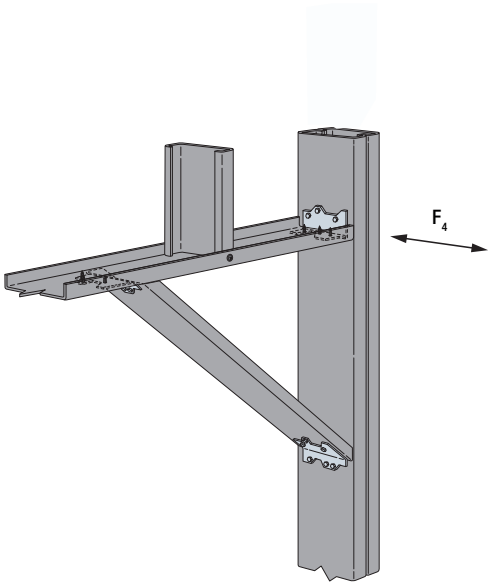


X1214D325
RECOMMENDED FIXINGS





Typical LS50
Installation



Product Dimensions

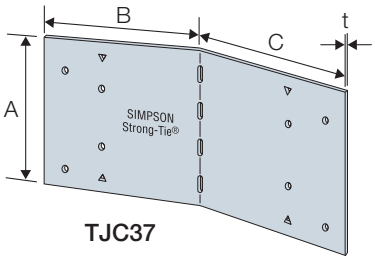
References	Hanger Dimensions [mm]				Holes	
					Flange B	Flange C
	A	B	C	t	Ø4x7 Obround	Ø4x7 Obround
LS30	85	55	55	1.3	3	3
LS50	124	55	55	1.3	4	4
LS70	162	55	55	1.3	5	5

Performance Values

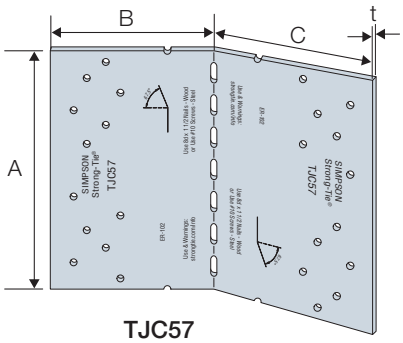
References	Fasteners		Safe Working Loads [kN]						Characteristic Capacities [kN]					
			Member Thickness [mm]						Member Thickness [mm]					
	Flange B	Flange C	1.2			1.4			1.2			1.4		
	Qty (X1214D325)	Qty (X1214D325)	$R_{1,SWL}$	$R_{2,SWL}$	$R_{4,SWL}$	$R_{1,SWL}$	$R_{2,SWL}$	$R_{4,SWL}$	$R_{1,k}$	$R_{2,k}$	$R_{4,k}$	$R_{1,k}$	$R_{2,k}$	$R_{4,k}$
LS30	3	3	1.4	0.4	1.6	2.7	-	2.2	2.2	0.6	2.6	4.3	-	3.6
LS50	4	4	3.0	0.4	1.6	3.3	0.5	2.2	4.8	0.6	2.6	5.3	0.8	3.6
LS70	5	5	3.4	0.5	2.6	4.9	0.5	3.2	5.4	0.8	4.1	7.8	0.8	5.1

1) Loads are for one party only.

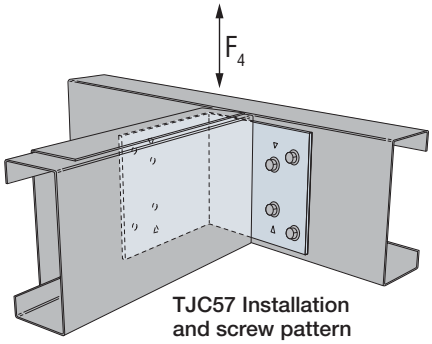
TJC Jack Truss and Rafter Connector



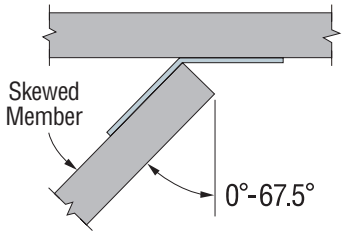
TJC37

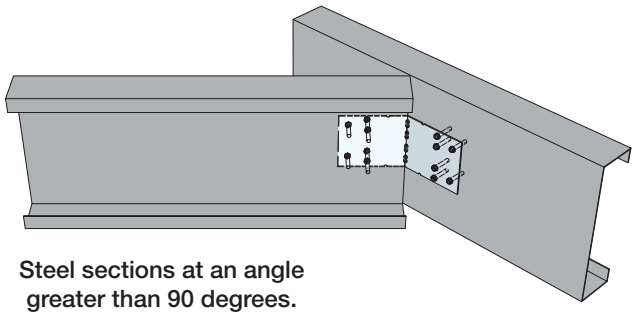


TJC57



TJC57 Installation and screw pattern





Steel sections at an angle greater than 90 degrees.

On-site adjustable angle brackets for connecting angled LGS sections, the TJC bracket can be adjusted from 0° to 67.5°. Multiple hole locations assist with on-site installation.

Material: Galvanised Mild Steel: 275g/m²

Installation: Use the specified number of fasteners (see performance table for fastener type).

With the TJC installed on the header, position the skewed member on the bend line of the TJC.

Bend the TJC to the desired position (bend one time only). Fix in place.

Key Features:

- Multiple screw hole locations allow for easy installation
- Site adjustable from 0° - 67.5°

X1214D325 RECOMMENDED FIXINGS

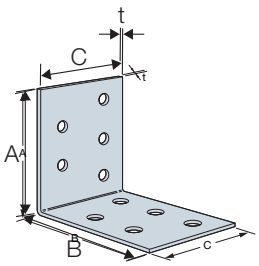
Product Dimensions

References	Hanger Dimensions [mm]				Holes Flange B	Holes Flange C
	A	B	C	t	Ø3.75	Ø3.75
TJC37	79	89	89	1.6	6	6
TJC57	130	89	89	1.6	12	12

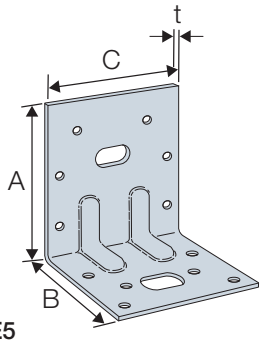
Performance Values

References	Fasteners		Header Thickness	Safe Working Loads [kN]			Characteristic Capacities [kN]		
	Flange B	Flange C		$R_{4,k}$			$R_{4,k}$		
	Qty (X1214D325)	Qty (X1214D325)	[mm]	Skew 0°	Skew 1° - 60°	Skew 61° - 67.5°	Skew 0°	Skew 1° - 60°	Skew 61° - 67.5°
TJC37	4	4	1.2	2.9	2.5	2.1	4.7	4.0	3.4
	6	6	1.2	3.0	2.8	2.4	4.8	4.5	3.8
TJC57	8	8	1.2	5.8	5.4	5.5	9.2	8.6	8.8
	8	8	1.6	8.0	8.0	8.0	12.7	12.7	12.7

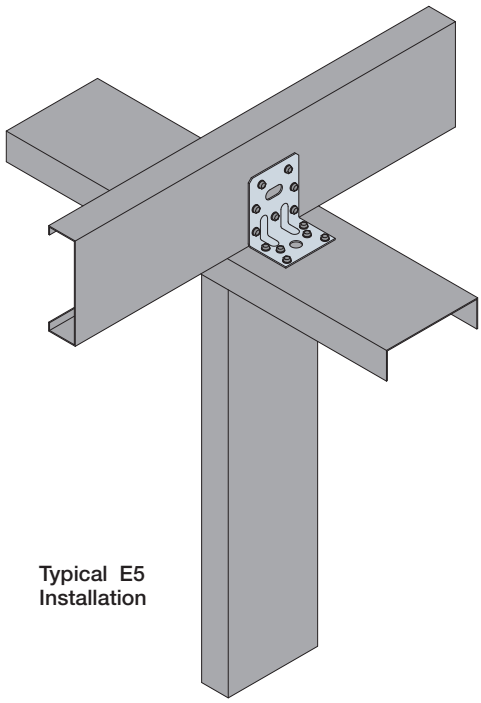
E5/ES Angle Brackets



ES



E5



Typical E5 Installation

Angle brackets make an effective ergonomic connection from an LGS channel section to an LGS stud section, with features like the embossed ribs considerably increasing the bracket's bending capacity.

Material: Galvanised Mild Steel: 275g/m^2

Installation: Position angle bracket in place. Fix with appropriate number of fasteners.

Key Features:

- Reinforcing ribs provide enhanced performance
- Multiple screw hole locations allow for easy installation

Product Dimensions

References	Hanger Dimensions [mm]				Holes			
					Flange A		Flange B	
	A	B	C	t	Ø5	Ø11x22	Ø5	Ø11x22
E5/2C50	75	48	65	2	7	1	6	1

Product Dimensions

References	Hanger Dimensions [mm]				Holes Flange A	Holes Flange B
	A	B	C	t	Ø5	Ø5
ES10/40C50	60	60	40	2.5	5	5

Bending Capacities

References	Charateristic Bending Capacities	
	Lever Arm 'x' [mm]	$M_{R,k}$ [kNmm]
E5/2C50	0 ≤ x ≤ 27.3	56 - 3.47x
	27.3 ≤ x	8.3

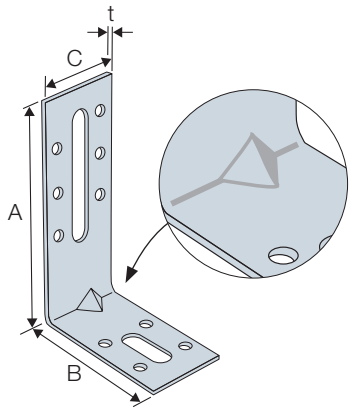
1) 1 Bracket per connection
2) No Rotation allowed

Bending Capacities

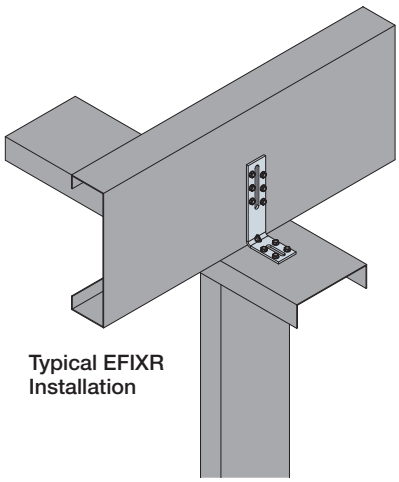
References	Characteristic Bending Capacities	
	Lever Arm 'x' [mm]	$M_{R,k}$ [kNmm]
ES10/40C50	0 ≤ x ≤ 6	13.7

1) 1 Bracket per connection
2) No Rotation

EFIXR Angle Brackets



EFIXR



Typical EFIXR Installation

Angle brackets make an effective ergonomic connection from an LGS channel section to an LGS stud sections, with features like the embossed ribs considerably increasing the bracket's bending capacity.

Material: Galvanised Mild Steel: 275g/m^2

Installation: Position angle bracket in place. Fix with appropriate number of fasteners.

Key Features:

- Reinforcing ribs provide enhanced performance
- Multiple screw hole locations allow for easy installation
- Slots allow for a temporary fix and adjustment of the position of the bracket before final installation

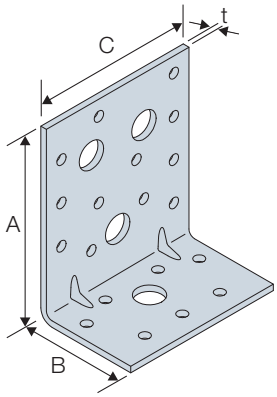
Product Dimensions

References	Hanger Dimensions [mm]				Holes			
					Flange A		Flange B	
	A	B	C	t	Ø5	Ø6.5x65	Ø5	Ø8.5x30
EFIXR1053C50	98	52	30	2.5	6	1	4	1
EFIXR1253C50	117	52	30	3	6	1	4	1

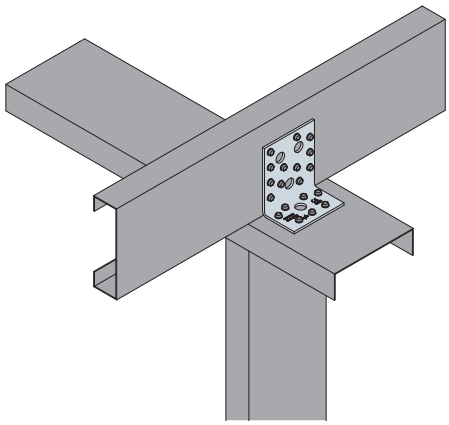
Bending Capacities

References	Characteristic Bending Capacity Flange B	
	Lever Arm 'x' [mm]	$M_{R,k}$ [kNmm]
EFIXR1053C50	0 ≤ x ≤ 52	4.5
EFIXR1253C50	0 ≤ x ≤ 52	6.5

AE Angle Brackets



AE76-R



Typical AE Installation

Angle brackets make an effective ergonomic connection from an LGS channel section to an LGS stud sections, with features like the embossed ribs considerably increasing the bracket's bending capacity.

Material: Galvanised Mild Steel: 275g/m^2

Installation: Position angle bracket in place. Fix with appropriate number of fasteners.

