KNC VN
FACADE

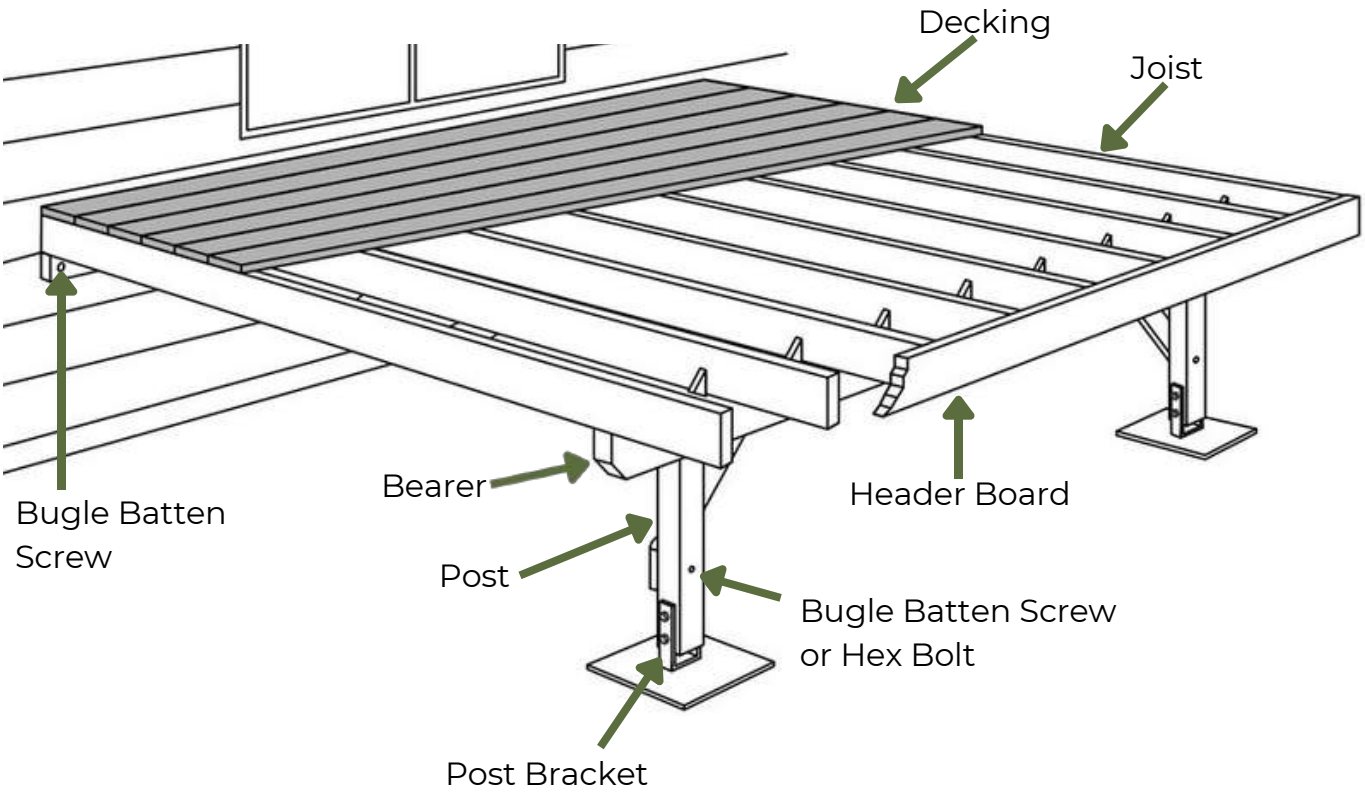
TECHNICAL DECKING GUIDE

PHOTO: KUDA VILLINGILI, MALDIVES

THE STRENGTH AND BEAUTY BEHIND THE WORLDS BEST RESORTS

PHOTO: KUDA VILLINGILI, MALDIVES

DECK DESIGN OVERVIEW



A deck is made up of four main components: posts, bearers, joists, and decking boards.

The posts are either buried in the ground or secured with brackets bolted to concrete foundations. Bearers are then attached to the posts using bolts or screws. Joists are fixed to the bearers, typically with brackets, nails, or screws.

Finally, decking boards are secured to the top of the joists with screws. Depending on the project's height, ground conditions, and other factors, alternative methods may be used.

