# STRUCTURAL CONNECTOR & FASTENER SOLUTIONS

## for CLT & Engineered Wood Products

SIMPSON Strong-Tie®

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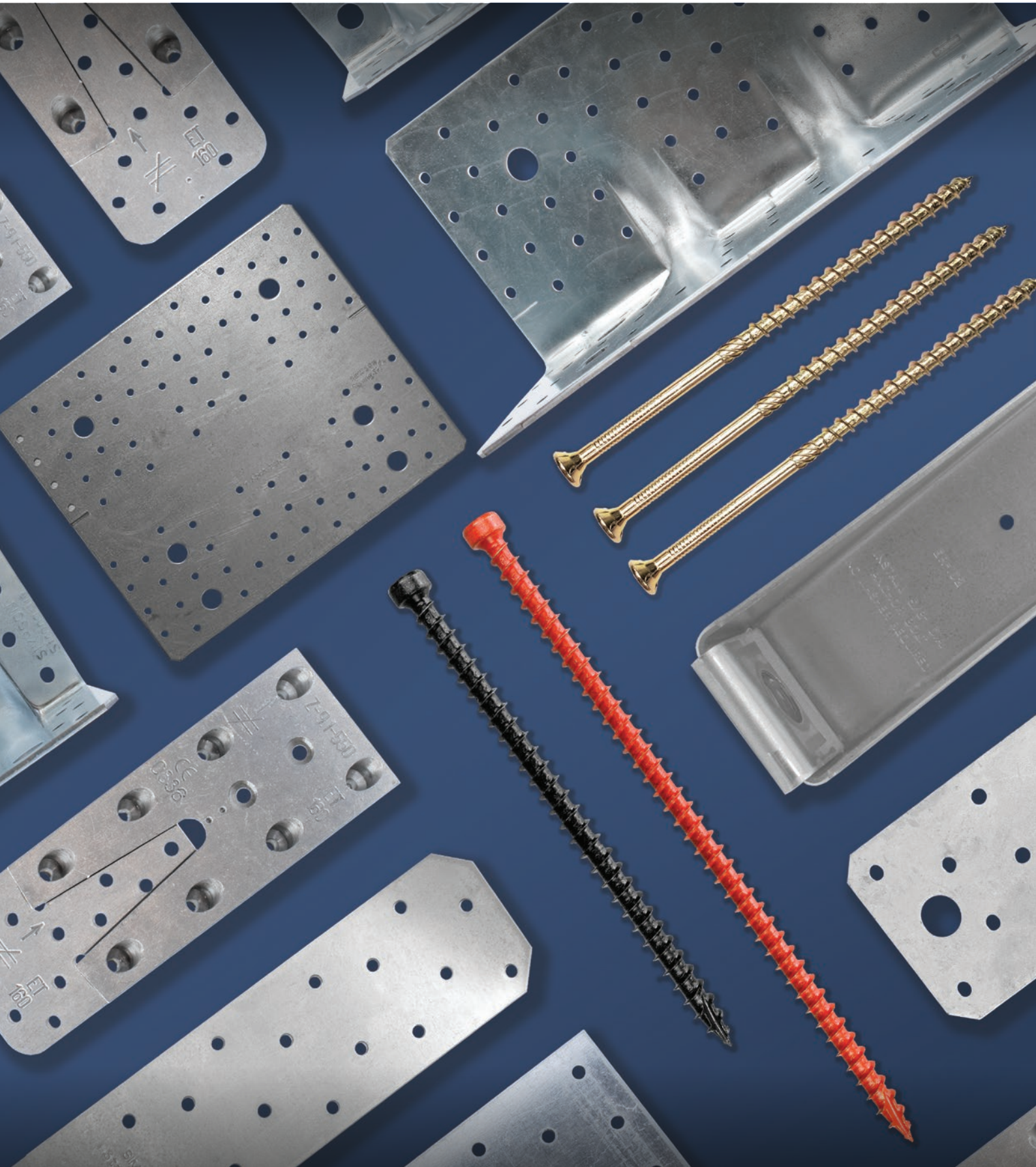



## Guaranteed Performance

The fact that we extensively test our connectors gives you the reassurance that they will perform in the toughest conditions. Our products are compliant with the latest European requirements for construction products, and suitable for use with NZ sawn timbers, CLT, LVL, and other Engineered Wood Products designed by specific engineering design and NZS3604:2011 applications.

The quality and variety of our product lines gives engineers and builders more freedom to design flexibly, while offering reliable and proven performance. In addition, customers can count on our technical support, and a team of experienced field representatives.

The characteristic values published within this document have been determined from test values in accordance with BS EN 14358 for use with Limit State Design methods. Corresponding deflection limits are published, where appropriate, which indicates the amount of slip in the connection when the stated characteristic load is applied.

### What are our connectors made from?

Unless otherwise stated the connectors listed in this document are manufactured from S250GD carbon steel with a pre-galvanised coating of 275g/m$^2$, in accordance with BS EN 10346.

# Product Index

## GENERAL INFORMATION



## CONNECTORS



## FASTENERS





For a full range of connectors to suit beams, joists, rafters or similar structural members - refer to our timber connector catalogue.

# About Simpson Strong-Tie®

## 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® products and services.

Karen Colonias
Chief Executive Officer

## Environmental, Health And Safety Policy

Simpson Strong-Tie® continues to look for ways to build safer and stronger structures while being mindful of how we can help protect the environment and the health and safety of our employees. We are committed to environmental management, including health, safety and ecological protection.

Simpson Strong-Tie® is accredited to the internationally recognised standards for environmental health & safety management systems.

## Testing Laboratory Accreditation

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

The fact that we extensively test our connectors gives you the reassurance that they will perform in the toughest conditions. We strive to ensure that our products are compliant with the latest European requirements for construction products.


# Introduction to Cross-Laminated Timber

Cross-Laminated Timber (CLT) is growing in popularity as a sustainable and beautiful construction material. Practical too, CLT can be used for walls, floors and ceilings and is well suited to offsite assembly.

CLT has various benefits making it an attractive building material. These benefits include:

Design flexibility - CLT has many applications. It can be used in walls, roofs or ceilings. The thickness of the panels can easily be increased by adding more layers and the length of the panels can be increased by joining panels together.

Prefabrication - floors or walls made from CLT can be fully manufactured before reaching the construction site, which decreases lead times and could potentially lower overall construction costs.

Engineers and Architects are now favouring CLT for its elegance, sustainability and its cosmetic appearance.

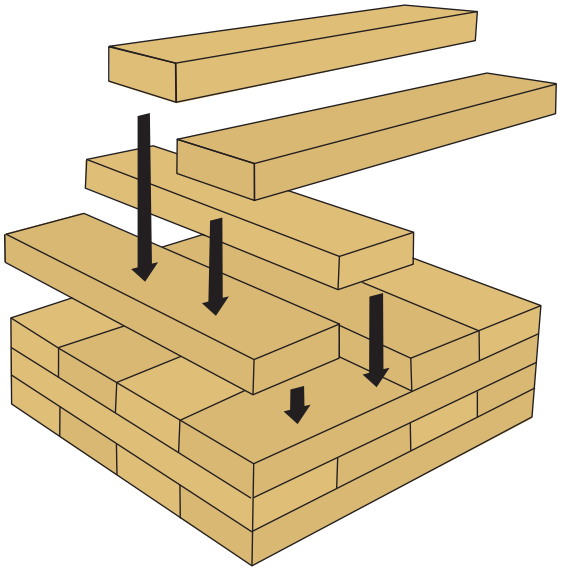
## CLT Panel Manufacture

This is a highly involved and technical process.

