THD — Titen HD Heavy Duty Screw Anchor (Concrete & Masonry)

SIMPSON Strong-Tie ®

Material

Carbon Steel

Material

Mechanically Galvanised

Corrosion Resistance Level
MEDIUM
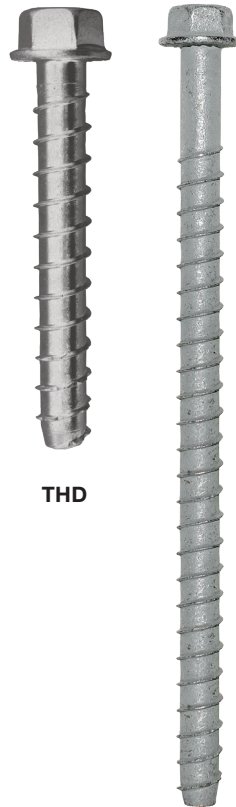
Size: See the table below

Features & Benefits

- Serrated cutting teeth and patented thread design reduce installation torque, enable quick and easy installation
- Head Stamp with the Simpson Strong-Tie "≠" sign and the anchor size for easy post-installation inspection
- Specialised Heat-Treatment Process creates tip hardness to facilitate cutting while the anchor body remains ductile
- With high ductility it can be bent to a right angle (90 degrees) and remain intact without snapping or breakage
- Hex-Washer Head increases bearing surface and requires no separate washer, unless required by specification and provides a clean installed appearance
- No special drill bit required — designed to install using standard-sized ANSI tolerance drill bits
- Testing shows the Titen HD installs in concrete with 50% less torque than competitor anchors
- Removable — ideal for temporary anchoring (e.g., formwork, bracing) or applications where fixtures may need to be moved
- Vibration and Shock Resistance
- Excellent minimum edge distance performance
- Qualified for static and seismic loading conditions
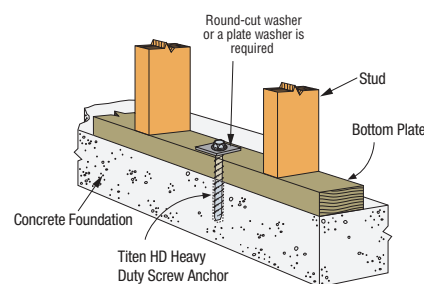- Available in a wide range of diameters and lengths

Approvals

- Complies with AS5216
- ETA-12/0060 (Option 1)
- Code listed under IBC/IRC in accordance with ICC-ES AC193 and ACI 355.2 for cracked and uncracked concrete per ICC-ES ESR-2713
- Code listed under IBC/IRC in accordance with ICC-ES AC106 for masonry per ICC-ES ESR-1056
- BRANZ Appraisal 983 (2018) for applications related to bottom plate fixings and holdown applications per NZS 3604 using Titen HD
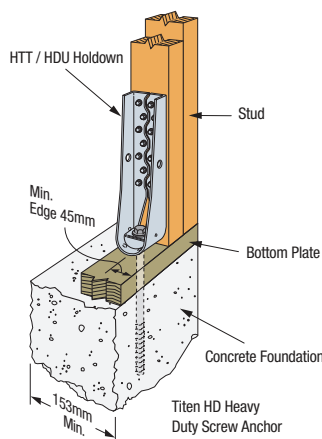
Applications

- Electrical Boxes
- Light Fixtures
- Window Frames
- Timber Strapping
- Pipe and calbe Clips

THD

THD12230MG

Serrated Teeth facilitate cutting and reduce installation torque

Easy Post-installation Inspection: The head is stamped with the Simpson Strong-Tie "≠" sign and the anchor size in mm

Highly Ductile: Can be bent to a right angle (90 degrees) and remain intact without snapping or breakage

Construction Details

Titen HD Bottom Plate Fixing

- Round-cut washer or a plate washer is required
- Stud
- Bottom Plate
- Concrete Foundation
- Titen HD Heavy Duty Screw Anchor

Titen HD With HTT/HDU Holdown Bottom Plate Fixing

- HTT / HDU Holdown
- Stud
- Min. Edge 45mm
- Bottom Plate
- Concrete Foundation
- 153mm Min.
- Titen HD Heavy Duty Screw Anchor
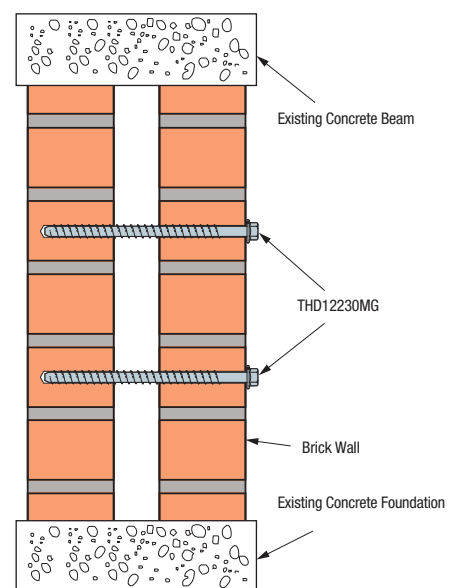
Titen HD Brick Walls Restoration

- Existing Concrete Beam
- THD12230MG
- Brick Wall
- Existing Concrete Foundation

This flyer reflects information available as of January 1, 2020 and may be updated periodically. Please visit our website for current information and limited warranty.