A well-designed and properly built timber deck can enhance the value and aesthetics of both residential and commercial properties, providing years of enjoyment and functionality

DECKING PROFILES

90mm x 19mm

Profile : Reeded one face
Treatment : CCA H4 KD

Available Lengths 2.4, 3.0, 3.6m

140mm x 19mm

Profile : Reeded one face
Treatment : CCA H4 KD

Available Lengths 2.4, 3.0, 3.6m

90mm x 32mm

Profile : Reeded one face
Treatment : CCA H4 KD

Available Lengths 2.4, 3.0, 3.6m

140mm x 32mm

Profile : Reeded one face
Treatment : CCA H4 KD

Available Lengths 2.4, 3.0, 3.6m

FRAMING

70 x 40 90 x 40 140 x 40 190 x 40

Suitable for joists, bearers, wall studs, landscaping, pergola rafters and purlins, boardwalk, decking, retaining walls, landscaping, fascia, outdoor furniture, structural and decorative.

90 x 90

Posts, landscaping, bearers.

Available Lengths 2.4, 3.0, 3.6m

All are supplied gauged, CCA H4, and KD as standard. Lengths: 2.4, 3.0, 3.6M.

SPAN TABLES

These span tables provide indicative data as a guide for the construction of simple decking projects. We recommend an engineers designed solution for each project.

Bearers. Maximum continuous span. (m)	**Loaded dimension of bearer** (m)	**Bearer size (width x thickness)** (mm x mm)
1.3	0.8	90 x 90
	1.5	2/140x40
	2.7	2/190x40
1.65	0.5	90 x 90
	0.9	2/140x40
	1.7	2/190x40
2	1.1	2/190x40

Joist (mm)	**Maximum span of joists at a maximum spacing** (mm) **of:**		
	400	**450**	**600**
90 x 40	1.6m	1.5	1.3
140 x 40	2.5	2.35	2.05
190 x 40	3.4	3.2	2.75

Typical characteristics of treated New Zealand pine framing in exterior applications are as follows:

Bending strength: 14.0 MPa
Modulus of elasticity: 8.0 GPa

PHOTO: HARD ROCK HOTEL, MALDIVES

TREATMENT

- All timber is treated by an independently audited, government approved agency.
- The standard treatment specification provided is H4.
- This exceeds the usual specification of H3.
- Treating to H4 provides greater security and longevity.
- Trustwood® can be supplied H3 to H6 if required.

Exterior timber is treated to 'H' or 'Hazard' class levels from 3 to 6. This table explains each hazard class along with appropriate uses.

H3	Exterior, above ground, exposed to weather and dampness.	Moderate decay, borers and termites.
H4	**Exterior above ground, in-ground or in direct contact with the ground.**	**Severe decay, borers and termites.**
H5	Exterior in-ground or in direct contact with the ground. Continuous wetting.	Extreme decay, borers and termites.
H6	Exterior in-ground or in direct contact with the ground. Fully immersed in fresh or salt water.	Extreme decay, borers and termites.

WARRANTY

All treated timber supplied is covered by Koppers international warranty. A seperate comprehensive warranty document is available on request.

Extract from the Koppers warranty:

This Warranty covers wood products pressure treated with Timber Preservatives ("Treated Wood Product"). Koppers Performance Chemicals... ("KPC") warrants to Owners that, subject to the terms, conditions, limitations and exclusions in this Warranty, the Treated Wood Product will not structurally fail during the applicable period stated in the Warranty - 50 years.

THE TRUSTWOOD® ADVANTAGE

Regular production process:

Issues: - inconsistent sizing
- less stable
- rough surface
- less attractive appearance

The Trustwood® process:

Benefits: - consistent sizing
- more stable
- smooth surface
- very attractive appearance