Timber lengths are prepared and cut to suit the application and project requirements.

Adhesive is applied to the timber, and it is then arranged in perpendicular layers

Hydraulic pressing is used for panels where higher pressures or specific pressure values at the panel edges are required. Otherwise vacuum pressing is employed to assemble the panels as this allows several panels to be pressed simultaneously. This method also allows pressure to be applied to curved panels.



CLT is fabricated by using glue to connect layers of solid sawn timber together. Each layer of boards is orientated perpendicular to the adjacent layer, which is glued on the wide face.

*Stadthaus, Murray Grove. Image courtesy of KLH UK.*

# Corrosion Information

## Understanding The Corrosion Issue

Many environments and materials can cause corrosion, including ocean salt air, fire retardants, fumes, fertilizers, preservative-treated wood, de-icing salts, dissimilar metals and more. Metal connectors, fasteners and anchors could corrode and lose load-carrying capacity when installed in corrosive environments or when installed in contact with corrosive materials.

The many variables present in a building environment make it impossible to accurately predict if, or when, corrosion will begin or reach a critical level. This relative uncertainty makes it crucial that specifiers and users are knowledgeable of the potential risks and select a product suitable for the intended use. It is also prudent that regular maintenance and periodic inspections are performed, especially for outdoor applications.

It is common to see some corrosion in outdoor applications. Even stainless steel can corrode. The presence of some kinds of corrosion, e.g. white rust on zinc, does not mean that load capacity has been affected or that failure is imminent. If significant corrosion, e.g. red rust, is apparent or suspected, then a qualified engineer or inspector should inspect the framing members, fasteners and connectors. Replacement or cleansing of affected components may be appropriate. Red rust corrosion of steels will mostly carry on increasing and will cause major damage at an advanced stage.

Due to the many different chemical treatment formulations, chemical retention levels, moisture conditions and formulation variants, selection of coatings has become a complex task. It is important to fully educate yourself by reviewing information, literature and evaluation reports, and to select the fastener coating so that it fits with the connector coating to avoid decreased performance of the connection.

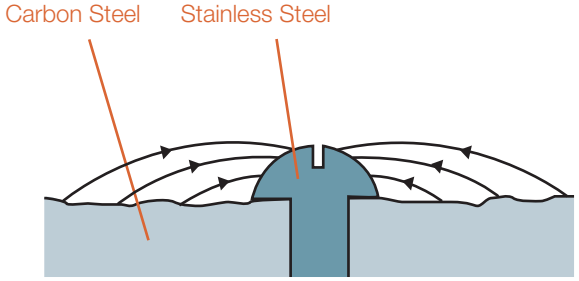
## Galvanic corrosion

Galvanic corrosion (also known as bimetallic corrosion, dissimilar metal corrosion or contact corrosion) may occur when dissimilar metals (e.g. galvanised mild steel and stainless steel) are in contact in a corrosive electrolyte (e.g. water containing salt, acid, etc.). When a galvanic couple forms, one of the metals in the couple becomes the anode and corrodes faster than it would all by itself, while the other becomes the cathode and corrodes slower than it would alone. For galvanic corrosion to occur, three conditions must be present:

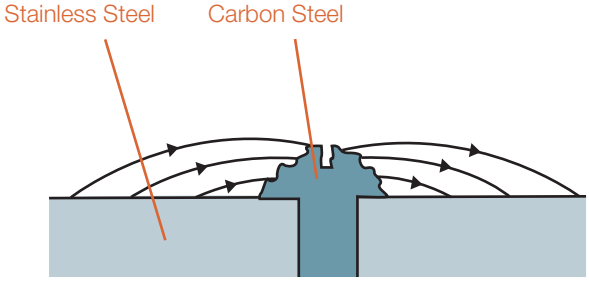
1. Electrochemically dissimilar metals must be present,
2. These metals must be in electrical contact,
3. The metals must be exposed to an electrolyte.

The relative nobility of a material can be predicted by measuring its corrosion potential. The well-known galvanic series, (see right) lists the relative nobility of certain materials in seawater. A small anode/cathode area ratio is highly undesirable. In this case, the galvanic current is concentrated onto a small anodic area. Rapid thickness loss of the dissolving anode tends to occur under these conditions. Adverse area ratios are likely to occur with fasteners at joints. Carbon steel fasteners used with stainless steel connectors should be avoided because the ratio of the area between the stainless steel to carbon steel is small and the fasteners will be subject to aggressive attack, thus greater corrosion. Conversely, the rate of attack of a carbon steel connector secured by a stainless steel fastener is much slower.

| Corroded end (Anode) |
|---|
| Magnesium, Magnesium alloys and Zinc |
| Aluminium, Cadium, Iron and Steel |
| Lead, Tin, Nickel and Ni-Cr alloy |
| Brasses, Copper and Cu-Ni alloys |
| Nickel |
| Stainless steels |
| Protected end (Cathode) |




Large Anode (Carbon Steel) area, small Cathode (stainless steel fastener) area showing no attack on the fasteners and relatively insignificant attack of carbon steel.




Large Cathode (Stainless Steel) area, small Anode (carbon steel fastener) area showing no attack on the stainless steel and relatively increased attack of the fastener.

# HTT/DTT Hold Down

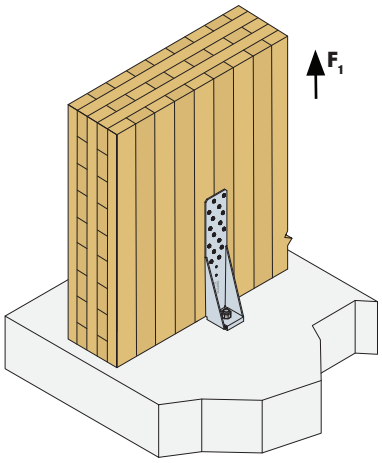
Ideal for existing or new construction, HTT and DTT hold downs provide a high strength timber to concrete, or timber to timber tension connection.

The long vertical legs on the HTT range makes it possible to add the required number of fasteners nails or screws in a vertical post and still comply to relevant standards with regards to fastener spacing requirements.

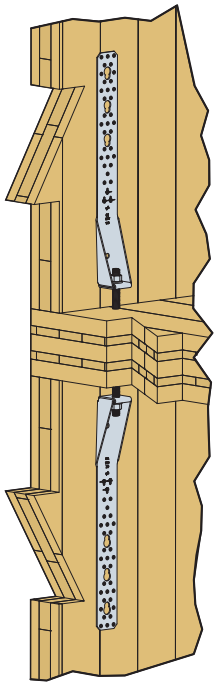
The unique design of the HTT - a multi-ply seat formed from a single piece of steel - gives the tension tie extra strength at the concrete anchorage point. Timber structures that are subjected to uplift forces can be connected to a concrete support with the HTT hold down.