THD — Titen HD Heavy Duty Screw Anchor (Concrete & Masonry)
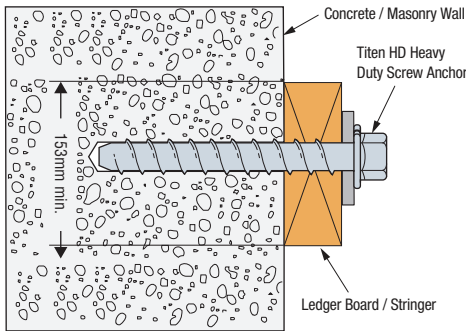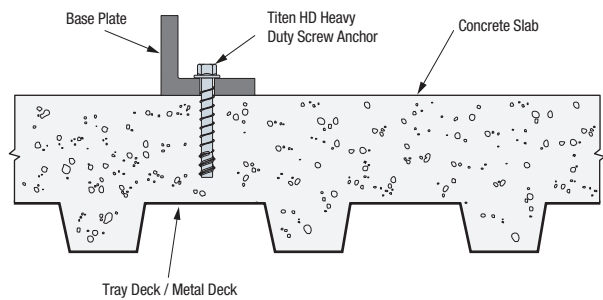
Titen HD Fastening Ledger / Stringer on Concrete Wall

Titen HD Fastening on Tray Deck / Metal Deck

Specifications - THD

Model No.	Size		Head	Thread	Material & Finish	Box Qty	Ctn Qty
THD08080MG	M8	80mm	Hex Head	Serrated Threads	Mechanically Galvanised	50	200
THD08100MG		100mm					200
THD08120MG		120mm					100
THD08140MG		140mm					100
THD10060MG	M10	60mm					200
THD10080MG		80mm					200
THD10090MG		90mm					200
THD10100MG		100mm					200
THD10120MG		120mm					200
THD10140MG		140mm					100
THD10160MG		160mm					100
THD12075MG	M12	75mm				20	80
THD12110MG		110mm					80
THD12130MG		130mm					80
THD12150MG		150mm					80
THD12190MG		190mm					80
THD12230MG		230mm				25	50
THD16130MG	M16	130mm				10	40
THD16150MG		150mm				10	40
THD20150MG	M20	150mm				5	20
THD20170MG		170mm				5	10

1. Mechanically galvanised finish is ≥ 12 microns in accordance with EN ISO 12683, Type 1. Not for use in highly corrosive or outdoor environments.
2. Other sizes available in MG finish by special order, contact Simpson Strong-Tie for details.
3. Length is measured from the underside of the head to the tip of the anchor.
4. The max. fixture holes are limited to the outside diameter of the anchor based on ETAG 001, Annex C.
5. **Titen HD® 12 x 230mm Masonry Screw for retrofitting URM cavity walls for out-of-plane composite behaviour.**

THD — Titen HD Heavy Duty Screw Anchor (Concrete & Masonry)

Installation Data

Description	Symbol	Units	Anchor Size				
			M8	M10	M12	M16	M20
Drill Hole Diameter	d_o		8	10	12	16	20
Maximum Diameter of Drill Bit	$d_{cut, max}$		8.45	10.45	12.5	16.5	20.55
Drill Depth	h_1		75	85	105	130	150
Nominal Embedment Depth	h_{nom}	mm	65	75	95	115	135
Anchor Length Range	L		70–140	60–160	75–150	130–150	150–170
Clearance Hole Diameter in Fixture	d_f		12	14	16	22	26
Maximum Thickness of Fixture	$t_{fix,max}$		85	85	85	85	85
Recommended impact screw driver with max. power output specified according to manufacturer's instructions.							
Installation Torque	$T_{inst, max}$	Nm	200		515		

Concrete Thickness, Edge Distance and Spacing

Description	Symbol	Units	M8	M10	M12	M16	M20
Minimum Concrete Thickness	h_{min}		105	125	150	180	220
Minimum Edge Distance	c_{min}		50	60	80	100	120
Minimum Spacing	s_{min}		50	60	80	100	120
Critical Edge Distance (cone)	$c_{cr,N}$	mm	$1.5 \times h_{ef}$				
Critical Spacing (cone)	$s_{cr,N}$		$3 \times h_{ef}$				
Critical Edge Distance (splitting)	$c_{cr,sp}$		$1.5 \times h_{ef}$				
Critical Spacing (splitting)	$s_{cr,sp}$		$3 \times h_{ef}$				

Design Resistance — Single Anchor, No Concrete Edge or Spacing Influence

Description	Symbol	Units	M8	M10	M12	M16	M20
Embedment Depth	h_{ef}	mm	47	55	70	86	102
Minimum Concrete Thickness	h_{min}		105	125	150	180	220
Uncracked Concrete							
TENSION	N_{Rd}	kN	**5.1**	**7.1**	**16.9**	**20.3**	**33.8**
SHEAR	V_{Rd}		**11.7**	**18.3**	**25.2**	**46.7**	**73.6**
Cracked Concrete							
TENSION	N_{Rd}	kN	**4.1**	**5.1**	**8.1**	**16.9**	**23.7**
SHEAR	V_{Rd}		**11.7**	**18.3**	**25.2**	**46.7**	**60.2**

1. Concrete strength is 30MPa (cylinder) unreinforced.
2. Tabulated loads are based on no edge distance, no anchor spacing and installed at min. allowable concrete thickness and embedment depth
3. N_{Rd} and V_{Rd} is based on use of a Carbon Steel, Zinc plated bolt, or mechanically galvanised.
4. All design resistances are derived from the product's ETA (European Technical Assessment).

This flyer reflects information available as of January 1, 2020 and may be updated periodically. Please visit our website for current information and limited warranty.