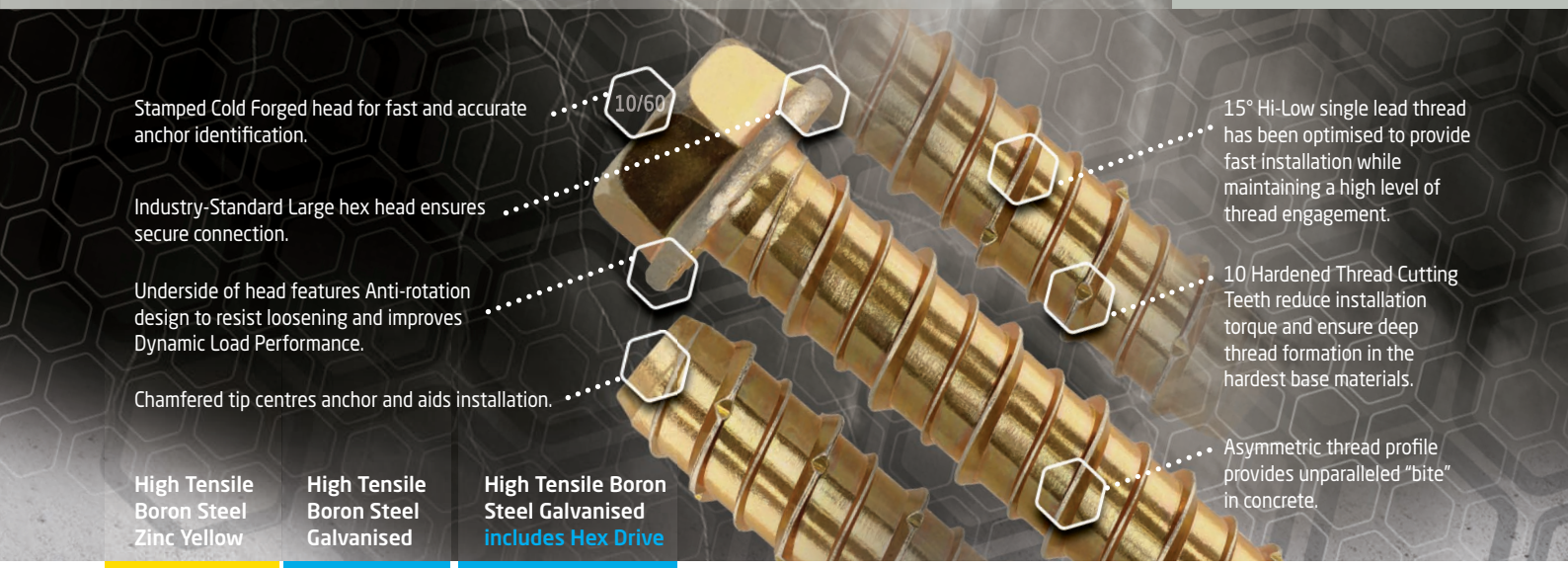
THUNDERBOLT® PRO

HIGH PERFORMANCE SCREW-BOLT HEX, CSK & EYEBOLT HEAD STYLES

ICCONS® Serious Connections®

TDS | 1015.2 (NZ)



High Tensile Boron Steel Zinc Yellow

ZINC INTERNAL

High Tensile Boron Steel Galvanised

GAL EXTERNAL

High Tensile Boron Steel Galvanised includes Hex Drive

GAL EXTERNAL

ICCONS® Thunderbolt® PRO is the latest high tensile Screw-in, Self-tapping concrete and masonry anchor for use in a wide range of materials used in the construction Industry. Installation is quick and easy, simply drill your hole and screw in the anchor.

The ICCONS Thunderbolt®PRO is available in hex head, countersunk head and eyebolt head styles providing greater flexibility in use.

ICCONS® Thunderbolt® PRO achieves the Highest Loads while generating Low Expansion forces which can make it a great alternative to adhesive anchors. The Thunderbolt® PRO is also completely removable making it ideal for temporary applications. Unlike mechanical expansion anchors, the Thunderbolt® PRO keys into the base material for the entire depth and diameter of the hole, not just at the base of the hole. This reduces high energy forces within the concrete allowing close anchor spacing and near to edge anchor locations. 10 sharp thread forming teeth ensure the most secure connection in hard base materials. The Thunderbolt® PRO is a truly versatile anchor, as it can be installed in a whole range of base materials such as Concrete, Block, Brick, Timber, Marble, and Stone, just to name a few.