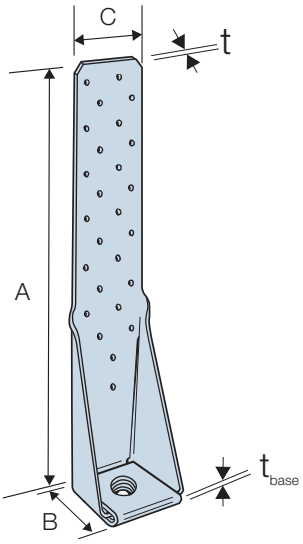
**Material:** Pre-galvanised mild steel.

HDU8-SDS2.5 HTT5 HTT4 DTT2Z




It must be checked, that the anchor fulfils the following formula: $\frac{F_{1,d}}{R_{anchor,d}} \leq 1$



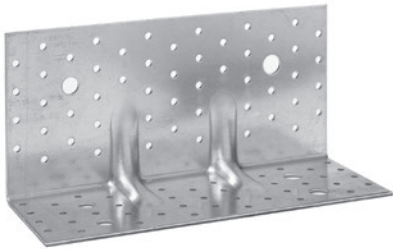


# ABR255 Hold Down Bracket

The ABR255 is a hold down bracket designed for fixing CLT panels to concrete / timber floors and parapet walls. Very versatile, it is particularly resistant to shear loads thanks to its optimized geometry.

**Material:** Pre-galvanised mild steel.

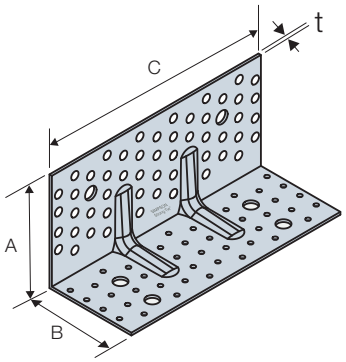
- One-piece connector.
- 255mm wide with 120 and 100mm length legs.
- Reinforcing ribs provide enhanced performance.
- High performance for horizontal ($F_2$ / $F_3$) and vertical ($F_1$) loads directions.

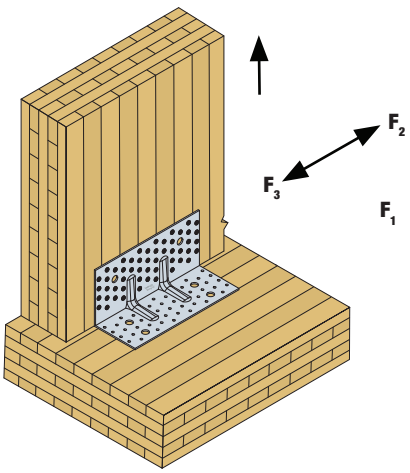


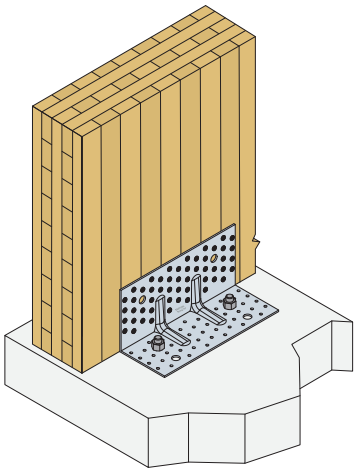
ABR255

## Product Dimensions: ABR255

| Model No. | Dimensions [mm] | | | | Qty Holes Flange A | | Qty Holes Flange B | |
|---|---|---|---|---|---|---|---|---|
| | A | B | C | t | Ø5 | Ø14 | Ø5 | Ø14 |
| ABR255 | 120 | 100 | 255 | 3 | 52 | 2 | 41 | 4 |



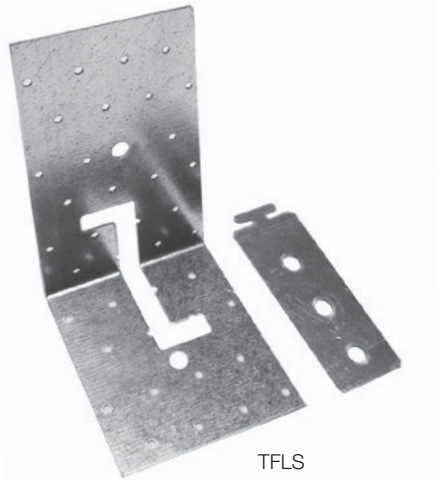



# TFLS Timber Frame Levelling System

TFLS provides the combined function of levelling and fixing the sole plate to the foundation or substructure. It comprises a universal base plate and packing pieces which can be added or removed as required. The system can be designed to transfer vertical and lateral loads from the wall to the foundation.

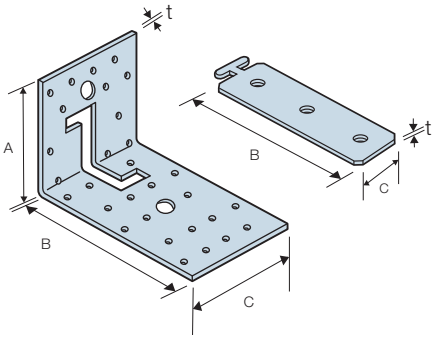
**Material:** Pre-galvanised mild steel.

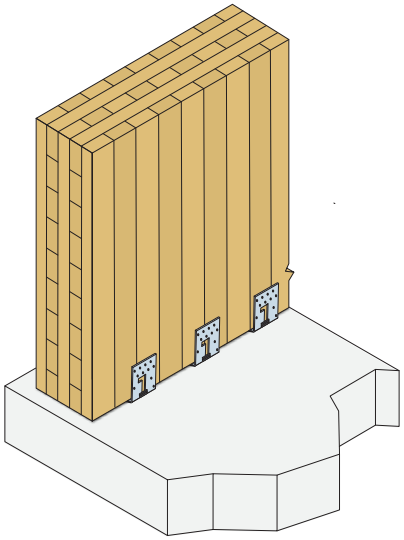

TFLS

- Adaptable - accommodates structural packing up to 30mm deep.
- Universal - suitable for walls of 89mm and 140mm construction.
- Flexible - packing pieces can easily be added or removed from the base plate to achieve the required depth.
- Multiple holes in bracket offer a variety of fixing options.
- The TFLS is laid on top of the DPC.
- If the TFLS bracket and/or packers are installed at every load point then it is not necessary to fill the void between the underside of the sole plate and the foundation with structural grout (filling of void may be required to satisfy other requirements.)