Key Features:

- Reinforcing ribs provide enhanced performance
- Multiple screw hole locations allow for easy installation

Product Dimensions

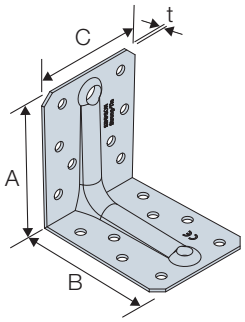
References	Hanger Dimensions [mm]				Holes			
					Flange A		Flange B	
	A	B	C	t	Ø5	Ø13	Ø5	Ø13
AE76-R	90	48	76	3	12	3	7	1

Bending Capacities

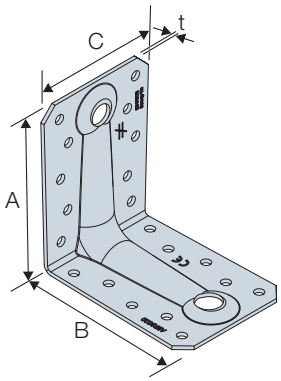
References	Bending Capacities	
	Lever Arm 'x' [mm]	Characteristic Bending Capacity [kNmm]
AE76-R	0 ≤ x ≤ 10.9	90 - 5.64 x
	10.9 ≤ x	28.7

1) 1 Bracket per connection
2) No Rotation allowed

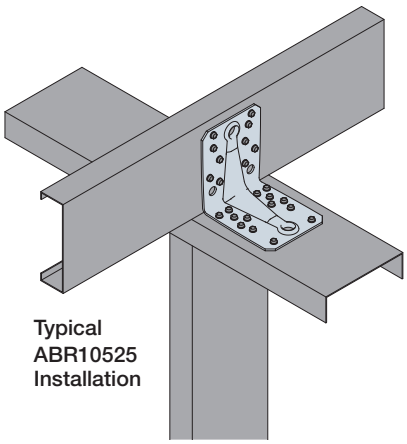
ABR Angle Brackets



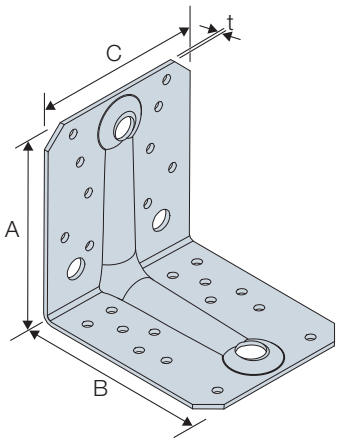
ABR70



ABR9020



Typical ABR10525 Installation



ABR10525

Angle brackets make an effective ergonomic connection from an LGS channel section to an LGS stud section, with features like the embossed ribs considerably increasing the bracket's bending capacity.

Material: Galvanised Mild Steel: 275g/m²

Installation: Position angle bracket in place. Fix with appropriate number of fasteners.

Key Features:

- Reinforcing ribs provide enhanced performance
- Multiple screw hole locations allow for easy installation

FPHSD34S1214 RECOMMENDED FIXINGS

Product Dimensions

References	Hanger Dimensions [mm]				Holes					
					Flange A			Flange B		
	A	B	C	t	Ø5	Ø8.5	Ø11	Ø5	Ø8.5	Ø14
ABR70	70	70	55	2	6	1	-	6	1	-
ABR9020	88	88	65	2	10	-	1	10	-	1
ABR10525	105	105	90	2.5	10	-	1	14	-	1

Performance Values

References	Fasteners		Member Thickness [mm]	Safe Working Loads [kN]		Characteristic Loads [kN]		Slip Modulus F_1 [kNmm]	Slip Modulus $F_2 = F_3$ [kNmm]
	Flange A	Flange B							
	Qty (FPHSD34S1214)	Qty (FPHSD34S1214)		$R_{1,SWL}$	$R_{2,SWL} = R_{3,SWL}$	$R_{1,k}$	$R_{2,k} = R_{3,k}$		
ABR10525	10	14	1.2	4.3	7.0	6.8	11.2	0.6	2.8
	10	14	1.6	5.1	8.6	8.2	13.8	0.7	3.8

Bending Capacities

Characteristic Bending Capacity Flange B		
References	Lever Arm 'x' [mm]	$M_{R,k}$ [kNmm]
ABR10525	10 ≤ x ≤ 27.5	613-14.26x
	27.5 ≤ x ≤ 57.4	343-4.43x
	57.4 ≤ x	88.8

Bending Capacities

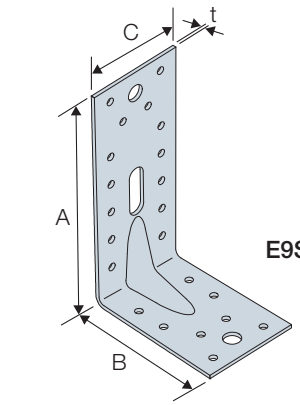
Characteristic Bending Capacity Flange B		
References	Lever Arm 'x' [mm]	$M_{R,k}$ [kNmm]
ABR9020	0 ≤ x ≤ 28	150-3.13x
	28 ≤ x ≤ 42	108-1.61x
	42 ≤ x	41.0

Bending Capacities

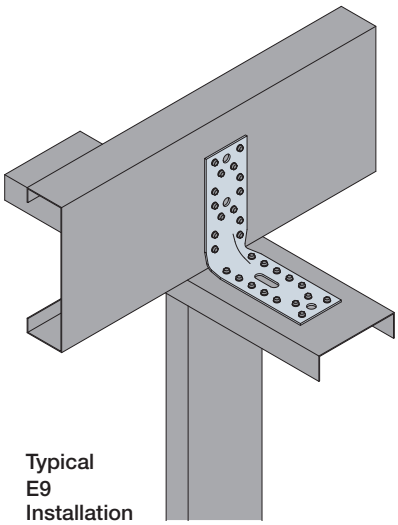
Characteristic Bending Capacity Flange B		
References	Lever Arm 'x' [mm]	$M_{R,k}$ [kNmm]
ABR70	0 ≤ x ≤ 28.8	139-3.97x
	28.8 ≤ x ≤ 44	41-0.56x
	44 ≤ x ≤ 62.5	29-0.29x
	62.5 ≤ x	10.6

1) Refer to page 39 for load directions.

E9/E9S Angle Brackets



E9S/2.5



Typical
E9
Installation

Angle brackets make an effective ergonomic connection from an LGS channel section to an LGS stud sections, with features like the embossed ribs considerably increasing the bracket's bending capacity.

Material: Galvanised Mild Steel: 275g/m^2

Installation: Position angle bracket in place. Fix with appropriate number of fasteners.

Key Features:

- Reinforcing ribs provide enhanced performance
- Multiple screw hole locations allow for easy installation

FPHSD34S1214 RECOMMENDED FIXINGS

Product Dimensions

References	Hanger Dimensions [mm]				Holes				
					Flange A		Flange B		
	A	B	C	t	Ø5	Ø11	Ø5	Ø11	Ø11x22.5
E9/2,5	152.5	150	65	2.5	14	2	14	1	1
E9S/2,5	91.5	150	65	2.5	8	1	14	1	1

Performance Values

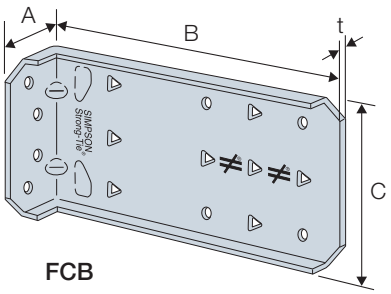
References	Fasteners		Member Thickness [mm]	Safe Working Loads [kN]		Characteristic Loads [kN]		Slip Modulus F_1 [kNmm]	Slip Modulus $F_2 = F_3$ [kNmm]
	Flange A	Flange B							
	Qty (FPHSD34S1214)	Qty (FPHSD34S1214)		$R_{1,SWL}$	$R_{2,SWL} = R_{3,SWL}$	$R_{1,k}$	$R_{2,k} = R_{3,k}$		
E9/2,5	14	14	1.2	2.6	4.2	4.1	6.7	0.3	1.9
	14	14	1.6	3.4	5.2	5.4	8.3	0.6	2.1
E9S/2,5	8	14	1.2	3.3	5.9	5.3	9.5	0.4	3.0
	8	14	1.6	3.8	5.6	6.0	9.0	0.5	2.7

Bending Capacities

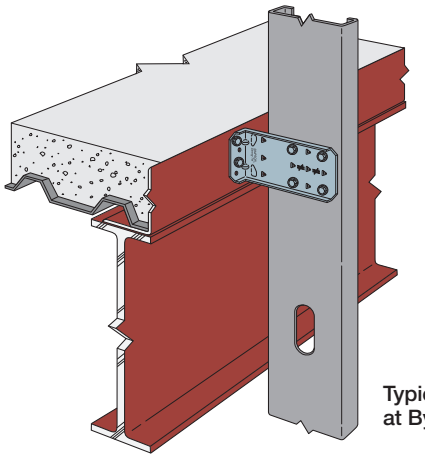
Characteristic Bending Capacity Flange B		
References	Lever Arm 'x' [mm]	$M_{R,k}$ [kNmm]
E9/2,5	0 ≤ x ≤ 36.6	236 - 5.5x
	36.6 ≤ x	21.5
E9S/2,5	0 ≤ x ≤ 36.6	236 - 5.5x
	36.6 ≤ x	21.5

1) Refer to page 39 for load directions.

FCB Bypass Frame Fixed Clip Connector



FCB



Typical FCB Installation at Bypass Framing

The FCB clip is an ergonomic, high-performing, fixed-clip connector that can be used for a variety of framing applications. It is rated for tension, compression and shear loads and offers the designer the flexibility of specifying different screw & anchorage patterns that conform to desired load levels.

Material: Galvanised Mild Steel: 275g/m^2

Installation:

- Use the specified type and number of fasteners (see performance table for fastener type)
- Use the specified number of self-drilling screws when connecting to LGS framing

Key Features:

- Rated for tension, compression and shear loads
- Allows design flexibility with varying screw and anchorage patterns to achieve different load requirements
- Strategically spaced stiffeners, embossments & anchor holes maximise connector performance

TTN25134H RECOMMENDED FIXINGS

XLQ114B1224 RECOMMENDED FIXINGS

X1B1214 RECOMMENDED FIXINGS

Product Dimensions

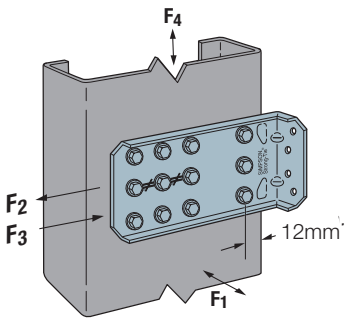
References	Hanger Dimensions [mm]				Holes		
					Flange A	Flange B	
	A	B	C	t	Ø5.5	Ø4.8	Tri
FCB43.5-R25	38	89	100	1.6	4	4	2
FCB45.5-R25	38	140	100	1.6	4	4	5
FCB47.5-R25	38	191	100	1.6	4	4	8
FCB49.5-R25	38	241	100	1.6	4	4	8
FCB411.5-R25	38	292	100	1.6	4	4	8

FCB Bypass Frame Fixed Clip Connector

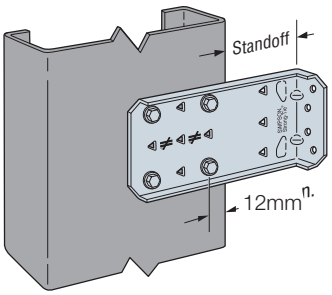
Performance Values - FCB to Stud

References	Fasteners		Safe Working Loads [kN]								Characteristic Capacities [kN]							
			Member Thickness [mm]								Member Thickness [mm]							
			1.2				1.6				1.2				1.6			
	Min/Max	Flange B Self Drilling Screw (X1B1214)	R_1	R_2	R_3	R_4	R_1	R_2	R_3	R_4	R_1	R_2	R_3	R_4	R_1	R_2	R_3	R_4
FCB43.5-R25	Min	4	0.9	4.9	4.3	5.0	1.5	5.6	4.3	6.6	1.5	7.9	6.9	8.0	2.5	8.9	6.9	10.6
	Max	6	1.2	4.9	5.6	6.5	1.5	5.6	7.7	8.5	1.9	7.9	9.0	10.4	2.5	8.9	12.3	13.6
FCB45.5-R25	Min	4	0.8	4.9	4.3	4.2	1.5	4.9	4.3	5.9	1.3	7.9	6.9	6.7	2.5	7.9	6.9	9.4
	Max	9	0.9	4.9	5.6	6.6	1.5	4.9	7.7	8.6	1.5	7.9	9.0	10.6	2.5	7.9	12.3	13.7
FCB47.5-R25	Min	4	0.6	4.9	4.2	1.5	1.2	4.9	4.2	1.6	1.0	7.9	6.7	2.3	1.9	7.9	6.7	2.6
	Max	12	1.2	4.9	5.6	4.7	1.5	4.9	7.7	6.4	1.9	7.9	9.0	7.5	2.5	7.9	12.3	10.3
FCB49.5-R25	Min	4	0.5	4.9	4.2	1.1	0.5	4.9	4.2	1.6	0.8	7.9	6.7	1.8	0.8	7.9	6.7	2.6
	Max	12	1.2	4.9	5.6	5.0	1.5	4.9	7.7	5.3	1.9	7.9	9.0	7.9	2.5	7.9	12.3	8.5
FCB411.5-R25	Min	4	0.4	4.9	4.1	0.9	0.4	4.9	4.1	1.6	0.6	7.9	6.5	1.5	0.6	7.9	6.5	2.6
	Max	12	1.2	4.9	5.6	3.8	1.5	4.9	7.7	3.8	1.9	7.9	9.0	6.1	2.5	7.9	12.3	6.1

1) Min. fastener quantity and load values — fill all round holes; max. fastener quantity and load values — fill all round and triangular holes.
2) Loads are based on clip capacity only and do not consider anchorage. The capacity of the system will be the minimum of the tabulated value and the FCB Anchorage Loads.



