THRU-BOLT™ PRO

M8 M10 M12 M16 M20

COMPLIES WITH AS 5216 FOR POST-INSTALLED FASTENINGS

Seismic C1 & C2 Pending

THRU-BOLT™ PRO STUD ANCHOR

NATIONAL CODE COMPLIANT

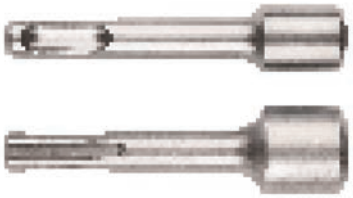
ICCONS® THRU-BOLT™ PRO is a pre-assembled torque controlled mechanical stud anchor, which when tightened draws the tapered end of the bolt into the expander clip expanding it to create expansion forces against the wall of the hole.

- Torque controlled high performance anchor
- Through fixing for fast installation
- Engineered clip for optimum expansion and anti-rotation
- Red ETA embedment depth mark providing ease of installation on site
- Available in zinc and sherardised corrosion resistant finish
- ETA assessed – ETA 20/0900
- Uncracked and cracked concrete assessed
- AS 5216 compliant
- Seismic C1 and C2 assessed (Sherardised pending)
- Fire assessed (zinc and sherardised finish)
- Identification code on bolt head for easy traceability

ZINC CLEAR Part No.	SHERARDISED Part No.	Description	Drill Diameter (mm)	Min. Anchor Embedment (mm)	Max. fixture Thickness (mm)	Head / Socket Size (mm)	ETA Option 20/0900	qty	qty
TB06085		6 x 85mm - no ETA*	6	50	26	10	n/a	100	1000
TB06120		6 x 120mm - no ETA*			61			50	500
TB08080	TB08080G	8 x 80mm	8	55	14	13	Option 1 / Seismic C1	50	500
TB08100	TB08100G	8 x 100mm			34			50	500
TB10065	TB10065G	10 x 65mm - no ETA*	10	45	10	17	n/a	25	250
TB10090	TB10090G	10 x 90mm		68	10		Option 1 / Seismic C2	25	250
TB10120	TB10120G	10 x 120mm			40			25	250
TB12080	TB12080G	12 x 80mm - no ETA*	12	60	5	19	n/a	25	250
TB12100	TB12100G	12 x 100mm		80	4		Option 1 / Seismic C2	25	200
TB12140	TB12140G	12 x 140mm			44			25	150
TB12180	TB12180G	12 x 180mm			84			25	100
TB16105	TB16105G	16 x 105mm - no ETA*	16	80	5	24	n/a	25	100
TB16125	TB16125G	16 x 125mm		97	8		Option 1 / Seismic C1	25	100
TB16140	TB16140G	16 x 140mm			23			25	50
TB16190	TB16190G	16 x 190mm			73			25	50
TB20125	TB20125G	20 x 125mm - no ETA*	20	100	5	30	n/a	10	60
TB20160	TB20160G	20 x 160mm		114	22		Option 1 / Seismic C2	10	40
TB20200	TB20200G	20 x 200mm			62			10	20