The highly engineered design of ICCONS® Thunderbolt® PRO is the result of extensive testing and provides market leading load performance. ICCONS® Thunderbolt® PRO is a one piece, fast, efficient and cost effective fix for any job.

Part No.	Part No.	Part No.	Description	ø mm	mm	mm	mm	qty	qty
		SXTBCS06050G	6 x 50mm	6	10	16	6	100	1200
		SXTBCS06075G	6 x 75mm					100	600
		SXTBCS06075G	6 x 100mm					100	600
SXTB08050	SXTB08050G		8 x 50mm	8	13	21	8	100	600
SXTB08060	SXTB08060G	SXTBCS08060G	8 x 60mm					100	600
SXTB08075	SXTB08075G	SXTBCS08075G	8 x 75mm					100	500
SXTB08100	SXTB08100G	SXTBCS08100G	8 x 100mm					100	400
SXTB10060	SXTB10060G		10 x 60mm	10	17	25	9	50	250
SXTB10075	SXTB10075G		10 x 75mm					50	250
		SXTBCS10075G	10 X 75mm					50	300
SXTB10100	SXTB10100G		10 x 100mm					50	250
		SXTBCS10100G	10 X 100mm					50	300
SXTB10120	SXTB10120G		10 x 120mm					50	250
SXTB12075	SXTB12075G		12 x 75mm	12	19	28	10	50	150
		SXTBCS12075G	12 X 75mm					50	200
SXTB12100	SXTB12100G	SXTBCS12100G	12 x 100mm					50	150
SXTB12120	SXTB12120G		12 x 120mm					25	125
SXTB12150	SXTB12150G		12 x 150mm					25	75
		SXTBCS12150G	12 X 150mm					20	120
SXTB16100	SXTB16100G		16 x 100mm	16	24			15	60
SXTB16150	SXTB16150G		16 x 150mm					15	60

Information contained in this technical document is based on testing by the manufacturer and should be reviewed and approved by a design professional responsible for the given application. For safety critical fastening applications designed in accordance with SA TS 101:2015, AS5216:2018 please refer to the Iccons website for a complete suite of compliant post-installed chemical and mechanical anchoring products.

High Tensile Boron Steel Galvanised

Loading Direction

GAL EXTERNAL

Part No.	Description	mm	mm	mm	mm	RECOMMENDED LOAD Tension or Shear kg	qty	qty
SXTBEYE06050G	6 x 50mm	6	13	45	50	30	50	800
SXTBEYE08055G	8 x 55mm	8	14	55	55	60	50	300
SXTBEYE10065G	10 x 65mm	10	17	60	65	85	50	300
SXTBEYE12075G	12 x 75mm	12	22	60	75	140	20	120

Note: Thunderbolt®PRO Eyebolt Screwbolt is designed for use in non-safety critical applications only. **The Thunderbolt®PRO Eyebolt Screwbolt is NOT designed for use in Fall Arrest Systems or as a lifting anchor.**