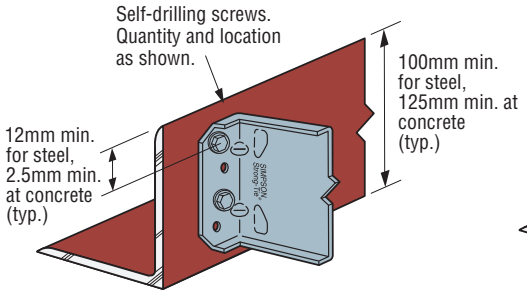
Max. Fasteners



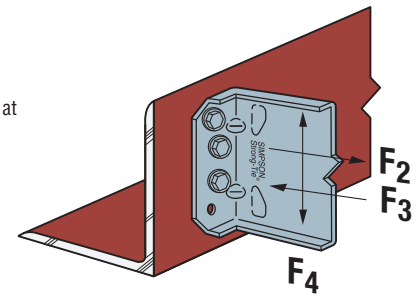
Min. Fasteners

Anchorage Values - FCB to Structure

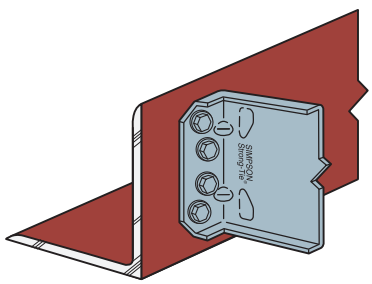
References	Anchor Fixing Qty	Safe Working Anchorage Loads (kN)										Characteristic Anchorage Loads (kN)									
		$R_{2,SWL}$ = $R_{3,SWL3}$	$R_{4,SWL}$									$R_{2,k}$ = $R_{3,k}$	$R_{4,k}$								
			FCB43.5	FCB45.5	FCB47.5		FCB49.5		FCB411.5				FCB43.5	FCB45.5	FCB47.5		FCB49.5		FCB411.5	
			Min/Max	Min/Max	Min	Max	Min	Max	Min	Max			Min/Max	Min/Max	Min	Max	Min	Max	Min	Max
Min 5.0mm thick Steel Self Drilling Screw (XLQ114B1224)	2	5.0	2.8	1.8	1.1	2.0	0.8	1.2	0.5	0.8		7.9	4.4	2.9	1.8	3.2	1.3	1.9	0.9	1.4	
	3	7.3	3.1	2.0	1.2	2.2	0.9	1.3	0.6	0.9		11.7	4.9	3.2	2.0	3.5	1.4	2.1	1.0	1.5	
	4	9.9	5.6	3.6	1.6	4.0	1.6	2.4	1.2	1.7		15.9	8.9	5.8	2.6	6.3	2.5	3.8	2.0	2.7	
C20 Concrete Titen Screws (TTN25134H)	2	1.7	1.8	1.4	0.9	1.4	0.6	0.9	0.6	0.7		2.7	3.0	2.2	1.4	2.2	1.0	1.5	1.0	1.1	
	3	2.3	2.1	2.1	1.3	2.1	0.9	1.4	0.9	1.0		3.7	3.3	3.3	2.1	3.3	1.5	2.2	1.5	1.6	
	4	3.0	2.9	2.8	1.7	2.8	1.2	1.8	1.2	1.3		4.8	4.6	4.5	2.8	4.5	2.0	2.9	2.0	2.1	



2 Anchors

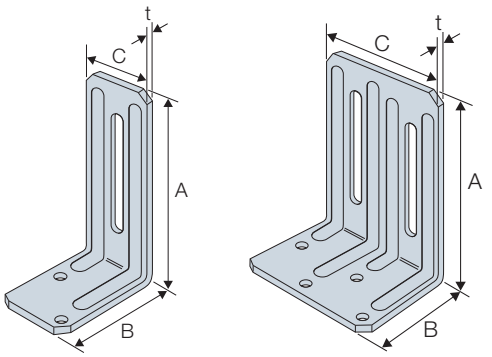


3 Anchors

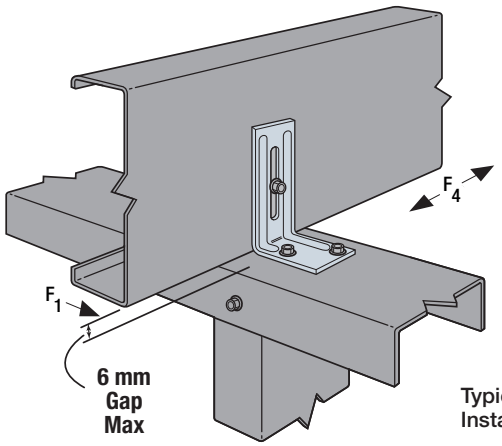


4 Anchors

STC/DTC Slotted Truss/Joist Clips



STC **DTC**



Typical STC Installation

To allow for vertical truss movement, screws into the truss or rafter should not be driven completely flush against the connector.

STC & DTC truss clips are used to provide alignment control between an LGS roof truss or joist and non-bearing walls. The 38mm slot permits vertical truss or joist chord movement when loads are applied.

Material: Galvanised Mild Steel: 275g/m^2

Installation:

- Use the specified number of fasteners (see performance table for fastener type)
- Use a maximum of one screw per slot

Key Features:

- Reinforcing ribs provide enhanced performance

X1214D325 RECOMMENDED FIXINGS

Product Dimensions

References	Hanger Dimensions [mm]				Holes	
					Flange A	Flange B
	A	B	C	t	Ø4.3x43 Slot	Ø4.3
STC	70	48	32	1.3	1	2
DTC	70	48	64	1.3	2	4

Performance Values - STC/DTC to Stud

References	Fasteners		Safe Working Loads [kN]						Characteristic Capacities [kN]					
			Without Gap		6mm Maximum Gap		12mm Maximum		Without Gap		6mm Maximum		12mm Maximum	
	Flange A (X1214D325)	Flange B (X1214D325)	$R_{1,SWL}$	$R_{4,SWL}$	$R_{1,SWL}$	$R_{4,SWL}$	$R_{1,SWL}$	$R_{4,SWL}$	$R_{1,K}$	$R_{4,K}$	$R_{1,K}$	$R_{4,K}$	$R_{1,K}$	$R_{4,K}$
STC	1	2	0.82	0.16	0.60	0.16	0.33	0.16	1.32	0.25	0.96	0.25	0.53	0.25
DTC	2	4	0.89	0.71	0.89	0.71	0.64	0.71	1.42	1.14	1.42	1.14	1.03	1.14

1) Truss or rafter must be bearing on top plate to achieve loads under "Without Gap"
2) Clips are required on both sides of the truss to achive R_4 loads (stagger parts to avoid screw interferences)
3) To allow for vertical truss movement, screws into the truss or rafter should not be driven completely flush against the connector

Over-Sail Movement Connectors

Contents

Movement Clip Connectors for Over-Sail Projects

As part of a commitment to expand our range of products for light gauge steel applications, we have developed a new line of connectors for use with buildings having “over-sail” structures.

Over-sail projects require a variety of connectors which provide a load path from the over-sail structure to the primary structure for:

- Wind loads
- Seismic loads
- Dead loads

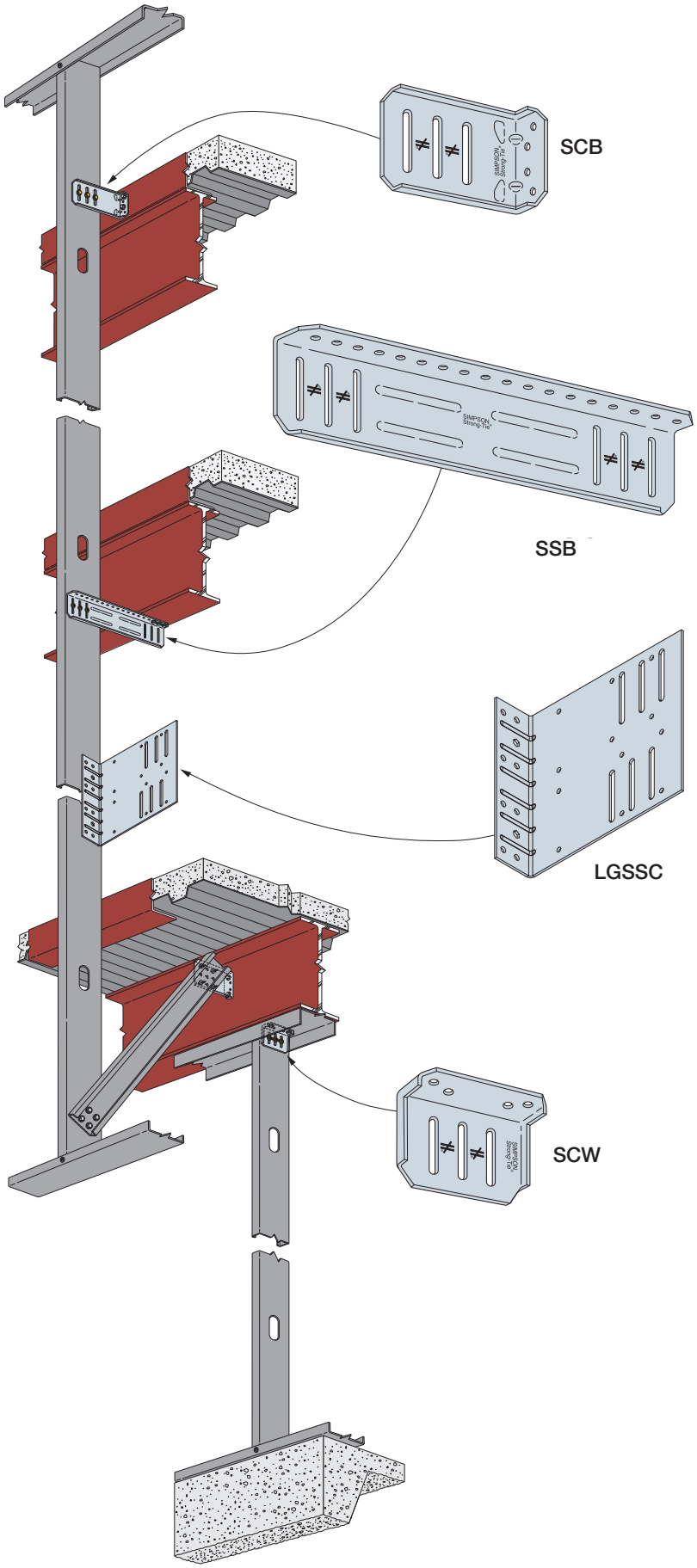
Movement clip connectors enable the structural building frame to deflect independently of the over-sail configuration.

Fixed clip connectors support the dead load of an over-sail structure from the structural frame. These have the added benefit of providing a connector solution for load bearing walls and roof systems.

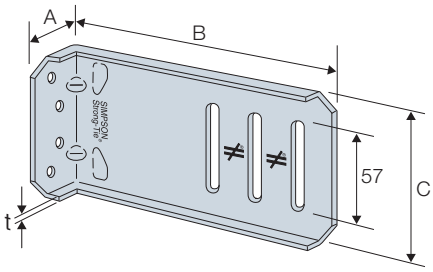
Our connectors for over-sail construction methods accommodate many different framing applications in a variety of locations.

We also offer connectors for head-of-wall and strut applications.

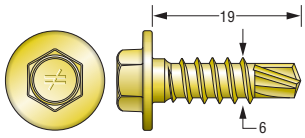
The movement clip connectors are designed to be fixed to the building structure and the over-sail steel section. The slots in the connectors allow deflection of the over-sail to occur independently of the building structure, accommodating movement when encountered in the building design.