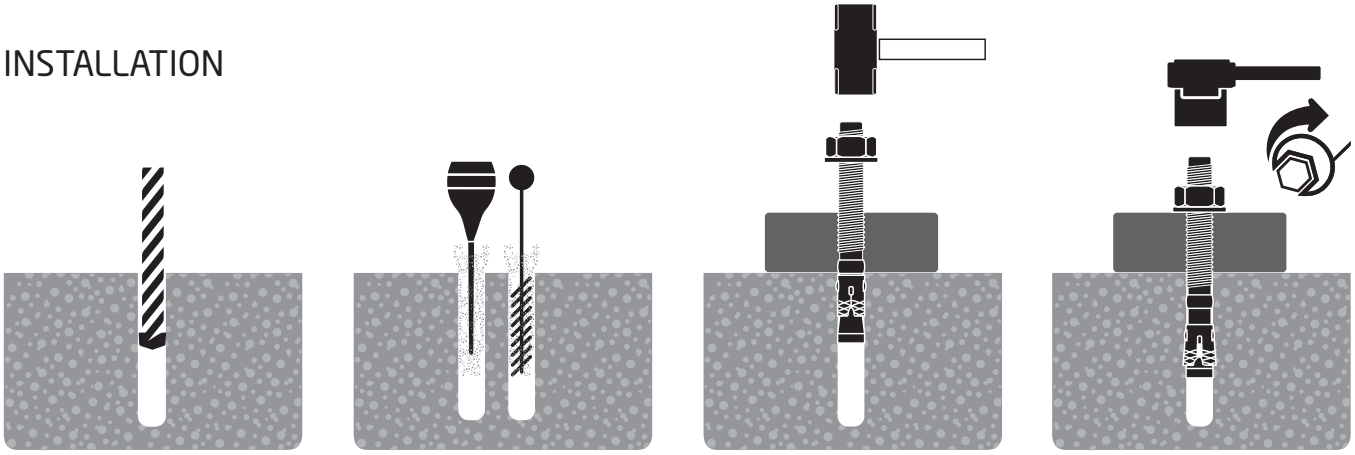
* Refer to ICCONS® TDS 1007.5 for technical information

ETA ASSESSED RANGE

Code	Size	Components	Material
Thru-Bolt™ PRO-G	**M8 - M20** 	Wedgebolt Clip Nut Washer	Carbon steel, sherardized ≥ 40 µm A4 stainless steel DIN 934, sherardized ≥ 40 µm DIN 125 o DIN 9021, sherardized* ≥ 40 µm
Thru-Bolt™ PRO	**M8 - M20** 	Wedgebolt Clip Nut Washer	Carbon steel, galvanized ≥ 5 µm Carbon steel, sherardized ≥ 15 µm DIN 934, galvanized ≥ 5 µm DIN 125 o DIN 9021, galvanized ≥ 5 µm
DOMTA available on request	**M8 - M20** 	Tool for anchor installation using percussion hammer drilling machine	

* Sherardising is a process of galvanisation of ferrous metal surfaces, also called dry galvanising. The process involves heating the steel up to 500°C in a closed rotating drum that contains metallic zinc dust..

INSTALLATION



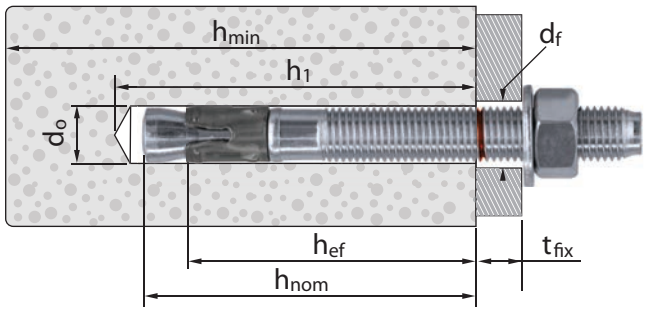
1. **Drilling**
Use drill in hammer mode.
Drill to specified diameter and depth for the required size.

2. **Blow and clean**
Clean the drill hole completely of dust and debris.
Use blow pump and brush

3. **Install**
Insert the anchor in the hole until the red ring mark is flat with the concrete surface.
Use hammer if required; DOMTA tool can be used alternatively.
The installation may be done through the fixture baseplate.

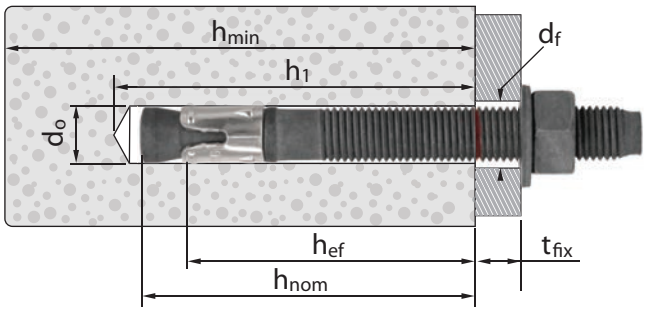
4. **Apply torque**
Apply nominal installation torque using a torque wrench.
Once installed verification of the total length of the anchor can be made through the letter on the head.