## Product Dimensions: TFLS

| Model No. | Dimensions [mm] | | | | Qty Holes Flange A | | Qty Holes Flange B | |
|---|---|---|---|---|---|---|---|---|
| | A | B | C | t | Ø3 | Ø8 | Ø3 | Ø8 |
| TFLS | 89 | 140 | 83 | 1.0 | 10 | 1 | 19 | 1 |
| TFLSPK89 | - | 89 | 39 | 2.0 | - | - | - | 2 |
| TFLSPK140 | - | 140 | 39 | 2.0 | - | - | - | 3 |



# ABR Reinforced Angle Brackets

The ABR9020 and ABR10525 reinforced angle brackets are designed for fixing CLT panels to timber floors and parapet walls. Reinforcing ribs provide enhanced performance.

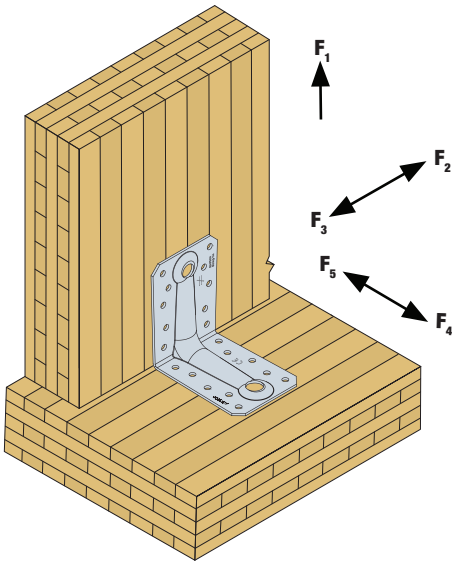
**Material:** Pre-galvanised mild steel.

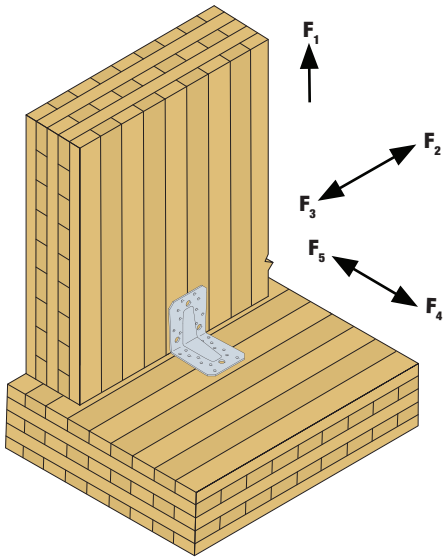
ABR9020

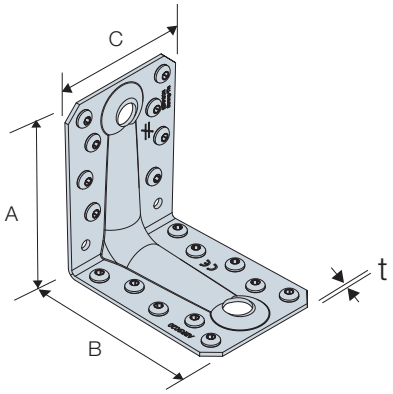
ABR10525

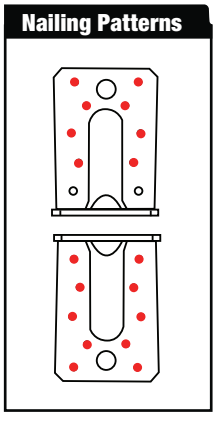
## Product Dimensions: ABR9020 / ABR10525

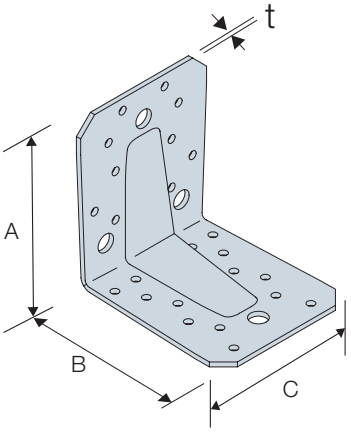
| Model No. | Dimensions [mm] | | | | Qty Holes Flange A | | | Qty Holes Flange B | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | t | Ø5 | Ø11 | Ø13 | Ø5 | Ø11 | Ø13 |
| ABR9020 | 88 | 88 | 65 | 2.0 | 10 | - | 1 | 10 | 1 | - |
| ABR10525 | 105 | 105 | 90 | 2.5 | 10 | 2 | 1 | 14 | - | 1 |

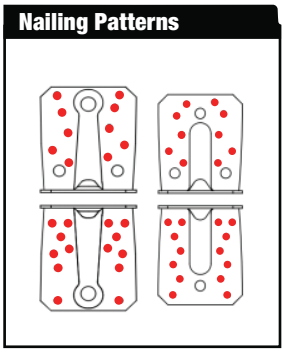


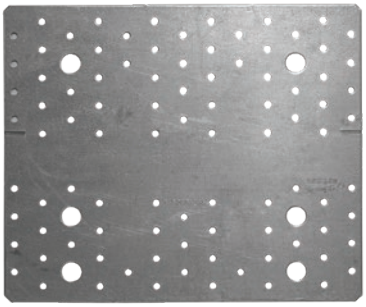



# NPB Nail Plate for Butt Joints with CLT

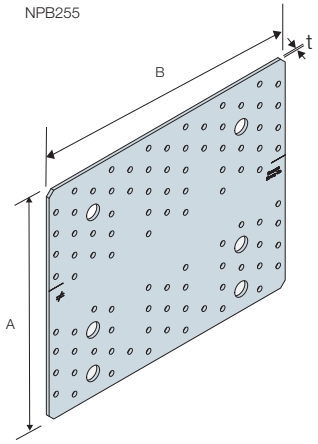
NPB255 nail plate has been developed specifically to fix CLT panels to timber or concrete.

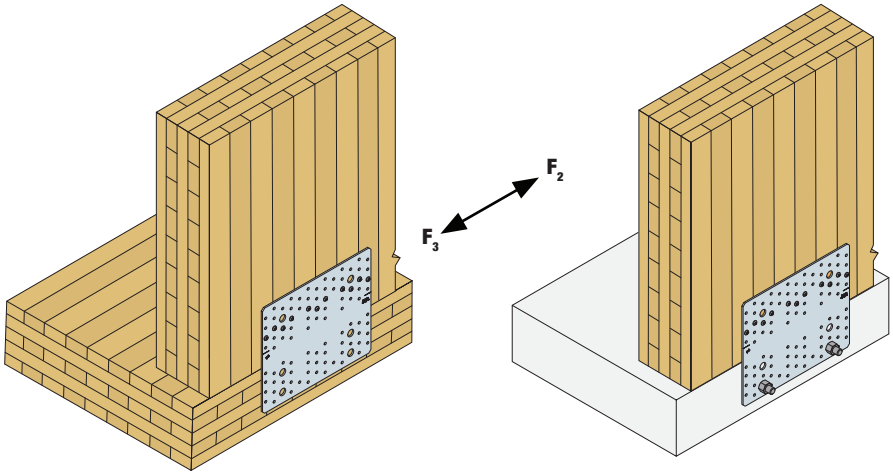
**Material:** Pre-galvanised mild steel.