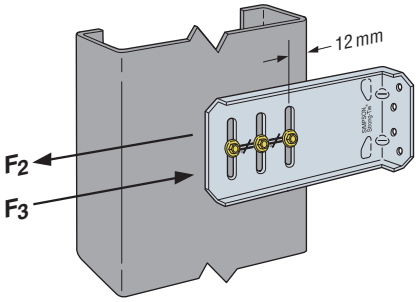
SCB Movement Clip Connector

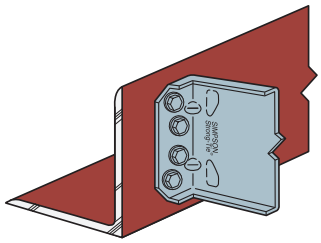


SCB

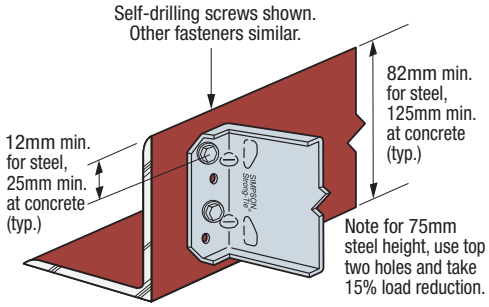


XLSH34B1414-83
Ø6 mm
Shouldered Screw

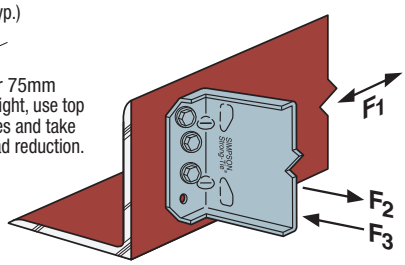




Four Anchors



Two Anchors



Three Anchors

The SCB movement clip connector is a high performance connector for over-sail framing applications. Designed to reduce design time and overall installation cost. Various anchorage methods have been tested, and the resulting allowable anchorage loads eliminates the need to manually design connector anchorage.The SCB as a single connector can accommodate applications that would typically require two connectors, reducing material and labour costs. The SCB connectors are manufactured in a number of different sizes to accommodate a variety of stand off conditions and steel stud sizes.

Material: Galvanised Mild Steel: 275g/m²

Installation: Use the specified number of fasteners (see performance table for fastener type).

Use the specified number of shouldered screws (XLSH34B1414 – provided). Install shouldered screws in the slots adjacent to the No-Equal stamp.

Use a maximum of one screw per slot

Key Features:

- Provides a full 25mm of both upward and downward movement
- Supplied with Ø6 shouldered screws (XLSH34B1414-83)

XLSH34B1414 RECOMMENDED FIXINGS

XLQ114B1224 RECOMMENDED FIXINGS

TTN25134H RECOMMENDED FIXINGS

Performance Values - SCB to Stud

References	Fasteners	Safe Working Loads [kN]						Characteristic Capacities [kN]					
		Member Thickness [mm]						Member Thickness [mm]					
	Flange B	1.2			1.6			1.2			1.6		
	Qty (XLSH34B1414)	$R_{1,SWL}$	$R_{2,SWL}$	$R_{3,SWL}$	$R_{1,SWL}$	$R_{2,SWL}$	$R_{3,SWL}$	$R_{1,K}$	$R_{2,K}$	$R_{3,K}$	$R_{1,K}$	$R_{2,K}$	$R_{3,K}$
SCB43.5-KT	2	0.7	2.7	3.1	1.0	3.4	4.3	1.1	4.3	4.9	1.5	5.4	6.9
SCB45.5-KT	2	0.7	2.7	3.1	0.9	3.4	4.3	1.1	4.3	4.9	1.4	5.4	6.9
	3	0.7	4.0	4.4	0.9	4.4	5.6	1.1	6.4	7.1	1.4	7.0	9.0
SCB47.5-KT	2	0.5	2.7	3.1	0.7	3.4	4.2	0.9	4.3	4.9	1.1	5.4	6.7
	3	0.5	4.0	4.4	0.7	4.4	5.6	0.9	6.4	7.1	1.1	7.0	9.0
SCB49.5-KT	2	0.5	3.1	3.1	0.5	3.4	4.2	0.8	4.9	4.9	0.7	5.4	6.7
	3	0.5	4.0	4.4	0.5	4.4	5.6	0.8	6.4	7.1	0.7	7.0	9.0
SCB411.5-KT	2	0.4	3.1	3.1	0.4	4.4	4.1	0.6	4.9	4.9	0.6	7.0	6.5
	3	0.4	3.8	4.4	0.4	4.4	5.6	0.6	6.1	7.1	0.6	7.0	9.0

1. When the SCB connector is used with two shouldered screws, the screws may be installed in any two slots.
2. Stated loads are based on clips installed with screws in the anchor leg.
For other anchorage installations, the capacity of the connection system will be the minimum of the tabulated value and the loads, from the SCB Anchorage Loads table

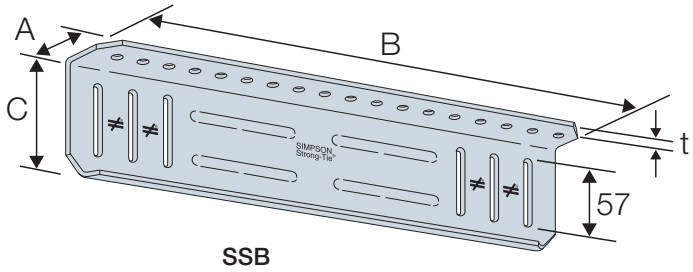
Product Dimensions

References	Hanger Dimensions [mm]				Holes	
					Flange A	Flange B
	A	B	C	t	Ø5.5	Ø6.4 x 57 Slot
SCB43.5-KT	38	89	100	1.6	4	2
SCB45.5-KT	38	140	100	1.6	4	3
SCB47.5-KT	38	191	100	1.6	4	3
SCB49.5-KT	38	241	100	1.6	4	3
SCB411.5-KT	38	292	100	1.6	4	3

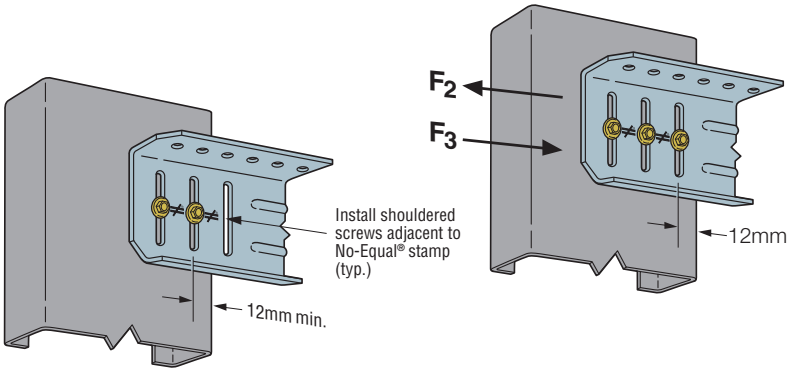
Anchorage Values

Anchorage Type Flange A	Anchorage Fasteners	Safe Working Loads [kN]	Characteristic Loads [kN]
	Qty	$R_{2,SWL}$	$R_{2,K}$
Min 5.0mm thick Steel Self Drilling Screw (XLQ114B1224)	2	5.0	7.6
	3	7.3	11.4
	4	9.9	15.2
C20 Concrete Titen Screws (TTN25134H)	2	1.7	2.7
	3	2.3	3.2
	4	3.0	3.6

SSB Bypass Framing Movement Clip Strut Connector



SSB



The SSB framing movement clip is a versatile strut connector commonly used at the bottom of a steel beam to accommodate large over-sail structures.

Material: Galvanised Mild Steel: 275g/m²

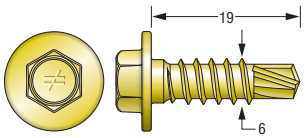
Installation: Use the specified number of fasteners (see performance table for fastener type).

Use the specified number of shoulder screws (XLSH34B1414 – provided). Install shouldered screws in the slots adjacent to the No-Equal stamp.

If the SSB intrudes on interior space, it can be trimmed. The trimmed part shall allow an edge distance from the centre of the nearest anchor to the end of the trimmed part of a minimum of 14mm.

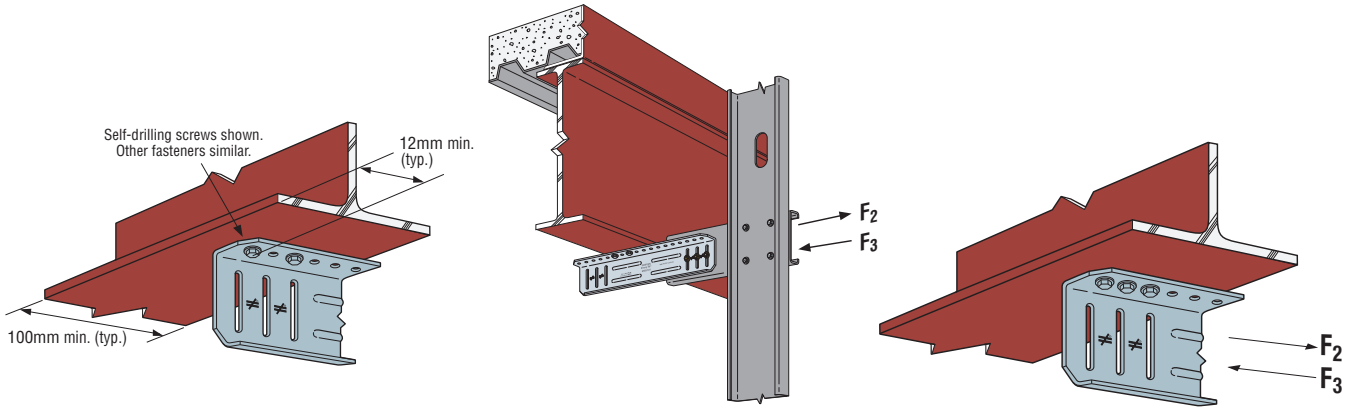
Key Features:

- Provides a full 25mm of both upward and downward movement
- Supplied with Ø6 shouldered screws (XLSH34B1414-83)



XLSH34B1414

RECOMMENDED FIXINGS



Product Dimensions

References	Hanger Dimensions [mm]				Holes	
					Flange A	Flange B
	A	B	C	t	Ø5.5	Ø6.4x57 Slot
SSB3.518-KT	41	89	457	1.6	18	6

Performance Values - SSB to Stud

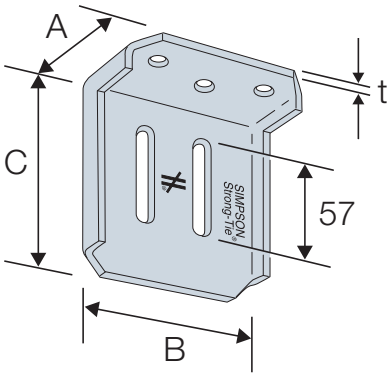
References	Number of LGS Fasteners in Flange B	Safe Working Loads [kN]				Characteristic Capacities [kN]			
		Member Thickness [mm]				Member Thickness [mm]			
		1.2		1.6		1.2		1.6	
	Qty (XLSH34B1414-83)	$R_{2,SWL}$	$R_{3,SWL}$	$R_{2,SWL}$	$R_{3,SWL}$	$R_{2,K}$	$R_{3,K}$	$R_{2,K}$	$R_{3,K}$
SSB3.518-KT	2	3.1	3.1	4.8	4.4	4.9	4.9	7.7	7.0
	3	4.6	4.8	5.9	5.4	7.3	7.7	9.5	8.7

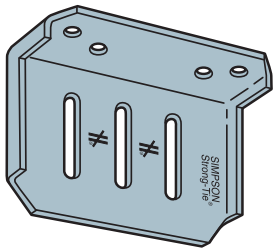
Performance Values - SSB to Steel

Anchorage Type Flange A	Anchorage Fasteners (XLQ114B1224)	Safe Working Loads [kN]	Characteristic Loads [kN]
	Qty	$R_2 = R_{3,SWL}$	$R_2 = R_{3,k}$
Min 5.0mm thick Steel	2	5.6	8.9
	3	8.3	9.5

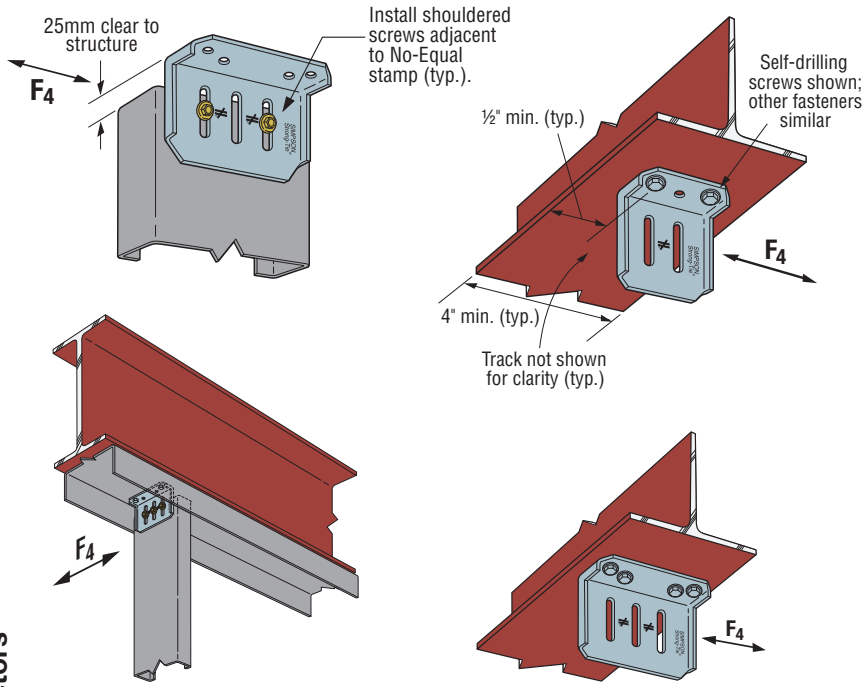
1. When the SSB connector is used with two shouldered screws, the screws may be installed in any two slots.
2. The capacity of the connection will be the minimum of the performnace values for SSB to stud or SSB to steel
3. The maximum stand off for SSB with (2) screws and (3) screws is 310mm and 280mm respectively.