INSTALLATION DATA
FOR THRU-BOLT™ PRO - ZINC CLEAR



Thru-Bolt™ PRO ZINC CLEAR Part No	Size	Nominal diameter of drill bit d_o (mm)	Installation Torque T_{inst} (Nm)	Minimum concrete thickness h_{min} (mm)	Drill hole depth h_1 (mm)	Embedment depth h_{nom} (mm)	Effective Depth h_{ef} (mm)	Max. ficture thickness t_{fix} (mm)	Critical spacing S_{cr} (mm)	Critical edge distance C_{cr} (mm)	Spacing min. S_{min} (mm)	Edge distance min. C_{min} (mm)
TB06085	6 X 85	6	5	100	55	50	42	26	Size is not part of ETA assessment and not compliant with AS 5216, for design in accordance with simplified design method please refer to TDS 1007.			
TB06120	6 X 120	6	5	100	55	50	42	61	Size is not part of ETA assessment and not compliant with AS 5216, for design in accordance with simplified design method please refer to TDS 1007.			
TB08080	8 X 80	8	15	100	60	55	48	14	144	72	50	50
TB08100	8 X 100	8	15	100	60	55	48	34	144	72	50	50
TB10065	10 X 65	10	40	100	50	45	37	10	Size is not part of ETA assessment and not compliant with AS 5216, for design in accordance with simplified design method please refer to TDS 1007.			
TB10090	10 X 90	10	40	120	75	68	60	10	180	90	60	60
TB10120	10 X 120	10	40	120	75	68	60	40	180	90	60	60
TB12080	12 X 80	12	60	120	65	60	50	5	Size is not part of ETA assessment and not compliant with AS 5216, for design in accordance with simplified design method please refer to TDS 1007.			
TB12100	12 X 100	12	60	140	85	80	70	4	210	105	70	70
TB12140	12 X 140	12	60	140	85	80	70	44	210	105	70	70
TB12180	12 X 180	12	60	140	85	80	70	84	210	105	70	70
TB16105	16 X 105	16	100	140	85	80	68	5	Size is not part of ETA assessment and not compliant with AS 5216, for design in accordance with simplified design method please refer to TDS 1007.			
TB16125	16 X 125	16	100	170	105	97	85	8	255	128	128	128
TB16140	16 X 140	16	100	170	105	97	85	23	255	128	128	128
TB16190	16 X 190	16	100	170	105	97	85	73	255	128	128	128
TB20125	20 X 125	20	200	160	110	100	86	5	Size is not part of ETA assessment and not compliant with AS 5216, for design in accordance with simplified design method please refer to TDS 1007.			
TB20160	20 X 160	20	200	200	125	114	100	22	300	150	150	150
TB20200	20 X 200	20	200	200	125	114	100	62	300	150	150	150