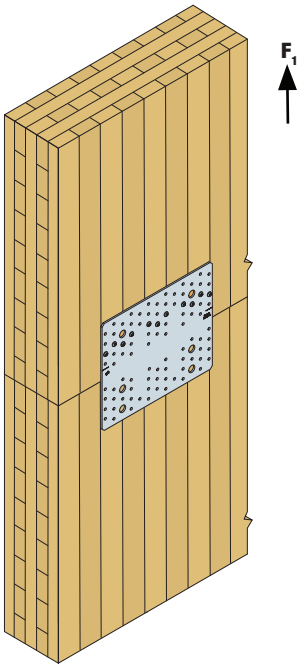


## Product Dimensions: NPB

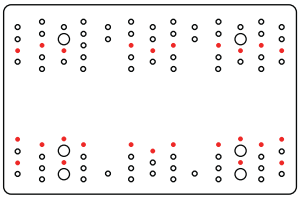
| Model No. | Dimensions [mm] | | | Qty Holes Upper | | Qty Holes Lower | |
|---|---|---|---|---|---|---|---|
| | A | B | t | Ø5 | Ø1 | Ø5 | Ø14 |
| NPB255 | 214 | 255 | 3.0 | 52 | 2 | 41 | 4 |



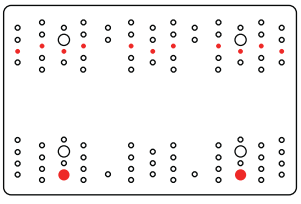




### Fixing Patterns



Fixing Patterns to Wood



Fixing Patterns to Concrete

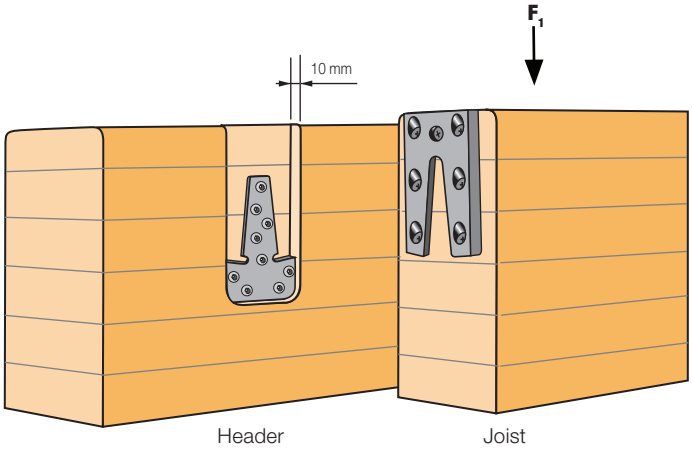
# ETB Concealed Beam Hanger

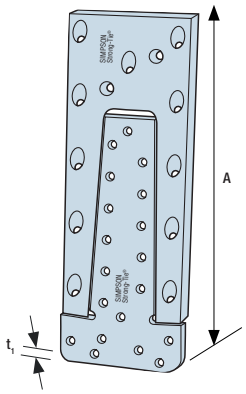
For a concealed connection, the ETB concealed connector comes in two parts. The first is pocketed in the header timber and fixed with nails, while the second part is fitted to the end of the beam with screws. No slots or dowel holes need to be made, speeding up installation time on site.

**Material:** Joist plate: 10mm aluminium. Header plate: 6mm aluminium

**Order nails and screws separately.**

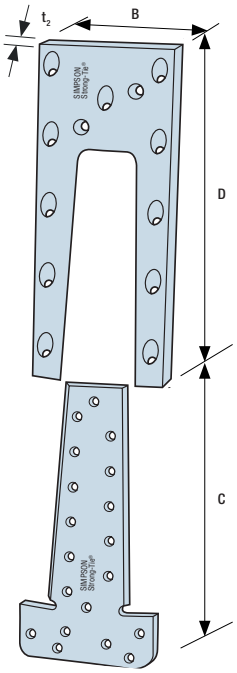
ETB160-B




## Product Dimensions: ETB

| Model No. | Joist Size [mm] | | | Connector Dimensions [mm] | | | | | | Header Holes | Joist Holes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Width | Height | | A | B | C | D | $t_1$ | $t_2$ | Ø5 | Ø5.4 |
| | Min | Min | Max | | | | | | | | |
| ETB120-B | 70 | 150 | 200 | 121 | 60 | 85 | 95 | 6 | 10 | 9 | 6 |
| ETB160-B | 70 | 185 | 250 | 166 | 60 | 95 | 130 | 6 | 10 | 11 | 8 |
| ETB190-B | 90 | 220 | 300 | 195 | 75 | 138 | 165 | 6 | 10 | 19 | 11 |



*William Perkin High School the largest cross laminated timber construction project in the UK.*

# ESCR Washer Head Structural Timber Screw

The ESCR screws have a washer head and 6 lobe drive to aid installation and give excellent pull-through capacities.

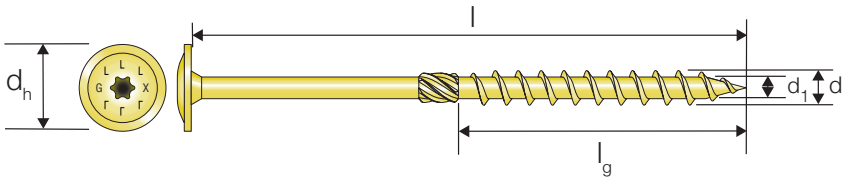
**Material:** Heat treated carbon steel.

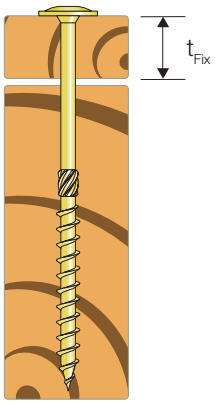
**Benefits**
- High pull-out resistance.
- Reamer allows smooth driving.
- Connects two or more timbers together.

**Finish:** Electrogalvanised with yellow finish and anti-friction coating. Zinc coating thickness ≥ 5µm.

**Warning:** Industry studies show that hardened fasteners can experience performance problems in wet or corrosive environments. Accordingly, the ESCR timber screws should only be used in dry, interior and non-corrosive environments.

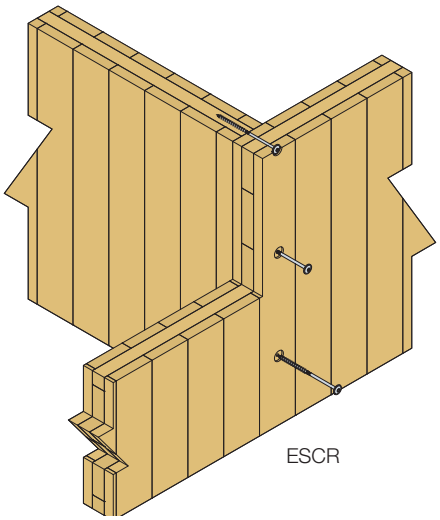
**Installation:**
- The ESCR screws have a washer head and 6 lobe drive to aid installation and give excellent pull-through capacities.
- Screws install best with an impact driver and a T40 6-lobe bit (included in the box).
- Pre-drilling is typically not required.
- Drive the fastener so that the top of the head is slightly embedded into the top surface of the timber. To ensure correct performance, do not under or over-drive the fastener.