SCW Head of Wall Movement Clip Connector





SCW



SCW movement clip connectors are primarily used in deflection head applications that require vertical movement relative to the structure. The connector can also be used to strengthen window and door jambs for projects that utilise slip-track.

Material: Galvanised Mild Steel: 275g/m^2

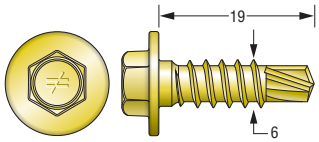
Installation: Use the specified number of fasteners (see performance table for fastener type).

Use the specified number of shoulder screws (XLSH34B1414 – provided). Install shouldered screws in the slots adjacent to the No-Equal stamp.

Use a maximum of one screw per slot.

Key Features:

- Provides a full 25mm of both upward and downward movement
- Supplied with Ø6mm shouldered screws (XLSH34B1414-83)



XLSH34B1414-83
Ø6 mm
Shouldered Screw

XLQ114B1224 RECOMMENDED FIXINGS

XLSH34B1414 RECOMMENDED FIXINGS

Product Dimensions

References	Hanger Dimensions [mm]				Holes	
					Flange A	Flange B
	A	B	C	t	Ø5.5	Ø5 x 57 Slot
SCW3.25-KT	38	83	100	1.6	3	2
SCW5.5-KT	38	140	100	1.6	4	3

Performance Values - SCW to Stud

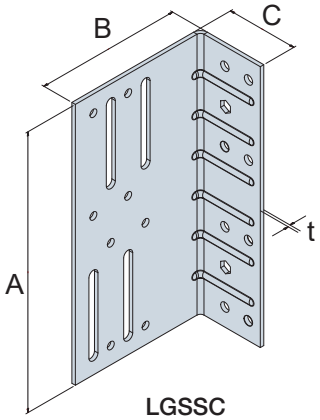
References	Number of LGS Fasteners in Flange B	Safe Working Loads [kN]		Characteristic Capacities [kN]	
		Member Thickness [mm]		Member Thickness [mm]	
		1.2	1.6	1.2	1.6
	Qty (XLSH34B1414-83)	$R_{4,SWL}$	$R_{4,SWL}$	$R_{4,k}$	$R_{4,k}$
SCW3.25-KT	2	2.8	3.4	4.5	5.4
SCW5.5-KT	2	2.8	4.4	4.5	7.0
	3	2.8	5.4	4.5	8.7

Performance Values - SCW to Steel Section

References	Anchorage Fasteners	Minimum Base Material	Anchorage Loads	
			Safe Working Loads [kN]	Characteristic Loads [kN]
	Qty (XLQ114B1224)		$R_{4,SWL}$	$R_{4,k}$
SCW3.25-KT	2	Minimum 5.0mm thick Steel	3.2	5.1
	3		4.8	7.7
SCW5.5-KT	2		3.4	5.5
	4		6.9	11.0

1. When the SCW5.5 connector is used with two shouldered screws, install screws in the outermost slots.
2. The capacity of the system will be the minimum of the tabulated value for the SCW to Stud or the SCW to Steel Section.

LGSSC Light Gauge Steel Splicing Clip



LGSSC

The LGSSC is a universal splicing clip designed to connect the over-sail LGS studs to the primary structure in continuous walling installations.

The LGSSC provides a secure connection to the floor slab whilst allowing for up to 50mm of vertical movement between butt jointed light gauge steel studs. It is non-handed, enabling an easier ordering process for site.

Material: Galvanised Mild Steel: 275g/m^2

Installation:

1) Connect to Primary Structure
Secure connector to primary structure with specified fasteners (2 No. TTN25134H through hexagonal holes for concrete support [B] or 8 No XLQ114B1224 through round holes for steel support [C]). When connecting to a concrete support a minimum fastener edge distance of 50mm is required [A].

2) Install Lower Stud
Secure lower stud with specified number of XLSH34B1414 screws into the movement slots [D]. Screws are to be fixed centrally within the movement slots, allowing vertical movement of the lower stud. A minimum end distance of 12.5mm is required [E].

3) Install Upper Stud
Secure upper stud with specified number of X1B1214R100 screws through the round holes [F], ensuring that the lower screws are a minimum of 12.5mm from the bottom end of steel stud [G]. Minimum gap between upper and lower studs is 12.5mm [H].

Key Features:

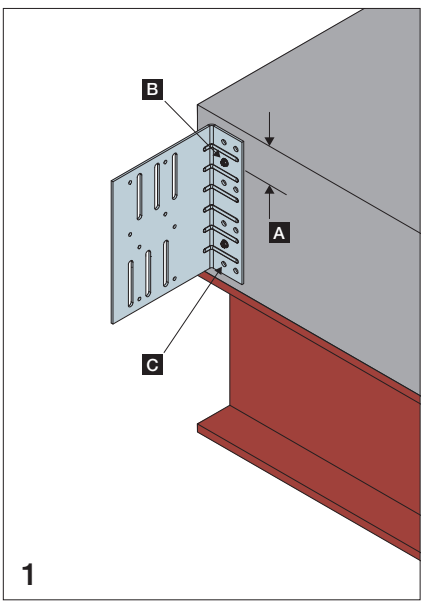
- Suitable for use on concrete or steel primary structures
- Accommodates up to 50mm of movement between butt jointed light gauge steel studs
- Suitable for light gauge steel stud thickness of 1.2mm to 1.6mm and widths of 100mm to 150mm
- Performance values for F_1 and F_3 load directions, when connected to concrete or hot rolled steel
- Maximum hot rolled steel material thickness 12.5mm
- 50mm fastener edge distance required when fixed to a concrete substrate

X1B1214 RECOMMENDED FIXINGS

XLQ114B1224 RECOMMENDED FIXINGS

XLSH34B1414 RECOMMENDED FIXINGS

TTN25134H RECOMMENDED FIXINGS



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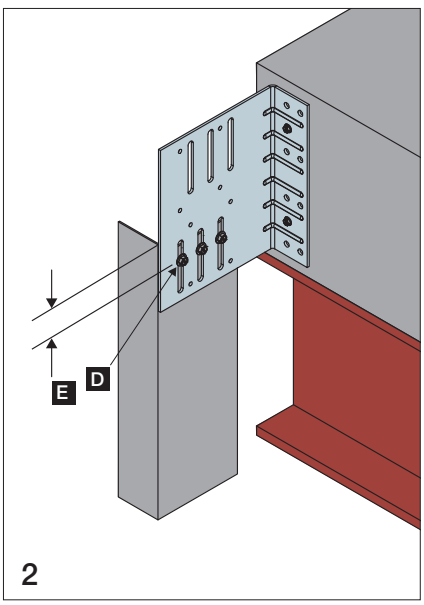

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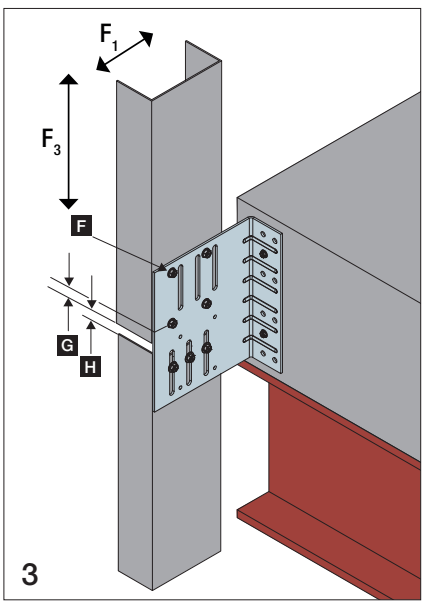


3

LGSSC Light Gauge Steel Splicing Clip

Product Dimensions

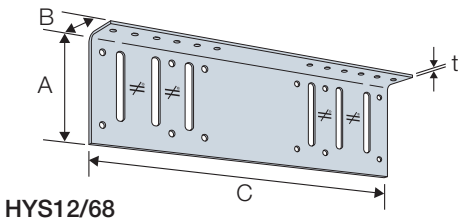
References	Hanger Dimensions [mm]				Holes			
					Flange B		Flange C	
	A	B	C	t	Ø4.1	Ø6.5 x 50 Slot	Ø6	Hexagonal
LGSSC90	175	90	43	2.5	8	4	8	2
LGSSC140	175	140	43	2.5	8	6	8	2
LGSSC190	175	190	43	2.5	12	6	8	2
LGSSC240	175	240	43	2.5	12	6	8	2
LGSSC290	175	290	43	2.5	12	6	8	2

Performance Values

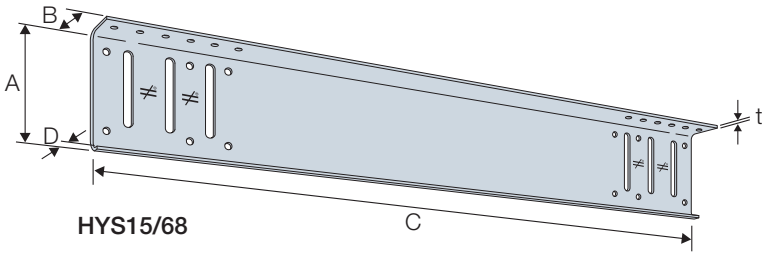
References	Fasteners				Member Thickness [mm]	Safe Working Loads [kN]				Characteristic Capacities [kN]			
	Flange B (Upper Stud)	Flange B (Lower Stud)	Flange C			Steel Section (1)		Concrete (2)		Steel Section (1)		Concrete (2)	
			Steel Suppport	Concrete Support									
	Qty (X1B1214)	Qty (XLSH34B1414)	Qty (XLQ114B1224)	Qty (TTN25134H)		$R_{1,SWL}$	$R_{3,SWL}$	$R_{1,SWL}$	$R_{3,SWL}$	$R_{1,k}$	$R_{3,k}$	$R_{1,k}$	$R_{3,k}$
LGSSC90	4	2	8	2	1.2	19.0	14.8	6.0	10.9	30.4	23.6	9.6	17.4
					1.6	19.0	21.8	6.0	10.9	30.4	34.8	9.6	17.4
LGSSC140	4	3	8	2	1.2	19.0	14.8	6.0	10.9	30.4	23.6	9.6	17.4
					1.6	19.0	21.8	6.0	10.9	30.4	34.8	9.6	17.4
LGSSC190	6	3	8	2	1.2	19.0	22.1	6.0	10.9	30.4	35.4	9.6	17.4
					1.6	19.0	32.6	6.0	10.9	30.4	52.2	9.6	17.4
LGSSC240	6	3	8	2	1.2	19.0	22.1	6.0	10.9	30.4	35.4	9.6	17.4
					1.6	19.0	32.6	6.0	10.9	30.4	52.2	9.6	17.4
LGSSC290	6	3	8	2	1.2	19.0	22.1	6.0	10.9	30.4	35.4	9.6	17.4
					1.6	19.0	32.6	6.0	10.9	30.4	52.2	9.6	17.4

1. Minimum thickness of steel support 5.0mm
2. C20 Concrete

HYS Hybrid Strut



HYS12/68



HYS15/68

The Hybrid Strut can be used as either a slide or rigid clip. Commonly used at the bottom of a hot rolled steel girder to accommodate excessive stand off conditions associated with some over–sail connection details.

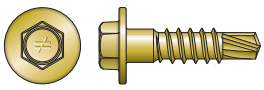
Material: Galvanised Mild Steel: 275g/m²

Installation: Fix the bracket to the hot rolled steel section using X1224D540 screws (number varies depending on hot rolled steel size).

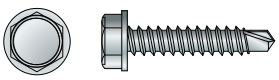
Connect strut to LGS over–sail section with 3 No. XLSH78B1414 shoulder screws. Simpson Strong-Tie No-Equal stamps mark the centre of the slots to help ensure the correct placement of the shoulder screws.