INSTALLATION DATA
FOR THRU-BOLT™ PRO - SHERARDISED



Thru-Bolt™ PRO-G SHERARDISED Part No	Size	Nominal diameter of drill bit d_o (mm)	Installation Torque T_{inst} (Nm)	Minimum concrete thickness h_{min} (mm)	Drill hole depth h_1 (mm)	Embedment depth h_{nom} (mm)	Effective Depth h_{ef} (mm)	Max. ficture thickness t_{fix} (mm)	Critical spacing S_{cr} (mm)	Critical edge distance C_{cr} (mm)	Spacing min. S_{min} (mm)	Edge distance min. C_{min} (mm)
TB08080G	8 X 80	8	15	100	60	55	48	14	144	72	50	50
TB08100G	8 X 100	8	15	100	60	55	48	34	144	72	50	50
TB10065G	10 X 65	10	40	100	50	45	37	10	Size is not part of ETA assessment and not compliant with AS 5216, for design in accordance with simplified design method please refer to TDS 1007.			
TB10090G	10 X 90	10	40	120	75	68	60	10	180	90	60	60
TB10120G	10 X 120	10	40	120	75	68	60	40	180	90	60	60
TB12080G	12 X 80	12	60	120	65	60	50	5	Size is not part of ETA assessment and not compliant with AS 5216, for design in accordance with simplified design method please refer to TDS 1007.			
TB12100G	12 X 100	12	60	140	85	80	70	4	210	105	70	70
TB12140G	12 X 140	12	60	140	85	80	70	44	210	105	70	70
TB12180G	12 X 180	12	60	140	85	80	70	84	210	105	70	70
TB16105G	16 X 105	16	100	140	85	80	68	5	Size is not part of ETA assessment and not compliant with AS 5216, for design in accordance with simplified design method please refer to TDS 1007.			
TB16125G	16 X 125	16	100	170	105	97	85	8	255	128	128	128
TB16140G	16 X 140	16	100	170	105	97	85	23	255	128	128	128
TB16190G	16 X 190	16	100	170	105	97	85	73	255	128	128	128
TB20125G	20 X 125	20	200	160	110	100	86	5	Size is not part of ETA assessment and not compliant with AS 5216, for design in accordance with simplified design method please refer to TDS 1007.			
TB20160G	20 X 160	20	200	200	125	114	100	22	300	150	150	150
TB20200G	20 X 200	20	200	200	125	114	100	62	300	150	150	150

* Sherardising is a process of galvanisation of ferrous metal surfaces, also called dry galvanising. The process involves heating the steel up to 500°C in a closed rotating drum that contains metallic zinc dust..

Thru-Bolt™ PRO Design Resistance Capacities

Parameters: Qualification based on AS 5216

Concrete: 20 MPa

Conditions: Single anchor, no edge distance, min recommended concrete thickness

Thru-Bolt™ PRO

Design Resistance Capacities - 20 MPa

Diameter	Embedment Depth (mm)	Effective Depth (min.)	Uncracked concrete Tension N_{Rd} (kN)	Cracked concrete Tension N_{Rd} (kN)	Uncracked concrete Shear V_{Rd} (kN)	Cracked concrete Shear V_{Rd} (kN)
M8	55	48	5.0	3.3	8.8	7.6
M10	68	60	10.7	6.0	13.9	13.9
M12	80	70	16.7	10.7	20.2	20.2
M16	97	85	23.3	16.7	37.7	36.0
M20	114	100	32.8	20.0	58.5	45.9

Thru-Bolt™ PRO-G

Design Resistance Capacities - 20 MPa

Diameter	Embedment Depth (mm)	Effective Depth (min.)	Uncracked concrete Tension N_{Rd} (kN)	Cracked concrete Tension N_{Rd} (kN)	Uncracked concrete Shear V_{Rd} (kN)	Cracked concrete Shear V_{Rd} (kN)
M8	55	48	5.0	3.3	8.8	7.6
M10	68	60	10.7	6.0	13.9	13.9
M12	80	70	19.2	10.7	20.2	20.2
M16	97	85	23.3	16.7	37.7	36.0
M20	114	100	32.8	20.0	58.5	45.9

Thru-Bolt™ PRO Seismic Design Resistance Capacities

Parameters: Qualification based on AS 5216 / EN 1992:4

Concrete: 20 MPa

Conditions: Single anchor, no edge distance, min recommended concrete thickness

Thru-Bolt™ PRO

C1 Seismic Design Resistance Capacities - (a_{gap} = 1.0)

Diameter	Embed. Depth (mm)	Effective Depth (min.)	Tension N_{Rd} (kN)	Shear V_{Rd} (kN)
M8	55	48	3.3	6.2
M10	68	60	5.9	9.8
M12	80	70	10.7	14.2
M16	97	85	15.3	26.4
M20	114	100	19.5	39.0

Thru-Bolt™ PRO

C2 Seismic Design Resistance Capacities - (a_{gap} = 1.0)