RECOMMENDED LOADS

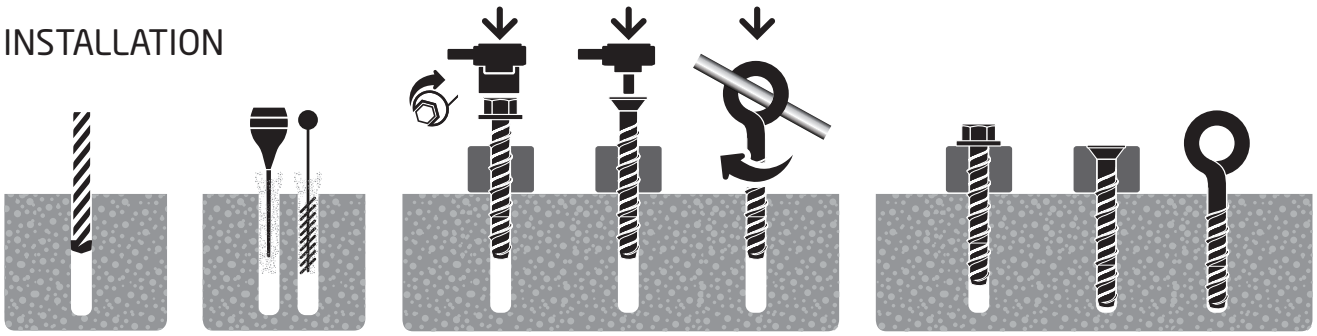
			N_{rec}				V_{rec}			
			TENSION				SHEAR			
			CONCRETE			STEEL	CONCRETE			STEEL
Anchor Size (mm)	Drill Size (mm)	Embedment Depth (mm)	20MPa (kN)	32MPa (kN)	40MPa (kN)	Heat Treated Carbon Steel (kN)	20MPa (kN)	32MPa (kN)	40MPa (kN)	Heat Treated Carbon Steel (kN)
6	6	30	**2.2**	**2.7**	**3.1**	8.5	**2.8**	**3.5**	**3.9**	5.3
		65	**4.7**	**5.7**	**6.6**		**8.8**	**11.2**	**12.5**	
		100	**7.2**	**8.5**	**10.2**		**16.8**	**21.3**	**23.8**	
8	8	40	**3.8**	**4.7**	**5.4**	17.0	**4.3**	**5.4**	**6.0**	10.5
		70	**6.7**	**8.2**	**9.5**		**9.9**	**12.5**	**13.9**	
		100	**9.6**	**11.8**	**13.6**		**16.8**	**21.3**	**23.8**	
10	10	50	**5.8**	**7.0**	**8.1**	26.9	**5.9**	**7.6**	**8.4**	16.7
		75	**8.7**	**10.6**	**12.2**		**10.9**	**13.8**	**15.5**	
		100	**11.5**	**14.0**	**16.2**		**16.8**	**21.3**	**23.8**	
12	12	60	**7.8**	**9.9**	**11.1**	39.4	**7.8**	**9.9**	**11.1**	24.5
		80	**11.6**	**14.1**	**16.3**		**12.0**	**15.2**	**17.0**	
		100	**14.4**	**17.6**	**20.4**		**16.8**	**21.3**	**23.8**	
16	16	70	**9.8**	**12.4**	**13.9**	66.9	**9.9**	**12.5**	**13.9**	41.5
		85	**13.2**	**16.5**	**18.7**		**13.2**	**16.7**	**18.7**	
		100	**15.9**	**19.4**	**22.4**		**16.8**	**21.3**	**23.8**	

Note: The designer shall take into consideration both Concrete and Steel load capacities. Published load capacities incorporate a safety factor of 3 for concrete and 2.5 for steel. The above information has been derived from laboratory test results using NATA calibrated equiment and all loads are representative of a single anchor installed in a hammer drilled, dry hole remote from an edge. Please contact ICCONS® engineering department for specific design applications, engineering@iccons.com.au. **Limit State Design -** Multiply the above loads by 1.8 (Concrete) and 2 (Steel) to determine the Limit State Design capacities.

MATERIAL SPECIFICATIONS

Anchor Part	Zinc Plated (Yellow)	Mechanically Galvanised
Anchor body	Heat Treated 10B21	Heat Treated 10B21
Plating	Electroplated Zinc Coating thickness 5 microns (min.)	Galvanised Coating thickness 45 microns (min.)

INSTALLATION



With the correct diameter drill bit, drill a hole to the depth of at least one diameter of the anchor deeper than the required embedment.

Clean dust and other material from the hole.

Install with either a socket or cordless impact driver. Apply pressure against the fixing and rotate to engage the first thread. Continue to tighten the anchor until flanged head is firmly seated against fixture.

Installation complete!

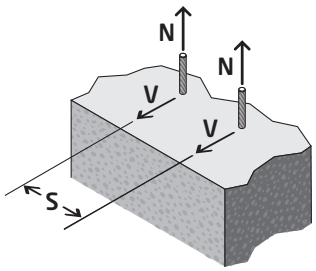
INTRODUCTION
The Thunderbolt® PRO screwbolt anchor functions with little expansionary forces and facilitates installations to be made closer to each other or to a concrete slab edge.

ICCONS™ published load data is based on the required spacing and edge distances needed to achieve these loads. Load values however should be reduced when anchors are installed at decreased edge or spacing distances to those published.

ICCONS™ Spacing and Edge Distance Tables outline cumulative reduction multiplying factors required to be applied to the published load should there be a requirement to install anchors at decreased edge or spacing distances.