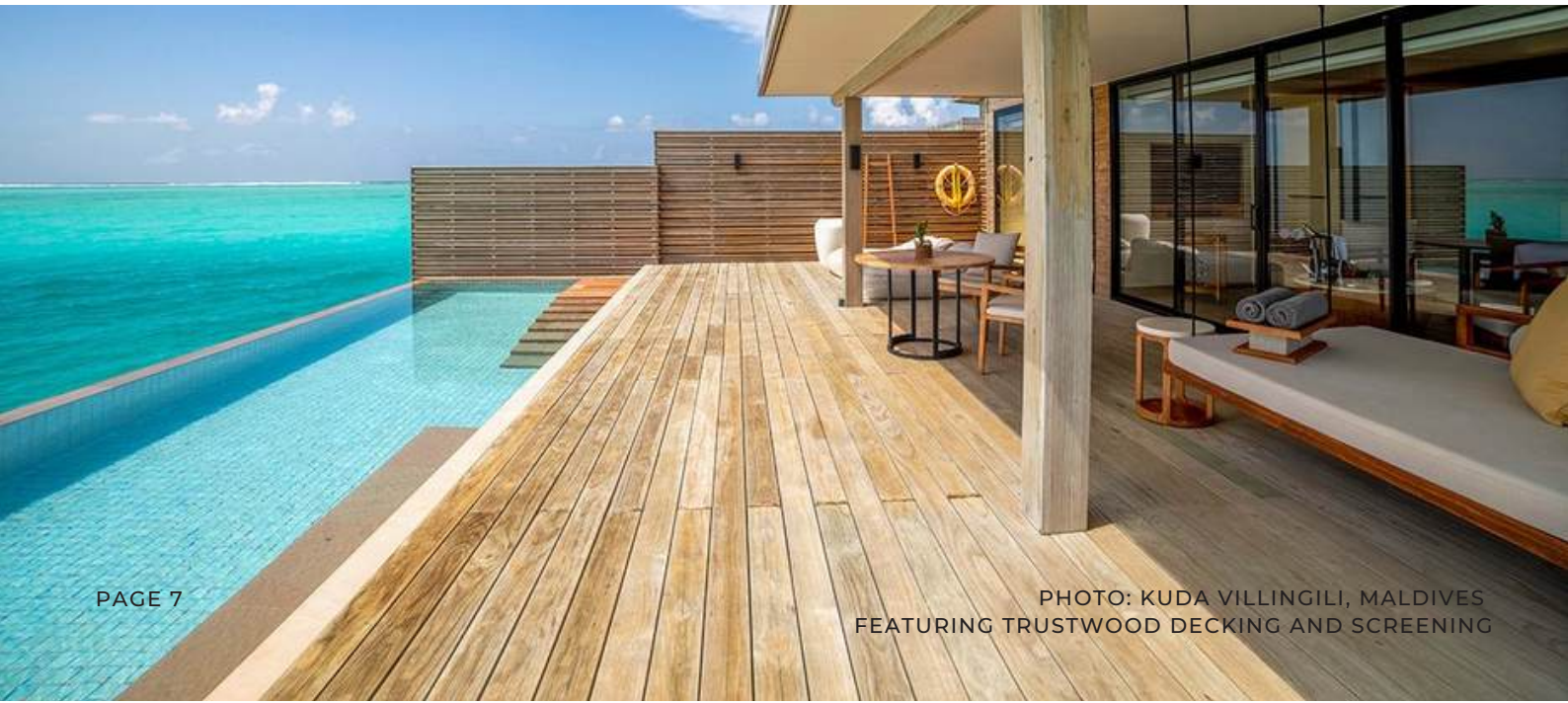


PHOTO: KUDA VILLINGILI, MALDIVES
FEATURING TRUSTWOOD DECKING AND SCREENING

KNC FACADE

DECKING FASTENER GUIDE

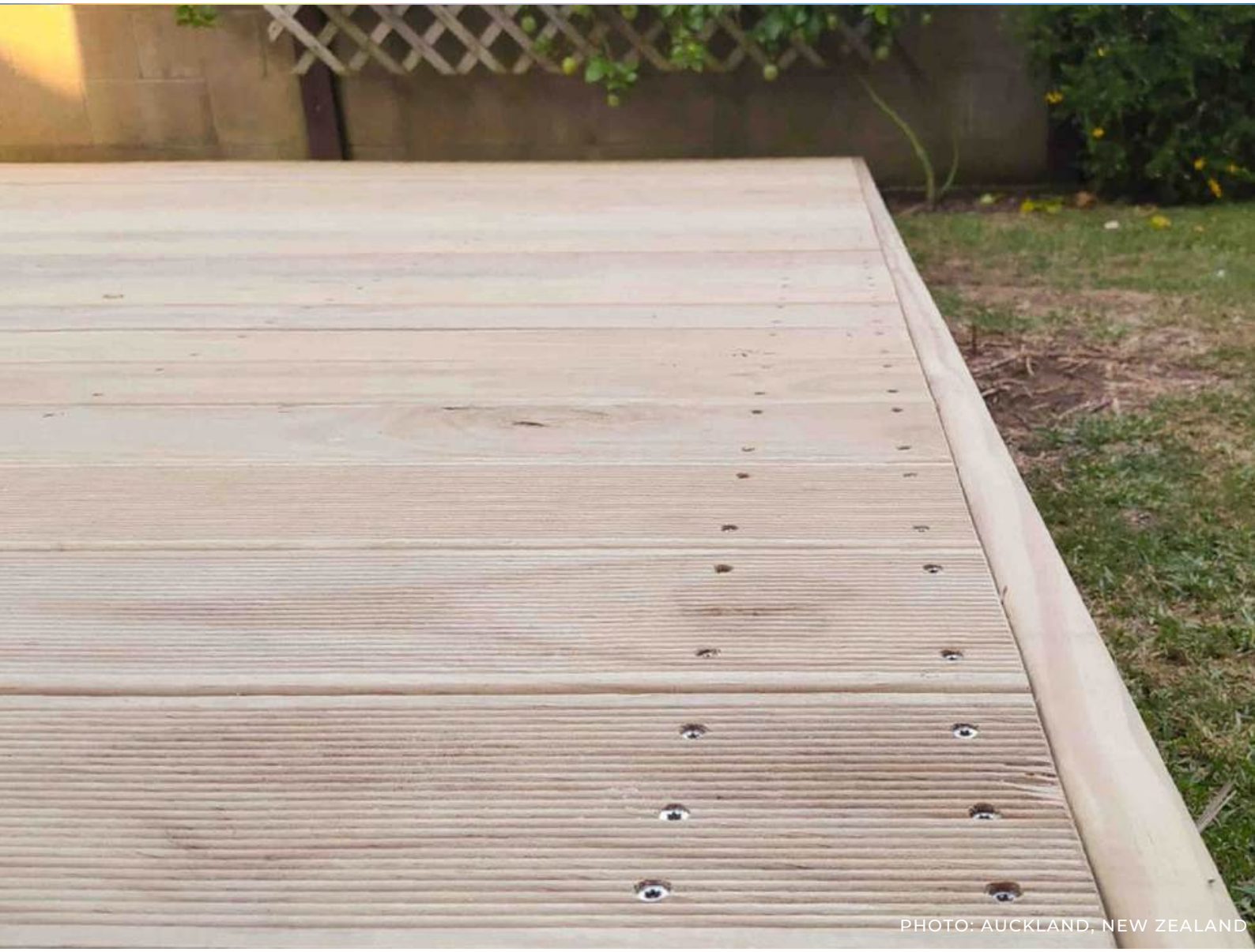
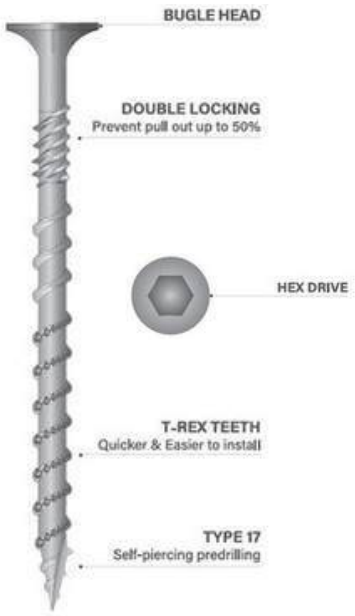


PHOTO: AUCKLAND, NEW ZEALAND

FASTENINGS

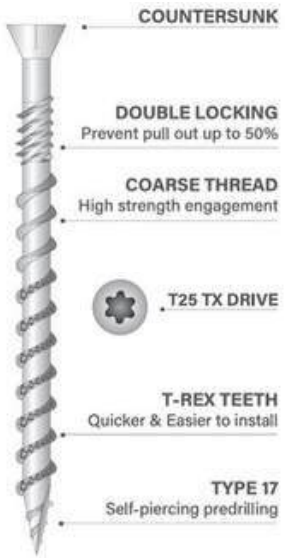


Batten Screw

BUGLE HEAD HEX DRIVE

Material : Outdoor XGuard
Dimension : 14g x 75mm, 100mm, 125mm
Used for: - Sandwiching timber components to create a stronger bearer (see span table).
- Fastening bearers to the sides of posts.
- Fastening headerboards to joists (instead of or in support of a joist hanger).