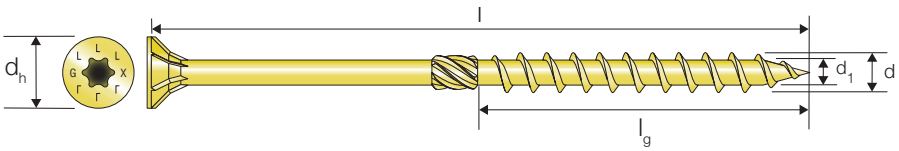

## Product Dimensions: ESCR

| Model No. | Product Dimensions [mm] | | | | | | |
|---|---|---|---|---|---|---|---|
| | d | l | $d_h$ | $d_1$ | $l_g$ | $t_{fix}$ (Max) | Bit |
| ESCR8.0x80 | 8 | 80 | 20 | 5.3 | 54 | 26 | T-40 |
| ESCR8.0x100 | 8 | 100 | 20 | 5.3 | 54 | 46 | T-40 |
| ESCR8.0x120 | 8 | 120 | 20 | 5.3 | 54 | 66 | T-40 |
| ESCR8.0x140 | 8 | 140 | 20 | 5.3 | 84 | 56 | T-40 |
| ESCR8.0x160 | 8 | 160 | 20 | 5.3 | 84 | 76 | T-40 |
| ESCR8.0x180 | 8 | 180 | 20 | 5.3 | 100 | 80 | T-40 |
| ESCR8.0x200 | 8 | 200 | 20 | 5.3 | 100 | 100 | T-40 |
| ESCR8.0x220 | 8 | 220 | 20 | 5.3 | 100 | 120 | T-40 |
| ESCR8.0x240 | 8 | 240 | 20 | 5.3 | 100 | 140 | T-40 |
| ESCR8.0x260 | 8 | 260 | 20 | 5.3 | 100 | 160 | T-40 |
| ESCR8.0x280 | 8 | 280 | 20 | 5.3 | 100 | 180 | T-40 |
| ESCR8.0x300 | 8 | 300 | 20 | 5.3 | 100 | 200 | T-40 |
| ESCR8.0x320 | 8 | 320 | 20 | 5.3 | 100 | 220 | T-40 |



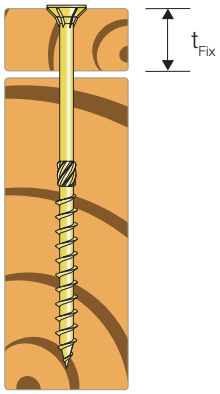
# ESCRC Countersunk Structural Timber Screw

The ESCRC is a countersunk head screw designed to connect two or more timber members together. The countersunk head gives flush fitting while allowing the timber members to close up firmly.



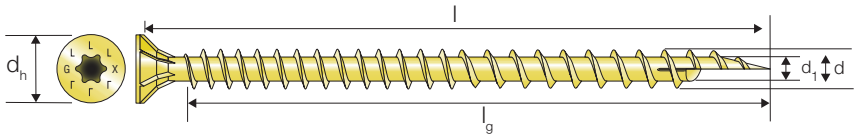

## ESCRC Product Dimensions

| Model No. | Product Dimensions [mm] | | | | | | |
|---|---|---|---|---|---|---|---|
| | d | l | $d_h$ | $d_1$ | $l_g$ | $t_{fix}$ (Max) | Bit |
| ESCRC8.0X80 | 8 | 80 | 15 | 5.3 | 54 | 26 | T-40 |
| ESCRC8.0X100 | 8 | 100 | 15 | 5.3 | 54 | 46 | T-40 |
| ESCRC8.0X120 | 8 | 120 | 15 | 5.3 | 54 | 66 | T-40 |
| ESCRC8.0X140 | 8 | 140 | 15 | 5.3 | 84 | 56 | T-40 |
| ESCRC8.0X160 | 8 | 160 | 15 | 5.3 | 84 | 76 | T-40 |
| ESCRC8.0X180 | 8 | 180 | 15 | 5.3 | 100 | 80 | T-40 |
| ESCRC8.0X200 | 8 | 200 | 15 | 5.3 | 100 | 100 | T-40 |
| ESCRC8.0X220 | 8 | 220 | 15 | 5.3 | 100 | 120 | T-40 |
| ESCRC8.0X240 | 8 | 240 | 15 | 5.3 | 100 | 140 | T-40 |
| ESCRC8.0X260 | 8 | 260 | 15 | 5.3 | 100 | 160 | T-40 |
| ESCRC8.0X280 | 8 | 280 | 15 | 5.3 | 100 | 180 | T-40 |
| ESCRC8.0X300 | 8 | 300 | 15 | 5.3 | 100 | 200 | T-40 |
| ESCRC8.0X320 | 8 | 320 | 15 | 5.3 | 100 | 220 | T-40 |



# ESCRFTC Fully Threaded Structural Timber Screw

The ESCRFTC is a countersunk head screw designed to connect two or more timber members together. The countersunk head gives flush fitting while allowing the timber members to close up firmly.




## ESCRFTC Product Dimensions

| Model No. | Product Dimensions [mm] | | | | | |
|---|---|---|---|---|---|---|
| | d | l | $d_h$ | $d_1$ | $l_g$ | Bit |
| ESCRFTC8.0x180 | 8 | 180 | 15 | 5.2 | 170 | T-40 |
| ESCRFTC8.0x200 | 8 | 200 | 15 | 5.2 | 190 | T-40 |
| ESCRFTC8.0x240 | 8 | 240 | 15 | 5.2 | 230 | T-40 |
| ESCRFTC8.0x300 | 8 | 300 | 15 | 5.2 | 290 | T-40 |
| ESCRFTC8.0x400 | 8 | 400 | 15 | 5.2 | 390 | T-40 |
| ESCRFTC10.0x180 | 10 | 180 | 18.5 | 6.1 | 168 | T-50 |
| ESCRFTC10.0x220 | 10 | 220 | 18.5 | 6.1 | 208 | T-50 |
| ESCRFTC10.0x240 | 10 | 240 | 18.5 | 6.1 | 228 | T-50 |
| ESCRFTC10.0x300 | 10 | 300 | 18.5 | 6.1 | 288 | T-50 |
| ESCRFTC10.0x350 | 10 | 350 | 18.5 | 6.1 | 338 | T-50 |

# SDWC Cap Style Fully Threaded Structral Timber Screw

The SDWC Truss screw is tested in accordance with ICC-ES AC233 (screw) and AC13 (wall assembly and roof-to-wall assembly) for uplift and lateral loads between wall plates and vertical wall framing and between the top plate and the roof rafters or trusses. SDWC15450 is recognised for use in chemically treated timber as described in the evaluation report.