Diameter	Embed. Depth (mm)	Effective Depth (min.)	Tension N_{Rd} (kN)	Shear V_{Rd} (kN)
M10	68	60	2.6	9.8
M12	80	70	6.1	14.2
M20	114	100	14.0	39.0

NOTE: Performance data in the above tables has been derived using the relevant published ETA (ETA 20/0900). For detailed calculations please download the ICCONS Software – DesignFix @ www.iccons.com.au/software/anchor-design-software

Anchoring

Adhesive

PURE EPOXY GEN 3

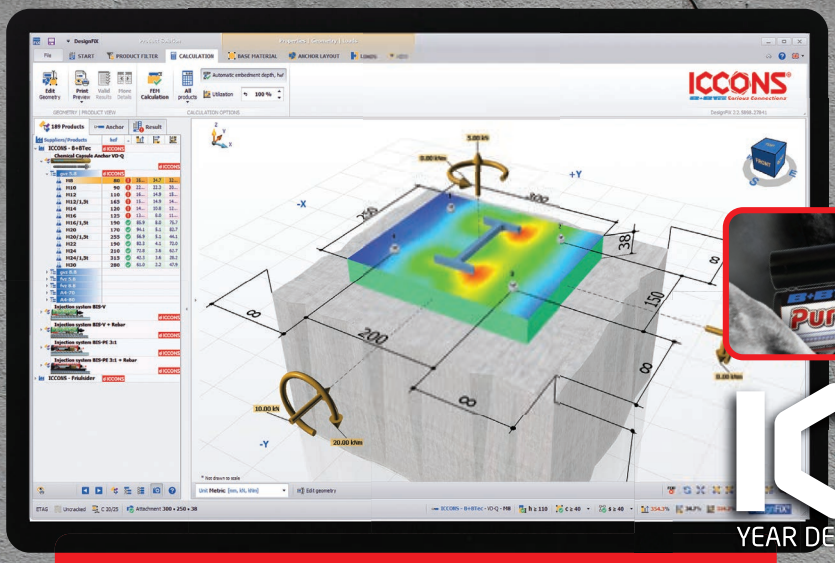
ICCONS®

DESIGNFIX®: anchor design made easy

- An innovative 3D visual user interface, utilizing EN 1992-4 design methodology and suitable for design in accordance with AS 5216.
- Seismic design under earthquake loads according to EN 1992-4, TR 045, TR 049
- Finite element analysis steel baseplate design

ICCONS DesignFiX® is a simple, intuitive and free to download (registration required) anchor design program for design engineers, project managers, site engineers and end users. Complex mechanical or chemical heavy duty anchor arrangements can be calculated in minutes.

INCLUDES THE NEW BIS PE GEN3 PURE EPOXY WITH 100 year design service life assessed in accordance with EAD 330499-01-0601



FREE DOWNLOAD www.iccons.com.au/software/anchor-design-software

Optimum BIS Injection System anchorage depth

When selecting a BIS Adhesive Injection System, ICCONS DesignFiX allows for the automatic calculation of the most effective anchorage depth, taking into consideration the minimal and maximum values of the ETA.

100+ YEAR DESIGN LIFE

Input freedom & 3D user interface

ICCONS DesignFiX offers complete freedom to select an anchor pattern and base plate configuration, as well as the position and direction of load combinations. Changes are made directly into the 3D user interface.

Anchor type comparison

ICCONS DesignFiX displays the usability of the various anchor types (according to EN 1992-4) including the values for each load type. This allows you to compare the calculation results of the different anchor types in a single easy to read panel. Design results suitable for use in accordance with AS 5216:2018.

Calculate base plate thickness

The integrated FEM-Calculation Method (Finite Element Method) in ICCONS DesignFiX allows you to calculate the base plate thickness based upon the stresses in the base plate in combination with the base plate configuration.

NCC™ NATIONAL CODE COMPLIANT · ETA · C1 SEISMIC · C2 SEISMIC · DONE AND DUSTLESS · AEFAC Australian Engineered Fasteners and Anchors Council SUPPORTING MEMBER

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