Key Features:

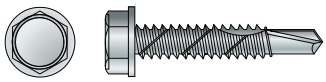
- Available in 305mm and 381mm lengths
- Ergonomically positioned slots minimizes eccentric loads and maximizes capacity
- Over–sail application allows 25mm of vertical movement in each direction when shoulder screws are used through the centre of the slot
- Simpson Strong-Tie No-Equal stamps mark the centre of the slots to help ensure the correct placement of the shoulder screws



XLSH78B1414



X1214D325



X1224D540

Product Dimensions

References	Hanger Dimensions [mm]					Holes Flange A		Holes Flange B
	A	B	C	D	t	Ø4.8	Ø6.35x57	Ø4.8
HYS12/68-KT25	89	38	305	-	2.0	12	6	12
HYS15/68-KT25	89	38	381	13	2.0	12	6	12

Maximum Stand Off Distance

References	Slip-Clip		Fixed-Clip	
	S2	S3	F4	F6
HYS12/68-KT25	175	143	127	127
HYS15/68-KT25	251	219	203	203

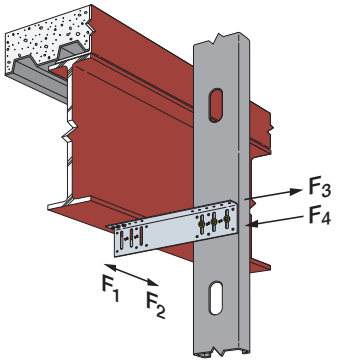
[1] Maximum stand off distance's are for two or three fasteners to primary structure

HYS Hybrid Strut

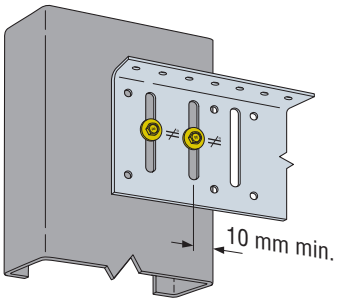
Performance Values - Slide Clip - HYS to Stud

References	Fasteners		Member Thickness [mm]	Screw Installation Pattern(2)	Safe Working Loads [kN]			Characteristic Capacities [kN]		
	Stud	Qty (XLSH78B1414)			$R_{1,SWL} = R_{2,SWL}$	$R_{3,SWL}$	$R_{4,SWL}$	$R1_{,K} = R_{2,K}$	$R_{3,K}$	$R_{4,K}$
HYS12/68-KT25		2	1.2	S2	0.7	3.8	2.8	1.1	6.0	4.4
		3		S3	0.7	5.7	5.6	1.1	9.1	9.0
		2	1.6	S2	1.1	4.6	4.4	1.7	7.4	7.1
		3		S3	1.1	7.1	6.9	1.7	11.3	11.0
HYS15/68-KT25		2	1.2	S2	0.7	3.8	2.8	1.1	6.0	4.4
		3		S3	0.7	5.7	5.6	1.1	9.1	9.0
		2	1.6	S2	1.1	4.6	4.4	1.7	7.4	7.1
		3		S3	1.1	7.1	6.9	1.7	11.3	11.0

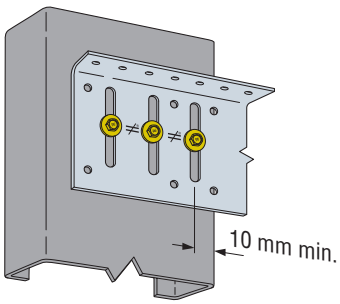
2. See illustrations below for fastener placement to stud framing.



Slide Clip Installation



Slide Clip Screw Pattern S2 HYS fixed to Stud with 2 No Shouldered Screws



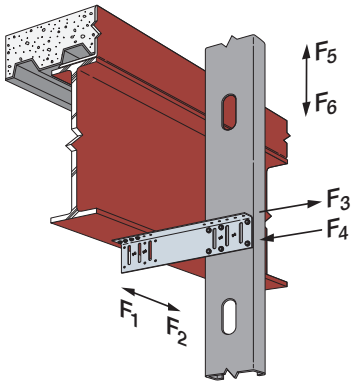
Slide Clip Screw Pattern S3 HYS fixed to Stud with 3 No Shouldered Screws

(No screws required in small round holes in slide application)

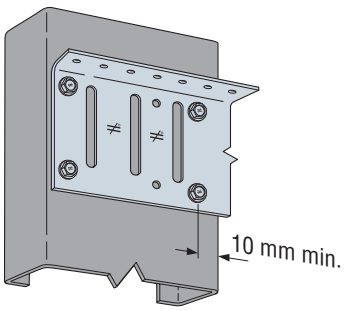
Performance Values - Fixed Clip - HYS to Stud

References	Fasteners		Member Thickness [mm]	Screw Installation Pattern(2)	Safe Working Loads [kN]				Characteristic Capacities [kN]			
	Stud	Qty (X1214D325)			$R_{1,SWL} = R_{2,SWL}$	$R_{3,SWL}$	$R_{4,SWL}$	$R_{5,SWL} = R_{6,SWL}$	$R_{1,K} = R_{2,K}$	$R_{3,K}$	$R_{4,K}$	$R_{5,K} = R_{6,K}$
HYS12/68-KT25		4	1.2	F4	0.6	4.6	4.7	2.3	0.9	7.4	7.5	3.7
		6		F6	0.7	6.8	7.0	2.3	1.1	10.8	11.2	3.7
		4	1.6	F4	0.6	9.4	8.0	2.5	1.0	15.0	12.8	4.0
		6		F6	1.3	13.7	8.0	3.2	2.0	22.0	12.8	5.1
HYS15/68-KT25		4	1.2	F4	0.6	4.6	4.7	2.0	0.9	7.4	7.5	3.2
		6		F6	0.7	6.8	7.0	2.0	1.1	10.8	11.2	3.2
		4	1.6	F4	0.6	9.4	10.3	2.5	1.0	15.0	16.5	4.0
		6		F6	1.3	13.7	11.7	2.5	2.0	22.0	18.7	4.0

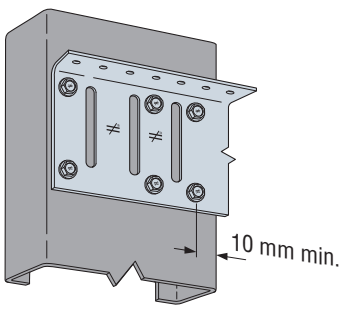
2. See illustrations below for fastener placement to stud framing.



Fixed Clip Installation



Fixed Clip Screw Pattern F4 HYS fixed to Stud with 4 No Screws



Fixed Clip Screw Pattern F6 HYS fixed to Stud with 4 No Screws

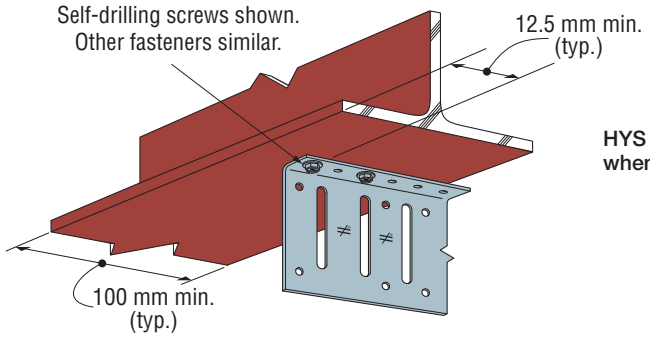
(No screws required in slots in fixed applications)

HYS Hybrid Strut

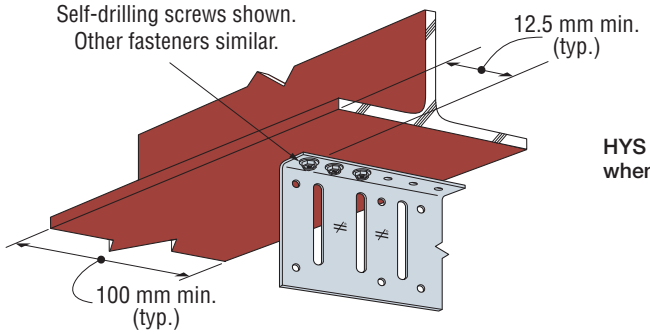
Performance Values - HYS to Steel Sections

References	Safe Working Loads [kN]		Characteristic Capacities [kN]	
Qty (X1224D540)	$R_{3,SWL} = R_{4,SWL}$	$R_{5,SWL} = R_{5,SWL}$	$R_{3,K} = R_{4,K}$	$R_{5,K} = R_{6,K}$
2	7.1	2.5	11.4	4.0
3	10.7	3.8	17.0	6.0
4	14.2	5.0	22.7	8.0

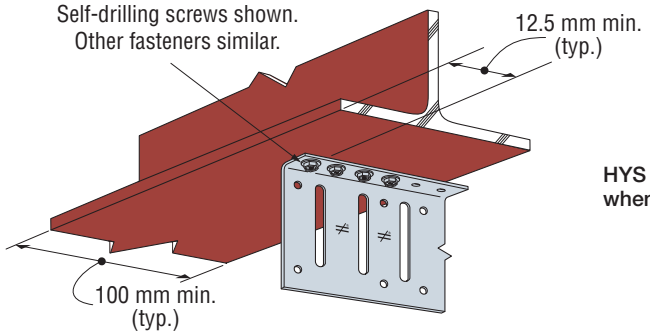
1. HYS Connector Loads are also limited by the RSJ Connection Loads. Use the minimum tabulated values from the connector and RSJ tables as applicable.
2. See illustrations below for fastener placement to stud framing.
3. Tabulated R1 and R2 loads are based on assembly tests with the load through the centerline of the stud.
4. Minimum stud width for fixed application is 150mm.
5. XLSH78B1414 shouldered screw is supplied with the connectors.



HYS Clip to RSJ Screw pattern when installed with 2 No screws.



HYS Clip to RSJ Screw pattern when installed with 3 No screws.

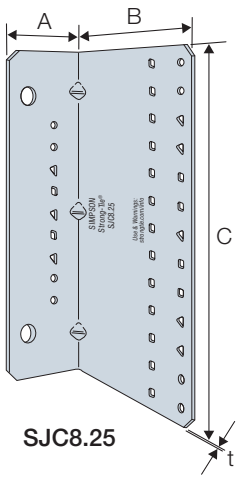


HYS Clip to RSJ Screw pattern when installed with 4 No screws.

Steel Joist Connectors

Contents

SJC Steel Joist Connector



SJC8.25

Steel Joist Connectors have been specifically designed for various LGS joist rafter applications. The unique clip dimensions enable easy installation on the open side of the joists and rafters with flanges and return lips.

Material: Galvanised Mild Steel: 275g/m²

Key Features:

- Pre-punched holes reduce installation cost by eliminating the need for pre-drilling
- Fastener hole positions ensure accurate connector installation to accommodate a wide range of design and application requirements, as well as providing installation flexibility
- Angle lengths accommodate attachments for joists with return lips of up to 20mm
- Leg length enables connections with joists with flanges up to 89mm

Installation: Use the specified number and type of fasteners (see performance table for fastener type, quantities and installation pattern).

Minimum & Maximum Fastener Patterns

1. For minimum fastener installation: Fill all round holes in outer row only
2. For maximum fastener installation: Fill all round and triangular holes in outer row only

Inner Fastener Pattern

1. Fill holes in the positions indicated in the illustrations below

Product Dimensions

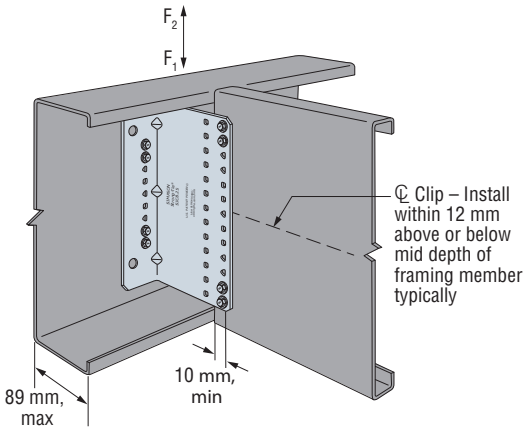
References	Hanger Dimensions [mm]					Holes						
						Flange A				Flange B		
	A	B	C	D	t	Ø4.8	Ø11.1	4.3 Tri	4.3 SQ	Ø4.8	4.3 Tri	4.3 SQ
SJC8.25	56	114	210	-	2.0	4	2	3	2	4	5	17

Performance Values

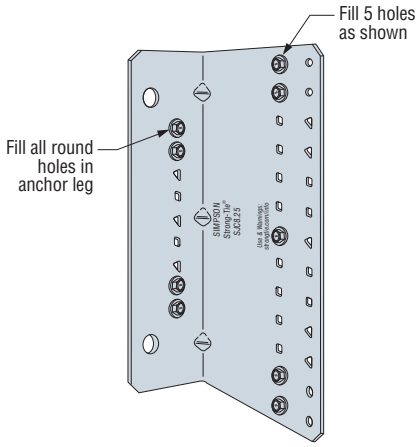
References	Fasteners				Safe Working Loads [kN]		Characteristic Capacities [kN]	
	Pattern	Flange A		Flange B	Member Thickness [mm]		Member Thickness [mm]	
		LGS Stud or Joist	Min 5.0mm Steel Section	Stud	1.6	2.0	1.6	2.0
		Qty (X1214D325)	Qty (X1224D540)	Qty (X1214D325)	$R_{1,SWL} = R_{2,SWL}$		$R_1 = R_{2,k}$	
SJC8.25	Min	4	4	4	4.4	4.4	7.0	7.0
	Max	7	7	9	4.5	6.6	7.2	10.6
	Inner	4	4	5	6.0	8.9	9.6	14.3

1. Performance values are based upon tests completed by Simpson Strong-Tie U.S. in accordance to ICC-ES AC261 - Acceptance criteria for connectors used with Cold-Formed Steel Structural Members
2. Min. fastener quantity and load values — fill all round holes; Max. fastener quantity and load values — fill all round and triangular holes; Inner fastener quantity and load values — see illustrations for fastener placement.
3. Loads are based on bracing of the members located within 300mm of the connection.