**Material:** Carbon steel

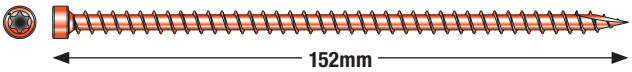
**Finish:** SDWC15450—E-Coat™;
SDWC15600—Clear Zinc Coating (with Orange Topcoat)

## Product and Packaging Information

SDWC15450-KT and SDWC15600-KT contains:
- (50) Strong-Drive® SDWC screws
- (1) Matched-tolerance driver bit

*(Part no. BIT30T-2-RC3; also sold separately)*
- (1) Metal installation guide tool

- SDWC-GUIDE *(for SDWC15600 only; also sold separately)* or
- SDWC-GUIDE275 (*for SDWC15450 only; also sold separately)*



## Strong-Drive SDWC TRUSS Screw Specifications

| Model No. | Fastener Length (mm) | Thread Length (mm) | Diameter (mm) | | | Fastener Strength | | |
|---|---|---|---|---|---|---|---|---|
| | | | Head | Major | Minor | Bending Yield Strength (MPa) | Tension (kN) | Shear (kN) |
| SDWC15450 | 114 | 108 | 8.31 | 5.97 | 3.86 | 1345 | 15.5 | 10.9 |
| SDWC15600 | 152 | 146 | | | | | | |

For the purposes of measuring overall length, fasteners shall be measured from the top of the head to the end of the point. Length of thread includes the point.
Bending yield strength is the 5%-offset value based on the minor diameter as determined following ASTM F1575.
Tension and shear properties are average ultimate values. Shear strength is shear through the threads.

## Characteristic Single-Shear Lateral Design Values for the Strong-Drive SDWC Truss Screws

| Model No. | Fastener Length (mm) | Thread Length (mm) | Side Member | | Main Member | | Lateral Characteristic Design Value, $Q_{kL}$ (N) | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Min. Thickness (mm) | Grain | Min. Thickness (mm) | Grain | $Q_{kL}$ para | | $Q_{kL}$ perp | |
| | | | | | | | JD4 | JD5 | JD4 | JD5 |
| SDWC15450 | 114 | 108 | 38 | Face | 38 | End | — | — | 2220 | 2220 |
| SDWC15600 | 152 | 146 | 2–38 | Face | 38 | Edge | 4200 | 3500 | 5300 | 5100 |
| | | | 38 | Face | 38 | End | — | — | 2950 | 2650 |
| | | | 2–38 | Face | 38 | End | — | — | 4650 | 4150 |

The Main Member is the part where the fastener tip is embedded; the Side Member is part adjacent to the head.
Minimum penetration into the main member shall be 25mm.
The main and side members shall be sawn timber or structural composite timber with the design density or equivalent design density typical of JD4 and JD5 grades.
Screws shall be installed into the side grain of the wood side member with the screw axis at a 90-degree angle to the surface of the member.
Para: Parallel-to-grain loading in the side member and perpendicular-to-grain loading in the main member.
Perp: Perpendicular-to-grain loading in the side member and perpendicular-to-grain loading in the main member, except where the main member is loaded parallel-to-grain.

## Characteristic Withdrawal and Pull-Through for the Strong-Drive SDWC Truss Screws

| Model No. | Thread Length (mm) | Thread Length (mm) | Main Member | | Withdrawal Characteristic Design Value, $Q_{kw}$ (N/mm) | | Pull-Through Characteristic Design Value, $Q_{kp}$ (N/mm) | |
|---|---|---|---|---|---|---|---|---|
| | | | Min. Thickness (mm) | Grain | JD4 | JD5 | JD4 | JD5 |
| SDWC15450 | 114 | 108 | 38 | Edge | 133 | 84 | — | — |
| SDWC15600 | 152 | 146 | 38 | End | 78 | 50 | 96 | 82 |
| | | | 38 | Face | 110 | 75 | 108 | 97 |
| | | | 2–38 | Face | 118 | 102 | 131 | 105 |

Withdrawal and pull-through characteristic values are in N/mm of thread penetration into the main member and side member, respectively.
Face and edge installations are at 90 degrees to the grain and end installation is along the grain.
Withdrawal and Pull-through loads shall be checked against tension strength in design.

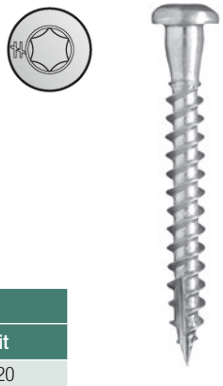
## Connection Geometry for Strong-Drive SDWC Truss Screws

| Condition | | Minimum Distance or Spacing (mm) | |
|---|---|---|---|
| | | SDWC15450 | SDWC15600 |
| Edge Distance | Load in any direction | 30 | 30 |
| End Distance | Load Along Grain Toward End | 60 | 60 |
| | Load Along Grain Way From End | 60 | 60 |
| | Loading Across Grain | 60 | 60 |
| Spacing Between Fasteners in a Row | Loaded Along Grain | 90 | 90 |
| | Loaded Across Grain | 60 | 60 |

Edge distances, end distances, and spacing of screws shall be sufficient to prevent splitting of the timber or as required in this table, or when applicable, as recommended by the structural composite timber manufacturer, whichever is more restrictive.
Edge and end distances based on AS 1720.1, Table 4.8.

# CSA Structural Connector to Timber Screw

CSA is a self-drilling flat head screw with a type 17 point tip suitable for installing construction connectors to timber structures.



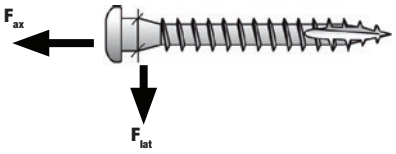
- Use to install selected Simpson Strong-Tie connectors.
- Flat head.
- Type 17 point.
- Carbon Steel or Stainless Steel.
- 250 screws per box.

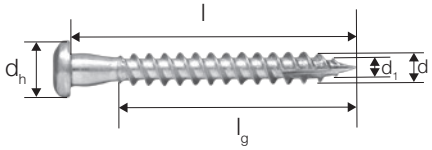
## CSA Product Dimensions

| Model Reference | Product Dimensions [mm] | | | | | |
|---|---|---|---|---|---|---|
| | d | l | $d_h$ | $d_1$ | $l_g$ | Bit |
| CSA5.0x40 | 4.9 | 40 | 8.3 | 3.2 | 34 | T-20 |
| CSA5.0x40S | 4.9 | 40 | 8.3 | 3.2 | 34 | T-20 |

Carbon Steel

Stainless Steel




# CNA Ring Shank Nail

CNA ring shank nail is tested and approved for use with Simpson Strong-Tie joist hangers, brackets, straps and nail plates.

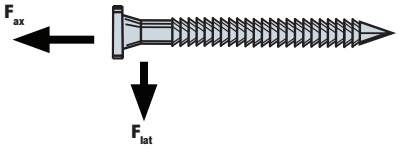
- Annular ring shank.
- Carbon steel for interior applications only.
- Grade 304 Stainless Steel for exterior applications and corrosive environments.