Pack sizes	25

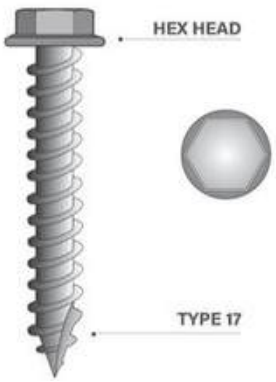


Decking Screw

COUNTERSUNK HEAD TORX DRIVE

Material : Stainless Steel 304
Dimension : 10g x 60mm, 65mm, 75mm
Used for: Fastening decking boards to joists and various uses.

Pack sizes	50, 250



Bracket Screw

HEX HEAD

Material : C4 Galvanised or Stainless Steel 316
Dimentions: 12g/14g 35mm
Used for: Fastening brackets, ties, and other hardware to timber frames and substructures.

Pack sizes	100 or 200

FASTENINGS

Bracket Nail

FLAT HEAD

Material : Hot-Dip Galvanised or Stainless Steel
Dimensions: 30mm x 3.15mm dia.
Used for: Fastening brackets, ties, and other hardware to timber frames and substructures.

Pack size	5kg (approx. 2200)

Bolt and Nut

ENGINEERS HEX BOLT

Material : Hot-Dip Galvanised or Stainless Steel
Dimensions: M12 120mm
Used for: Attaching bearers and posts together and the construction of pergolas.

Pack size	25

Washer

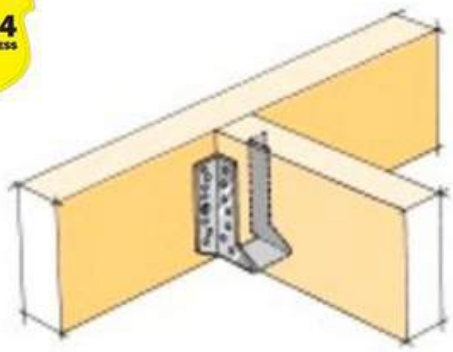
ROUND GALV WASHER

Material : Hot-Dip Galvanised or Stainless Steel
Dimensions: M12
Used for: Used with engineers hex bolt

Pack size	100

BRACKETS & FIXINGS

JOIST HANGERS



Material : Electro-Zinc or Stainless steel
Dimensions : 47 x 90 47 x 120 47 x 190
Used for: Joist fixings where a strong, rigid joint is required between members meeting at 90˚, e.g. joist to beam connection.

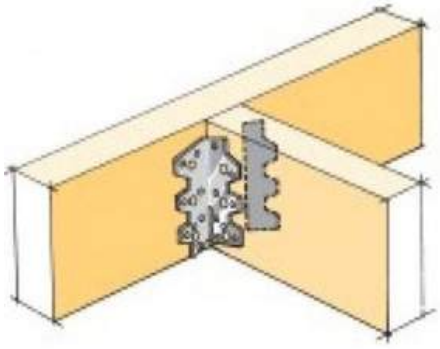
Pack sizes 60

	Joist Hangers					
	Characteristic Load - Nails			Characteristic Load - Screws		
Joist Hanger Type	No. of Nails per Flange	Down	Uplift	No. of Screws per Flange	Down	Uplift
JH 47 x 90	3	9.0 kN	6.0 kN	1	7.0 kN	4.7 kN
JH 47 x 120	5	15.0 kN	10.0 kN	2	14.0 kN	12.0 kN
JH 47 x 190	9	27.0 kN	18.0 kN	3	21.0 kN	18.0 kN
	Product Nails 30mm x 3.15			Type 17 - 12g x 30mm Hex Head		
	*4 Flanges per hanger					

MULTI-USE BRACKETS

Material : Electro-Zinc or Stainless steel
Dimensions : 125mm high x 38mm flanges
Used for: Joist fixings in five different combinations. This product provides for all alternatives with the bending slot enabling easy on-site bending.