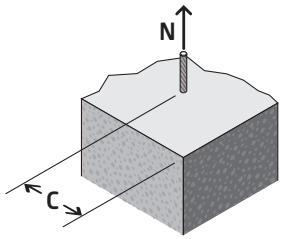
USING THE REDUCTION FACTORS

SPACING – TENSION & SHEAR (S)



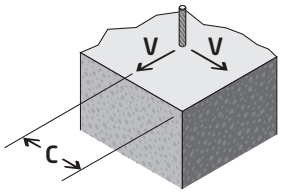
To achieve published tension and shear loads the anchors should be installed at least 12 x the anchor diameter between each other.
If spacing between anchors is closer than 12 x the anchor diameter apply appropriate reduction factor as outlined in the SPACING TABLE to the published load to ascertain the reduced load.

EDGE DISTANCE – TENSION (C)



To achieve published tension loads the anchors should be installed at least 8 x the anchor diameter from a concrete edge.
If edge distance is closer than 8 x the anchor diameter apply the appropriate reduction factor as outlined in the EDGE DISTANCE TENSION TABLE to the published load to ascertain the reduced load.

EDGE DISTANCE – SHEAR (C)



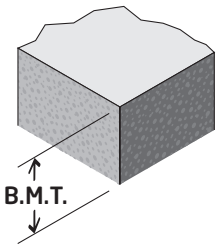
To achieve published shear loads the anchors should be installed at least 12 x the anchor diameter from a concrete edge.
If edge distance is closer than 12 x the anchor diameter apply the appropriate reduction factor as outlined in the EDGE DISTANCE SHEAR TABLE to the published load to ascertain the reduced load.

Reduction Factors

Diameter	Anchor Size (mm) 6	8	10	12	16	REDUCTION FACTORS SPACING (S) TENSION	SHEAR	EDGE DISTANCE (C) TENSION	SHEAR
(d)	Anchor Spacing (mm)						S_t	S_s	C_t C_s
3(d)	18	24	30	36	48			**0.70**	**0.15**
4(d)	24	32	40	48	64	**0.50**	**0.75**	**0.76**	**0.24**
5(d)	30	40	50	60	80	**0.56**	**0.78**	**0.82**	**0.34**
6(d)	36	48	60	72	96	**0.63**	**0.81**	**0.88**	**0.43**
7(d)	42	56	70	84	112	**0.69**	**0.84**	**0.94**	**0.53**
8(d)	48	64	80	96	128	**0.75**	**0.88**	**1.00**	**0.62**
9(d)	54	72	90	108	144	**0.81**	**0.91**		**0.72**
10(d)	60	80	100	120	160	**0.88**	**0.94**		**0.81**
11(d)	66	88	110	132	176	**0.94**	**0.97**		**0.91**
12(d)	72	96	120	144	192	**1.00**	**1.00**		**1.00**

Base Material Thickness

Base material thickness should be 1.5 x $h_{embed.}$ or a minimum of 75mm, always use the greater of the two values.



Combined Tension & Shear Loading

For combined tension and shear load applications the following equations shall be satisfied;

$N_{applied} / N_{rec} \leq 1$ $V_{applied} / V_{rec} \leq 1$ $(N_{applied} / N_{rec}) + (V_{applied} / V_{rec}) \leq 1.2$

Where:

$N_{applied}$ = Applied Tension Load
N_{rec} = Recommended Tension Load
$V_{applied}$ = Applied Shear Load
V_{rec} = Recommended Shear Load

SESTO FASTENERS

BPIR PRODUCT FORM

ICCONS® Serious Connections®

Building Product Information Sheet

Class 1

Product Name:

ThunderBolt®Pro Countersunk ETA

Date of Report:

08 / 11 / 2023

Product Line:

ICCONS ThunderBolt®Pro Screw-Bolt Anchors

Product Description and its intended use:

ICCONS Thunderbolt®Pro Countersunk Head is the latest high tensile screw-in, self-tapping concrete and masonry anchor for use in a wide range of materials used in the construction Industry. Installation is quick and easy, simply drill, clean the hole and screw in the anchor. The Thunderbolt Pro is the most complete screw bolt range on the market with the entire range equipped with ETA assessments for cracked concrete, fire performance and seismic ratings (please see technical data for specification requirements). Ranging from 5mm to 18mm in various lengths, ICCONS new and improved Thunderbolt Pro is your anchor for all applications from racking and shelving to demanding structural steel applications.