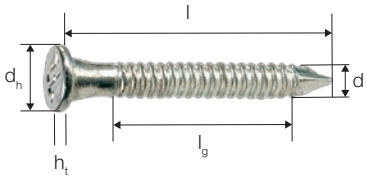
## CNA Product Dimensions

| Model No. | Product Dimensions [mm] | | | | |
|---|---|---|---|---|---|
| | d | l | $d_h$ | $d_1$ | $l_g$ |
| CNA4.0x50 | 4.0 | 50 | 8 | 4.4 | 34 |
| CNA4.0x60S | 4.0 | 60 | 8 | 4.4 | 44 |

Carbon Steel

Stainless Steel



# QDBPC50E Construction Connector System

The revolutionary screw connector attachment, QDBPC50E, for installing Simpson Strong-Tie® CE-labelled CSA connector screws. By using QDBPC50E you will achieve a significant time saving of at least 50% due to the fact that no time is wasted on searching for loose screws in a box, installing them with a screwdriver and starting the process all over again. When using the new attachment, a new screw is ready as soon as the first has been installed. There is no waiting or lost screws by using this system.


QDBPC50E Attachment

- Part of the Quik drive range.
- Use with CSA collated screws to install connectors such as angle brackets and joist hangers to timber.
- Suitable for screws 35mm to 50mm long.
- Use with Mandrel code: MANDREL 128E.
- Connects easily with screw gun or Quik drive extension.
- Teflon coated moving parts for a long life.

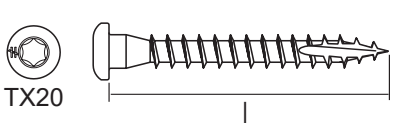
| QDBPC50E includes | Model No. | Compatible Screws |
|---|---|---|
| Attachment | QDBPC50E | CSA |
| Mandrel | MANDREL 128E | |
| Spare Bits | BITLTX20E (x1) | |

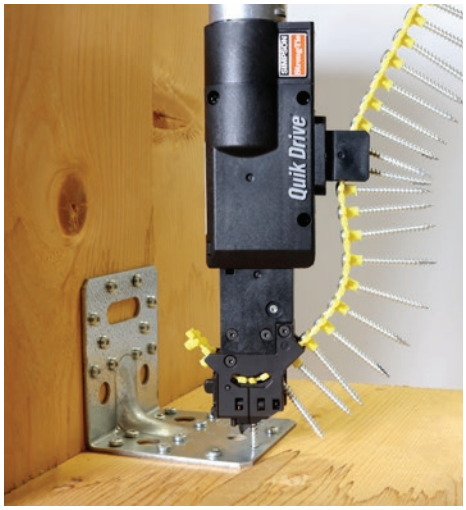
The CSA connector screw is specifically designed to fasten steel brackets to wood. The smooth shaft under the head fits tightly to the hole in the bracket. This provides a stiff connection with larger cross-resistance than standard screws. Fibre cut tip allows for easyand fast driving. In most load bearing capacity tables for brackets, CNA connector nails are listed as fasteners.

CSA screws can replace CNA nails, when used in the same connection detail, as they have greater pullout strength per unit than a CNA nail, and at least the same cross-bearing capacity.

Minimum requirements for spacing and minimum edge and end distances for connector screws CSA5,0x$\ell$ are the same as for connector nails CNA4,0x$\ell$.

| Model No. | Length [mm] | Diameter | Qty per Strip | Material | Application | Qty per Pack |
|---|---|---|---|---|---|---|
| CSA5.0X40T | 40 | 5.0 | 25 | Carbon Steel | For fastening connectors to wood. | 1,500 |



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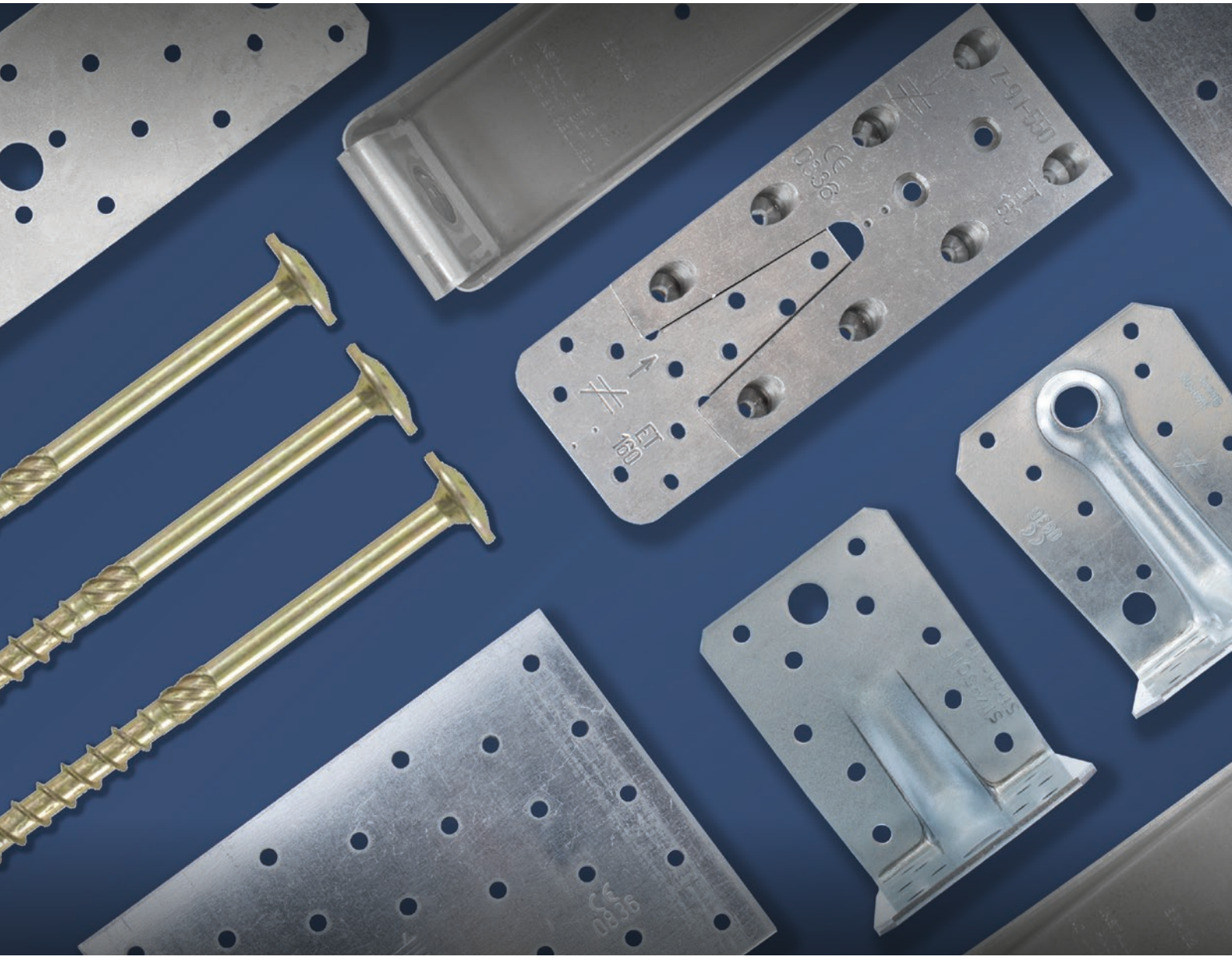


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