Pack sizes 100

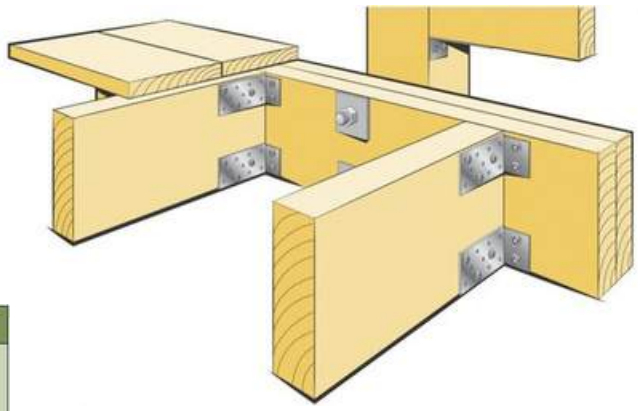


Multi-use Brackets		
Characteristic Load		
Fixings	Nails: All holes filled with 30mm x 3.15 dia.	Screws: 3 x Type 17 - 14g x 35mm per Flange
Shear	11.9 kN / pair	10.9 kN / pair

BRACKETS & FIXINGS

CONCEALED JOIST BRACKETS

Material : Electro-Zinc or Stainless steel
Dimensions : 88mm x 40mm 88mm x 80mm
Used for: Joist fixing in exposed situations, resisting any wind uplift.

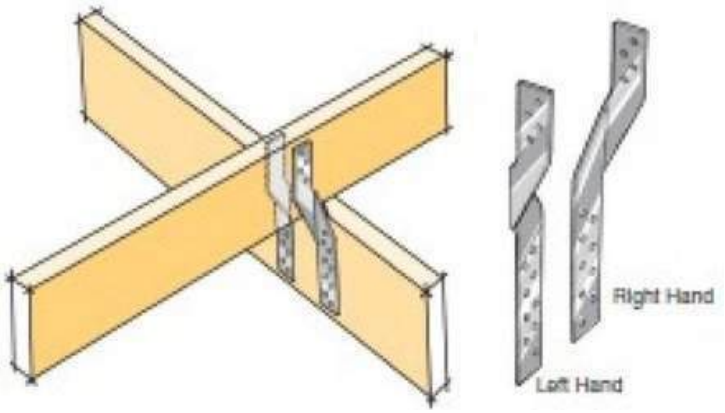


Pack sizes 60

Concealed Joist Brackets			
Characteristic Load	CPC40S	CPC40	CPC80
Uplift / Tension	4.0 kN / pair	8.0 kN / pair	16.0 kN / pair
Fix with: Product Nails 30mm x 3.15 dia. AND Type 17 - 14g 35mm Hex Head Screws			

CEILING TIES

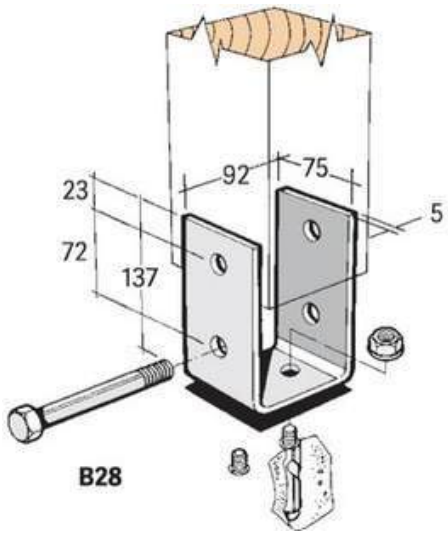
Material : Electro-Zinc or Stainless steel
Dimensions : 160mm 200mm
Used for: Fixing joists to bearers.



Pack sizes 50

Ceiling Ties	
Characteristic Load	CT200 (pair)
Uplift / Tension (4 nails each end)	10.5 kN / pair
Nails: Product Nails 30mm x 3.15 dia.	

BRACKETS & FIXINGS



Post Bracket

POST TO CONCRETE BRACKET

HD GALVANISED

304 STAINLESS

Material : Hot-Dip Galvanised or Stainless Steel
Dimensions: 137mm x 75mm x 92mm
Used for: Fixing a post to a concrete foundation.

Pack sizes 4