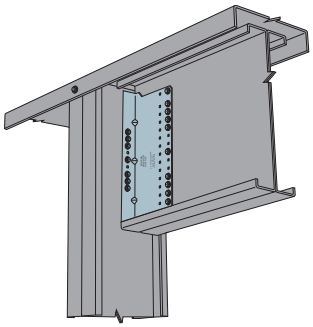
SJC Steel Joist Connector



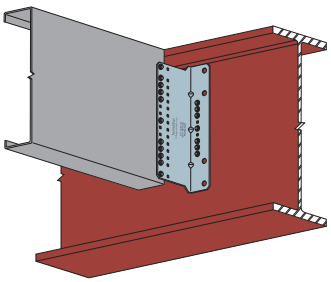
SJC8.25
Installation with Min. Screw Pattern (screw in round holes) For max. screw pattern, fill all round and triangle holes. Min./Max. patterns have screws only in outer row.



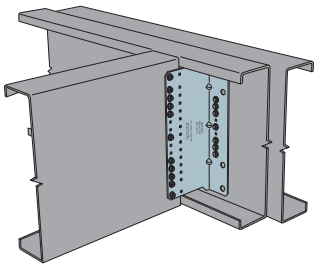
SJC8.25
Inner Fastener Pattern



SJC -
Header to Jam Installation



SJC -
Joist to RSJ Installation

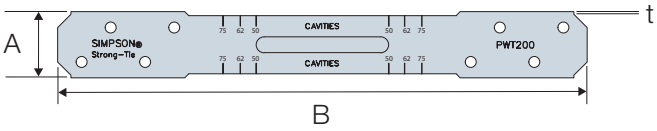


SJC -
Joist to Girder Installation

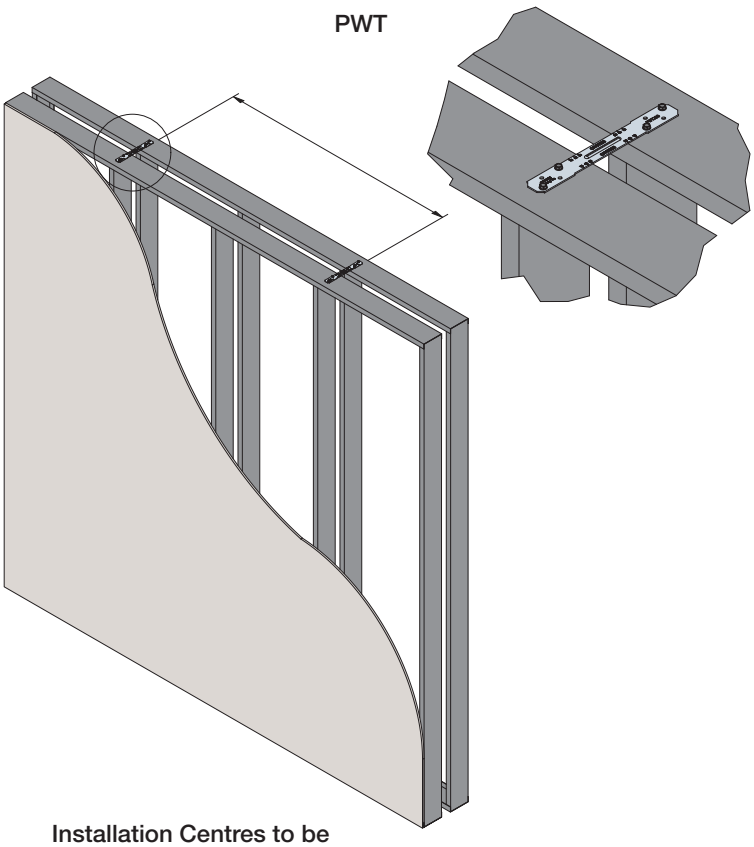
Party Wall Tie

Contents

PWT Party Wall Tie



PWT



Installation Centres to be specified by structural engineer.

The Party Wall Tie connects party walls whilst resisting the passage of sound to meet the requirements of Part E of the building regulations.

Material: Galvanised Mild Steel: 275g/m^2

Installation: Use the specified number of fasteners (see performance table for fastener type, 25mm tek screws).

Key Features:

- Meets the requirements of Part E of the Building Regulations (Resistance to the Passage of Sound)
- Suits frames with cavity from 50mm to 75mm
- Can be used on closed panel construction - where 50mm stiffening rib helps to check the minimum 50mm cavity width has been achieved
- Minimum material cross-section for optimum sound performance

X1214D325 RECOMMENDED FIXINGS

Product Dimensions

References	Dimensions [mm]			Holes
	A	B	t	Ø4.1
PWT200	25	200	1.5	8

Performance Values

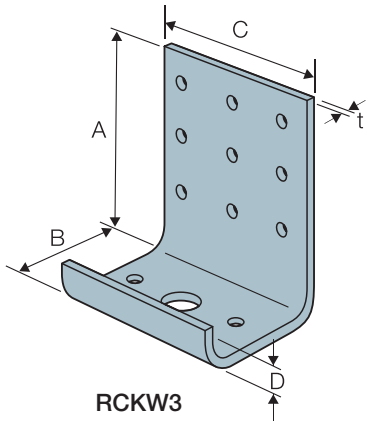
References	Fasteners	Safe Working Loads [kN]		Characteristic Capacities [kN]	
		Member Thickness [mm]		Member Thickness [mm]	
		1.6	2.0	1.6	2.0
	Qty (X1214D325)	$R_{1,SWL} = R_{2,SWL}$		$R_{1,K} = R_{2,K}$	
PWT200	2 + 2	1.1	1.1	1.8	1.8

1. An even number of fasteners are to be installed into either end of the PWT.

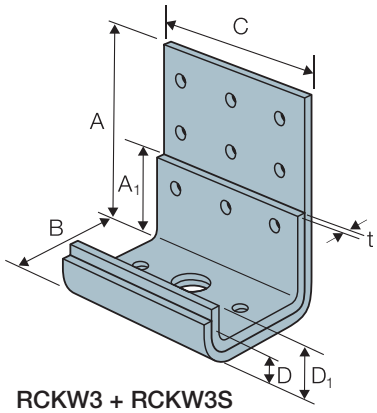
Parapet Wall Brackets

Contents

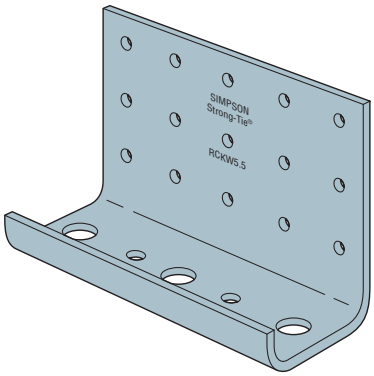
RCKW Parapet Wall Bracket



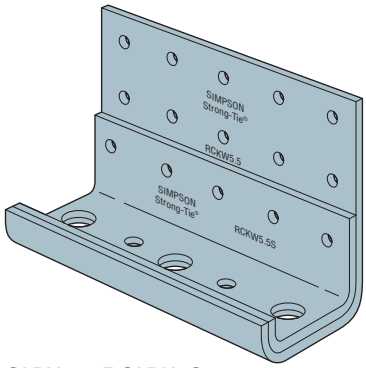
RCKW3



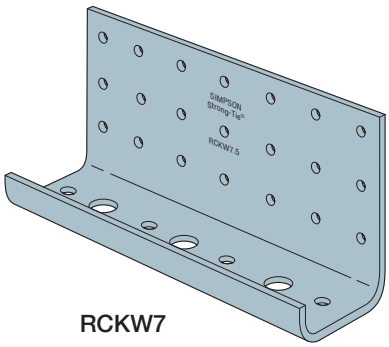
RCKW3 + RCKW3S



RCKW5



RCKW5 + RCKW5S



RCKW7

The RCKW is a 1 or 2 part connector designed to resist an over-turning moment at the base of exterior knee-walls and parapets as well as interior partial height walls. These connectors offer a unique large and small anchorage hole pattern that permits anchorage into both hot rolled steel and concrete.

If more rigidity is required, a stiffener (the RCKWS) can be added to nest into the RCKW clip; the screw and anchor holes line up making installation simple, with no need for pre-drilling. The RCKW and the RCKWS are sold separately.

Material: Galvanised Mild Steel: 275g/m^2

Installation: Use the specified number of fasteners (see performance table for fastener type).

When using the RCKWS, secure the stiffener to the clip with the specified screw fasteners.

Use all specified anchors to achieve tabulated performance values, the installation torque must be as published in the performance table, or the torque requirements of the anchor, whichever is greater.

When using the larger diameter anchor holes, the bottom track must be pre-drilled or punched with an M20 hole.

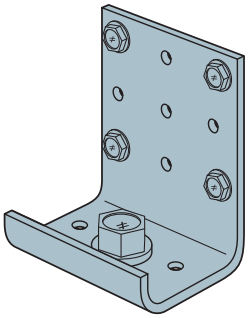
Key Features:

- Anchorage legs incorporate stiffened flanges, improving over-turning moment resistance
- Large diameter anchor holes accommodate 12mm diameter fixings e.g (LMAS stud with ATHP resin)
- The 3 additional large holes (RCKW5.5 and RCKW7.5 only) are for added versatility. The central hole is for a one-anchor solution. The 2 outer holes are for a two anchor solution that requires a higher capacity at the centre of the slab
- Additional smaller diameter anchor holes allow for the attachment to hot rolled steel with X1224D540 self-drilling screws

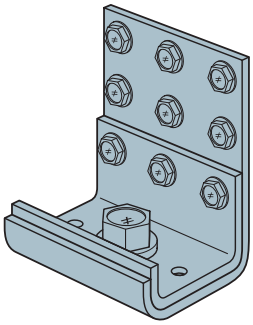
Product Dimensions

References	Hanger Dimensions [mm]							Holes					
								Flange A		Flange B			
	A	A_1	B	C	D	D_1	t	Ø4.8	Ø5.5	Ø6.7	Ø7.5	Ø14.3	Ø15.9
RCKW3	90	-	66	75	22	-	4.7	9	-	2	-	1	-
RCKW5.5	90	-	66	140	22	-	4.7	15	-	4	-	3	-
RCKW7.5	90	-	66	190	22	-	4.7	21	-	6	-	3	-
RCKW3S	-	38	56	75	-	19	4.7	-	3	-	2	-	1
RCKW5.5S	-	38	56	140	-	19	4.7	-	5	-	4	-	3

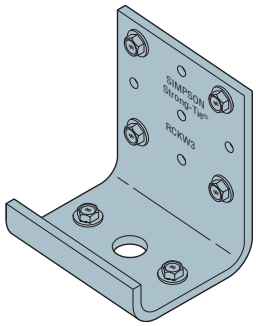
RCKW Parapet Wall Bracket



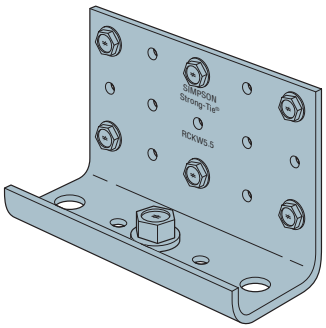
RCKW3 Fastener Pattern 1
- Concrete Application



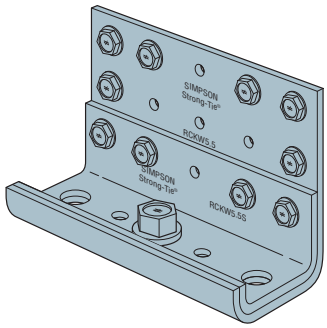
RCKW3 with RCKW
Fastener Pattern 2
- Concrete Application



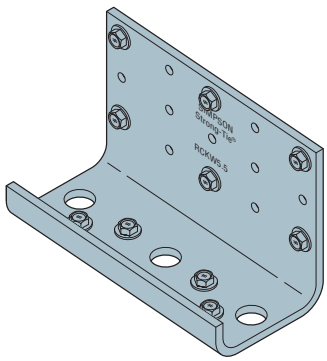
RCKW3 Fastener Pattern 7
- Structural Steel
Application



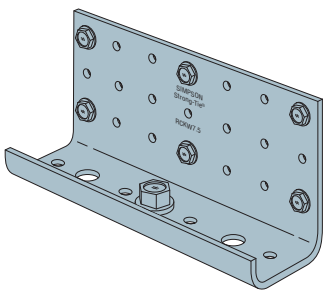
RCKW5.5 Fastener Pattern 3
- Concrete Application



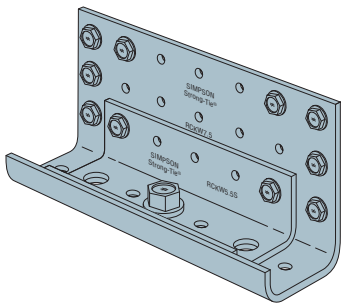
RCKW5.5 with RCKW5.5S
Fastener Pattern 4
- Concrete Application



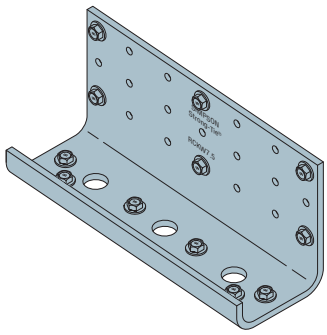
RCKWS Fastener Pattern 8
- Structural Steel
Application



