

## Technical data sheet

**SIMPSON**

**Strong-Tie**

### HTT Hold Down

Ideal for existing or new construction, HTT Tension ties provide a high strength timber to concrete, or timber to masonry, tension connection

The long vertical leg makes it possible to add the required number of fasteners (CNA Nails and CSA 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 / masonry anchorage point

## Features

### Material

**Z275 Pre-galvanised mild steel.**

### Benefits

- Enables a connection to concrete structure.

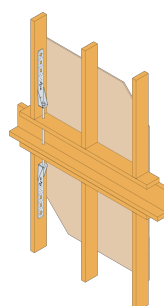
## Applications

### Connections

#### Timber Members

### When to Use

- Timber structures which exerted to high uplift forces can be connected to concrete structures with the HTT Hold Down.
- Tension force connection between timber floor joists and masonry walls



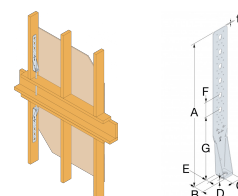
HTT  
Hold Down

## Technical Data

### Product Dimensions



References	DB nr.	NOBB nr.	Product Dimensions [mm]						Flange A				Flange B			Box Quantity
			A	B	C	D	E	t	Ø4,7	Ø5	Slots Ø5x12	Ø21	Ø17,5	Ø21	Ø25	
HTT4	1388657	42922721	314	60	64	11.4	35	2.8	18	-	-	-	1	-	-	16
HTT5	1388655	42922755	403	56	64	11.4	35	2.8	26	-	-	-	1	-	-	10
HTT22E	2049836	-	558	60	63	12	33	3	-	31	3	3	-	-	-	10
HTT31	2151752	-	790	60	90	12	33	3	-	41	4	6	-	-	1	5



### Product capacities - simplified values

References	Product capacities - Timber to Concrete										
	Number of Fasteners				Characteristic capacities - Timber C24 to concrete [kN]						
	Flange A		Flange B		R <sub>1,k</sub> (without US50/50/8 washer)				R <sub>1,k</sub> (With US50/50/8 washer)		
	Qty	Type	Qty	Type	CNA4.0x50	CNA4.0x60	CSA5.0x50	CSA5.0x80	CNA4.0x40	CNA4.0x50	CNA4.0x60
HTT4	18	CNA	1	M16	24.7	31	-	-	23.9	31.7	34.2
HTT5	18	CNA	1	M16	24.7	31	-	-	23.9	31.7	34.2
HTT22E	26	CNA/CSA	1	M16	42.3	52.3	52.3	52.3	-	-	-
HTT31	39	CNA/CSA	1	M24	77.4	77.4	77.4	77.4	-	-	-

Simplified numerical characteristic capacities values are based on load duration and service class assumption (Instantaneous, Service class 2,  $k_{mod} = 1.1$ ). For other load duration, service class and fasteners, please refer to ETA-07/0285.

For HTT31, 4 CSA5.0x50 must always be installed on the bottom extremity of the oblong holes to reach the capacities given in the table. For other fasteners in these holes, the calculation shall be calculated according to ETA.

# Technical data sheet



## HTT Hold Down

### LGS Performance Values - 1.2mm Thick - Single Stud

References	Fasteners			Characteristic Capacities [kN]		Safe Working Loads [kN]	
	Flange A	Flange B		R <sub>2,K</sub>	Deflection at Load [mm]	R <sub>2,SWL,ST</sub>	Deflection at Load [mm]
	Stud (X34B1016)	Anchor Bolt					
	Qty	Qty	Ø [mm]				
HTT4	18	1	16	21.2	4.7	14.1	2.6
HTT5	26	1	16	28.9	6.4	18.9	3.2
HTT22E	-	-	-	-	-	-	-
HTT31	-	-	-	-	-	-	-

1. Performance Values are based upon tests completed by Simpson strong Tie U.S I 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 & configuration

### LGS Performance Values - 1.6mm Thick - Single Stud

References	Fasteners			Safe Working Loads [kN]		Characteristic Capacities [kN]	
	Flange A	Flange B		R <sub>2,SWL,ST</sub>	Deflection at Load [mm]	R <sub>2,K</sub>	Deflection at Load [mm]
	Stud (X34B1016)	Anchor Bolt					
	Qty	Qty	Ø [mm]				
HTT5	26	1	16	18.5	3.2	28.6	6.4

1. Performance Values are based upon tests completed by Simpson strong Tie U.S I 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 & configuration

### LGS Performance Values - 1.2mm Thick - Back to Back

References	Fasteners			Safe Working Loads [kN]		Characteristic Capacities [kN]	
	Flange A	Flange B		R <sub>2,SWL,ST</sub>	Deflection at Load [mm]	R <sub>2,K</sub>	Deflection at Load [mm]
	Stud (X34B1016)	Anchor Bolt					
	Qty	Qty	Ø [mm]				
HTT4	18	1	16	19.5	3.2	29.7	6.4
HTT5	26	1	16	20.8	3.2	31	6.4

1. Performance Values are based upon tests completed by Simpson strong Tie U.S I 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 & configuration

## HTT Hold Down

## Installation

### Fixing

#### Fastening into Timber Stud:

- 4mm CNA Nails
- 5mm CSA Screws

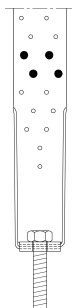
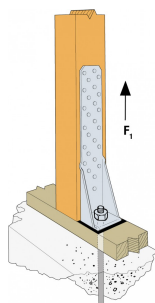
for fastener & capacity options see 'Product Capacities - Simplified Values' table

#### Fastening to the concrete:

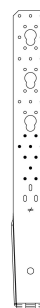
- Mechanical anchors: M16 WA Anchor or BOAX-II
- Chemical anchors: injection mortar SET-XP or AT-HP + M16 threaded rod LMAS

### Installation

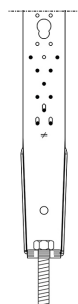
- The connector is mounted with a suitable M16 bolt to the concrete or masonry wall, and the vertical leg is fastened with 4mm CNA Nails, or 5.0mm CSA Screws, to the timber.



For HTT5 these holes must always be filled.



For HTT22E these holes must always be filled



HTT22E Nail pattern