Key technical specifications:
- Product type: Screw Anchor
- Finish options: High Tensile Steel - Zinc Yellow, High Tensile Steel - Galvanised Nautilus C, Stainless Steel.
- Head style: Hex head, Countersunk head
- Base material: Concrete, cracked concrete, stone, solid brick, hollow brick, aerated concrete.
- Special features: Removable, European Assessment ETA, Fire Rated.
- Load performance: Medium loads, light loads.
- Drill diameter, drill depth etc varies based on part number. Refer to document ' ThunderBolt®PRO Catalogue', available in the link below:
https://sestofasteners.co.nz/products/thunderbolt%C2%AEpro-hex-head?_pos=1&_sid=2d18c2370&_ss=r

Product Identifier

Thunderbolt PRO-SXTB Countersunk Head

Place of Manufacture:

Overseas

Manufacturer:

ICCONS PTY LTD

Importer:

Sesto Fasteners Limited

Address:	5e Piermark Drive Rosedale, Auckland
Postcode:	0632
Website:	www.sestofasteners.co.nz
Email:	orders@sestofasteners.co.nz
Phone:	+64 94158564
NZBN:	9429041704103

Relevant Building Code Clauses:

- B1 Structure: Performance clauses B1.1, B1.2, B1.3.1, B1.3.2, B1.3.3, B1.3.4
- B2 Durability: Performance clauses B2.2, B2.3.1(a), B2.3.2
- C6 Structural Stability (Fire Safety): Performance clauses C6.1, C6.2
- F2 Hazardous Building Materials: Performance clause F2.3.1

Statement on how the building product is expected to contribute to compliance:

- B1 Structure: clauses B1.1, B1.2, B1.3.1, B1.3.2, B1.3.3, B1.3.4:

- ICCONS Thunderbolt Pro-SXTB bolts comply with standard AS 5216:2021 (Design of post-installed and cast-in fastenings in concrete).
- ETA assessed for cracked concrete, fire performance and C1/C2 seismic ratings (ETA-20/0902, of 03/08/2021). Assessment options vary based on part number. Refer to document 'ETA - C1 & C2 Approval' and ' ThunderBolt®PRO Catalogue' to confirm the specific assessment options available per bolt:
https://sestofasteners.co.nz/products/thunderbolt%C2%AEpro-hex-head?_pos=1&_sid=6fa3d2993&_ss=r
- ICCONS Thunderbolt Pro-SXTB is compliant with the requirements referenced in the National Construction Code (NCC).
- CE certified.
- Suitable for medium loads.
- Suitable for overhead applications.
- Available on ICCONS Design Pro AS 5216:2021 compliant software.
- Performance data values are available, derived from the product ETA (ETA 20/0902) and in accordance with AS 5216:2021. Data is available across a range of parameters and conditions, including qualification based on ETA 20/0902 - Option 1 and ETA 20/901 redundant non-structural systems (RNSS). Refer to page 16, document 'ThunderBolt®PRO Catalogue' and ETA 20/0902 for more details.

- B2 Durability: Performance clauses B2.2

- Materials specifications:
  - Zinc: Carbon Steel Zinc Coating ≥ 5 µm plus Red Tip.
  - Galvanised: Carbon Steel NAUTILUS C Coating plus Red Tip.
  - Stainless Steel: Shaft and Head - 316 (A4) & Tip - Hardened Carbon Steel.
- Corrosion resistant Nautilus® C coating available. Nautilus® C corrosion resistant coating is a multi layered corrosion resistant coating designed for indoor applications as well as outdoor applications based on urban and industrial atmospheres, moderate sulfur dioxide pollution and coastal areas with low salinity. This is typically covered in EN ISO 12944-2, corrosivity category environment C3 and durability range HIGH according to EN
- Screwbolt design provides no expansion, ideal for close to edge applications.
- Suitable for installation with impact drivers.
- Removable, tamperproof options available.
- Optimum high-performance concrete and masonry screw-bolt anchor
- Countersunk head design with "lightning bolt" locking serrations for a secure fix.
- Also available in CSK, internal thread, external thread, pan and truss head designs.
- Stamped head markings for easy identification and traceability.

- C6 Structural Stability (Fire Safety): Performance clauses C6.1, C6.2:

- ICCONS Thunderbolt Pro-SXTB bolts have been ETA assessed for fire performance (ETA-120/0902). Refer to document 'ETA - C1 & C2 Approval' in link below for testing data (Annex C8 and C9):
https://sestofasteners.co.nz/collections/screwbolts/products/screwbolt-hex-galv?variant=37578216538281

- F2 Hazardous Building Materials: Performance clause F2.3.1

- ICCONS Thunderbolt Pro-SXTB bolts are safe when handled.