RCKW7.5 Fastener Pattern 5
- Concrete Application



RCKW7.5 with RCKW5.5S
Fastener Pattern 6
- Concrete Application



RCKW7 Fastener Pattern 9
- Structural Steel
Application

RCKW Parapet Wall Bracket

Performance Values

References	Fasteners			Member Thickness [mm]	Minimum Framing Member Depth [mm]	Screw Installation Pattern	Assemby Rotational Stiffness ß [Nm/Rad]	Connector Rotational Stiffness $ß_c$ [Nm/Rad]
	Flange A Stud	Flange B Concrete	Flange B Structural Steel					
	Qty (X1214D325)	Qty (M12 LMAS)	Qty (X1224D540)					
Performance Values: Concrete Applications								
RCKW3	4	1	-	1.2	90	1	12767	12993
RCKW3				1.6			14462	15479
RCKW3+RCKW3S	9	1	-	1.2	90	2	18530	19772
RCKW3+RCKW3S				1.6			18530	19772
RCKW5.5	6	1	-	1.2	150	3	36155	38189
RCKW5.5				1.6			36155	38189
RCKW5.5+RCKW5.5S	10	1	-	1.2	150	4	50843	55363
RCKW5.5+RCKW5.5S				1.6			52764	56718
RCKW7.5	6	1	-	1.2	200	5	57622	60560
RCKW7.5				1.6			62594	64514
RCKW7.5+RCKW5.5S	10	1	-	1.2	200	6	66774	70390
RCKW7.5+RCKW5.5S				1.6			77847	81349
Performance Values: Structural Steel Applications								
RCKW3	4	-	2	1.2	90	7	8281	8666
RCKW3				1.6			9859	10304
RCKW5.5	6	-	4	1.2	150	8	30798	32436
RCKW5.5				1.6			28911	30064
RCKW7.5	6	-	6	1.2	200	9	64579	68194
RCKW7.5				1.6			78362	82656

1. Tabulated values are based on framing members with track and stud of the same thickness and (1) Ø5.5mm Framing Screw into each stud flange unless otherwise noted.
2. Tabulated moment values correspond to connector strength without consideration of serviceability. Designer must check out-of-plane deflections using tabulated Rotational Stiffness.
3. Tabulated Assembly Rotational Stiffness is applicable for walls at 950mm tall with corresponding framing member depth and thickness.
4. Tabulated Connector Rotational Stiffness may be used for any wall heights; the designer must consider member deflection due to bending in the stud member.
5. Anchor tension, T, is the force in the anchor, at tabulated momement, M, or tension, F2, values.
6. The designer is responsible for anchor design / specification.
7. The designer is responsible for structural steel design.
8. Anchor tension values may be interpolated.
9. See illustrations for fastener pattern placement.

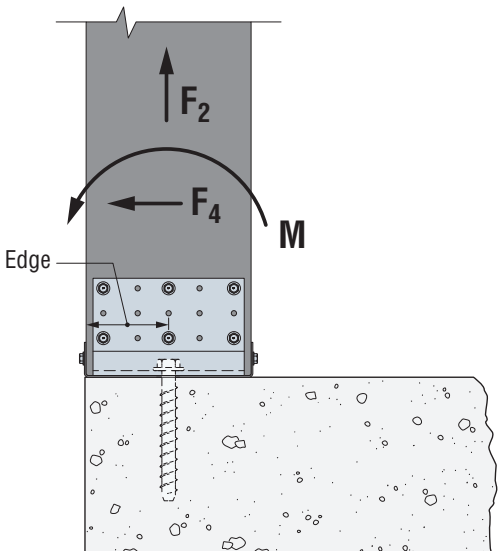
Assembly test with member failure

Typical RCKW Installation

RCKW Parapet Wall Bracket

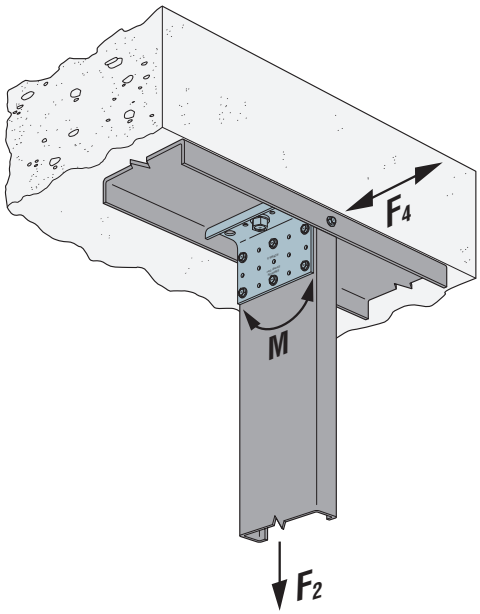
Performance Values

References	Safe Working Loads [kN]							Characteristic Capacities [kN]						
	Moment $M_{R,SWL}$ [Nm]	Anchor Tension at M_R Capacity		Tension $R_{2,SWL}$	Anchor Tension at R_2 Capacity		Shear $R_{4,SWL}$	Moment $M_{R,K}$ [Nm]	Anchor Tension at M_R Capacity		Tension $R_{2,K}$	Anchor Tension at R2 Capacity		Shear $R_{4,K}$
		Concrete C20/25	Concrete C30/35		Concrete C20/25	Concrete C30/35			Concrete C20/25	Concrete C30/35		Concrete C20/25	Concrete C30/35	
Performance Values: Concrete Applications														
RCKW3	348	11.2	10.5	5.6	7.3	7.1	3.4	473	14.5	13.9	7.6	9.7	9.4	4.6
RCKW3	489	18.3	16.0	8.2	11.8	11.0	5.0	720	25.4	22.8	12.1	16.9	15.9	7.3
RCKW3+RCKW3S	476	17.5	15.4	11.5	19.6	16.7	3.5	648	21.8	20.0	15.7	23.9	21.7	4.8
RCKW3+RCKW3S	583	29.8	20.4	15.3	27.3	25.9	5.0	908	39.6	31.2	22.5	40.2	35.5	7.3
RCKW5.5	706	11.2	10.9	4.7	5.8	5.7	4.6	960	15.0	14.6	6.5	7.8	7.7	6.3
RCKW5.5	929	15.4	14.8	10.9	14.5	13.9	6.2	1369	22.3	21.5	16.1	21.0	20.2	9.1
RCKW5.5+RCKW5.5S	954	15.9	15.2	11.4	15.3	14.6	4.6	1299	21.0	20.3	15.5	20.2	19.5	6.3
RCKW5.5+RCKW5.5S	1308	23.8	21.9	16.9	25.2	23.1	6.2	1917	33.7	31.5	24.9	35.8	33.4	9.1
RCKW7.5	926	10.4	10.2	5.7	6.9	6.8	5.3	1261	14.0	13.8	7.3	8.7	8.6	7.3
RCKW7.5	1288	15.0	14.6	9.6	12.1	11.8	7.5	1896	21.8	21.3	13.3	16.4	16.1	11.1
RCKW7.5+RCKW5.5S	1233	14.3	13.9	10.0	12.6	12.3	5.3	1678	19.1	18.7	14.8	18.5	18.1	7.3
RCKW7.5+RCKW5.5S	1587	19.0	18.3	11.7	14.9	14.5	7.5	2336	27.6	26.7	25.3	33.8	32.4	11.1
Performance Values: Structural Steel Applications														
RCKW3	290	-	-	5.4	-	-	3.3	395	-	-	7.4	-	-	4.5
RCKW3	304	-	-	6.2	-	-	5.0	447	-	-	9.1	-	-	7.3
RCKW5.5	720	-	-	8.5	-	-	4.7	979	-	-	11.5	-	-	6.4
RCKW5.5	726	-	-	8.9	-	-	5.8	1070	-	-	13.1	-	-	8.5
RCKW7.5	1084	-	-	8.7	-	-	5.0	1476	-	-	11.8	-	-	6.9
RCKW7.5	1279	-	-	9.7	-	-	7.6	1883	-	-	14.3	-	-	11.2

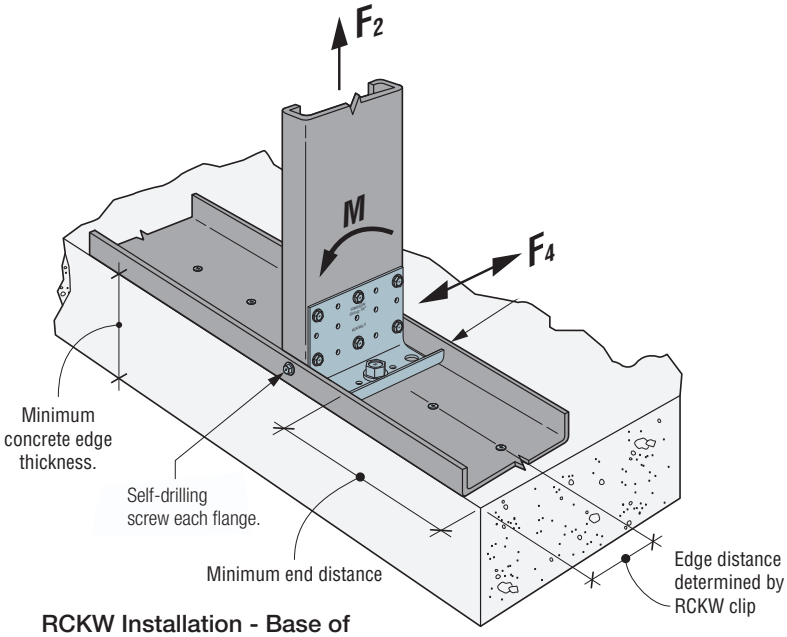


Single Anchor - Shear and Tension
(Tension from moment created from P_L)

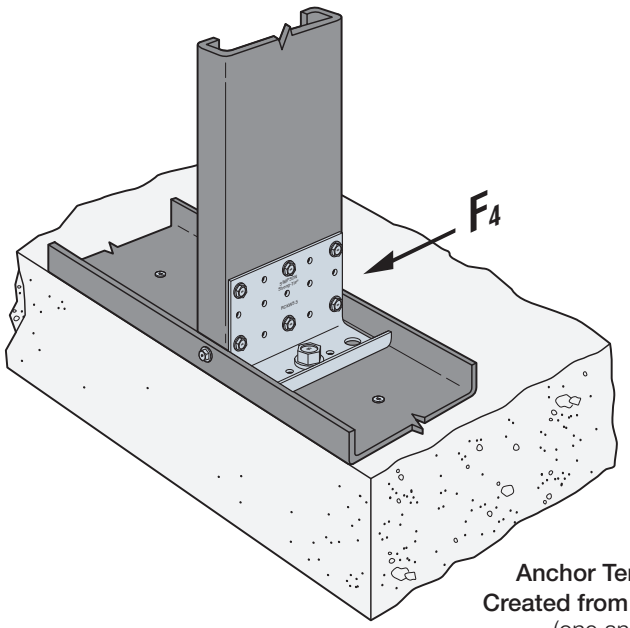
RCKW Parapet Wall Bracket



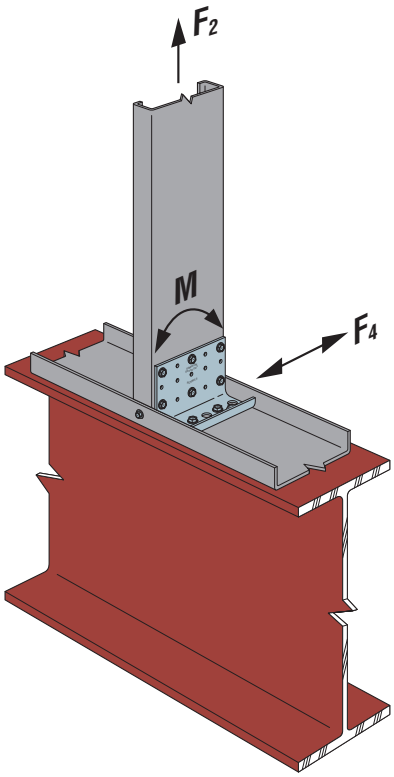
RCKW Installation - Top of Stud onto Concrete



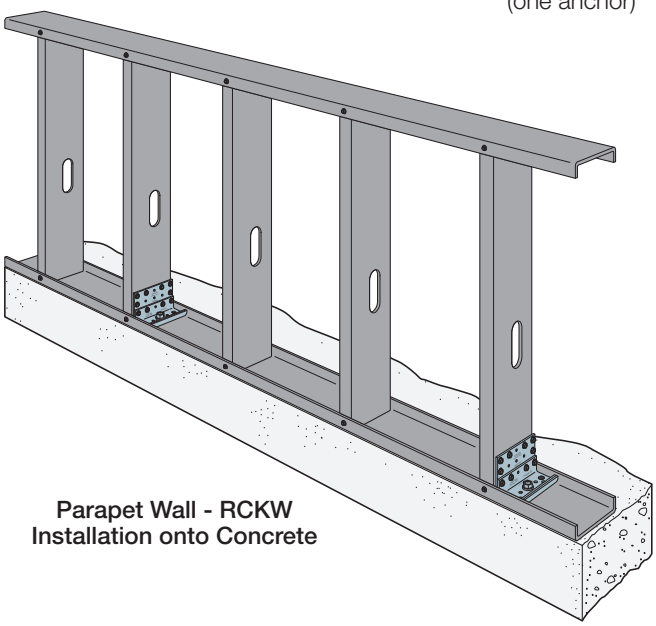
RCKW Installation - Base of Stud onto Concrete



Anchor Tension, T, Created from Movement
(one anchor)



RCKW Installation onto Structural Steel



Parapet Wall - RCKW Installation onto Concrete

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