Limitations on the use of the building product:

- Performance data is derived from ETA 20/0902, based on a single anchor with no edge or spacing influence. For detailed calculations involving multiple anchors please download the ICCONS anchor software program (ICCONS Design PRO) for assistance. This download is available via the ICCONS website www.iccons.com.au.
- Use the correct diameter drill bit, drill to the required anchor embedment depth plus at least one anchor diameter deeper.
- Ensure hole is drilled perpendicular to the concrete surface with maximum deviation of up to 5° degrees. Failure to do so may cause anchor breakage
- Clean dust and other material from the hole before installation.
- DO NOT use a worn drill bit outside of drill bit tolerance specification. Worn Drill bits will affect the anchor installation either during installation or post installation.
- When installing with an Impact screw gun do not exceed the recommended torque specifications, failure to comply may result in anchor breakage.
- When securing the screwbolt, do not over tighten and exceed the recommended clamping torque requirements, failure to comply may result in anchor breakage.
- ICCONS Thunderbolt PRO bolts cut a thread in the base material drilled hole during installation and do not require an installation torque setting to ensure proper installation. A clamping torque is recommended for the ICCONS Thunderbolt PRO to ensure that the fixture being fastened is tight against the base material surface. Refer to the document 'Install Torque Specs' in the link below for maximum torque guide values:
https://sestofasteners.co.nz/collections/screwbolts/products/screwbolt-hex-galv?variant=37578216538281
- Impact Screw Gun Torque specification: Always refer to specific product torque specifications prior to installation. This can be found in ICCONS® Technical Data Sheets, ICCONS® Product Guide or on the individual product labels. Link below:
https://www.iccons.com.au/support/downloads?type=tech

Design requirements that would support the use of the building product:

ICCONS ThunderBolt®Pro SXTB bolts have been designed for use in the following applications:
- Structural fixings in cracked and uncracked concrete
- Tunnel fit out
- Cable tray support systems
- Seismic bracing of MEP systems
- Fastening steel strut channel and support straps for MEP
- Facade structures
- Guard rails
- Bollards and protective barriers
- Machinery and plant equipment
- Stadium and theatre seating
- Acoustic barriers
- Balustrades and hand rails
- Scaffolding ties
- Formwork
- Plumbing and fire services
- Steel frame construction
- Timber frame construction
- Glazing, windows and storefronts
- Racking and shelving
- Fixing wood structures in concrete

Features that support use of the building product:
- Optimum high-performance concrete and masonry screw bolt anchor
- AS 5216 compliant
- ETA assessed for cracked concrete and fire performance
- Countersunk head design with "lightning bolt" locking serrations for a secure fix
- Also available in Hex Head and Internal thread head designs
- Stamped head markings for easy identification and traceability
- Zinc, corrosion resistant Nautilus C and stainless steel coating options
- Fast installation at reduced torque
- No expansion, ideal for close to edge applications
- Suitable for installation with impact drivers
- Removable
- Available on ICCONS Designfix software.

Installation requirements:

Refer to document 'How To Install' for an illustrated guide, and 'Install Torque Specs', available in the link below:
https://sestofasteners.co.nz/products/thunderbolt%C2%AEpro-hex-head?_pos=1&_sid=6fa3d2993&_ss=r

Refer to page 9, document ' ThunderBolt®PRO Catalogue' for in depth installation data, available in the link above.

Installation steps:
1. Using the correct diameter drill bit, drill a hole to the required anchor embedment depth plus at least one anchor diameter deeper. (This ensures residual dust doesn't interfere with the anchor installation).
- Caution: Ensure hole is drilled perpendicular to the concrete surface with maximum deviation of up to 5 degrees. Failure to do so may cause anchor breakage.
2. Clean dust and other material from the hole.
- Caution: DO NOT use a worn drill bit outside of drill bit tolerance specification. Worn Drill bits will affect the anchor installation either during installation or post installation.
3. Screw in the anchor using a torque wrench or impact screw gun. Apply pressure against the fixing and rotate to engage the first thread. Continue to tighten the anchor until flanged head is firmly seated against fixture.
- Caution: When installing with an impact screw gun do not exceed the recommended torque specifications, failure to comply may result in anchor breakage.
4. Installation complete!
- Caution: Do Not over tighten and exceed the recommended clamping torque requirements, failure to comply may result in anchor breakage.

Impact Screw Gun Torque Specification:
Important: Always refer to specific product torque specifications prior to installation. This can be found in ICCONS Technical Data Sheets, ICCONS Product Guide or on the individual product labels.

Maintenance requirements:

N/A. no ongoing maintenance required.

Is the building product subject to warning or ban under section 26?:

No