

16mm THUNDERBOLT® PRO HEX HEAD

FEATURES & BENEFITS

- Optimum high-performance concrete and masonry screwbolt anchor
- Flanged hex head design with "lightning bolt" locking serrations for a secure fix
- Stamped head markings for easy identification and traceability
- Zinc and corrosion resistant Nautilus® C coating options
- Fast installation at reduced torque
- No expansion, ideal for close to edge applications
- Suitable for installation with impact drivers
- Removable

APPLICATIONS

- Structural fixings in cracked and uncracked concrete.
- Glazing, windows and storefronts
- Racking and shelving
- Attaching railings, handrails and balustrades
- Fixings wood structures in concrete.

ZINC YELLOW Part No.	NAUTILUS® C Part No.	Description	Drill Diameter (mm)	Min. Anchor Embedment (mm)	Drill Depth (mm)	Clearance Hole in Fixture (mm)	Max. Fixture Thickness (mm)	Head / Socket Size (mm)	*Max. Impact Tool Torque T _{max} (Nm)	ETA Option	qty	qty
SXTB16100	SXTB16100G	16 x 100mm	16	90	110	19	10	24	600	Pending	15	90
SXTB16150	SXTB16150G	16 x 150mm					60				15	60

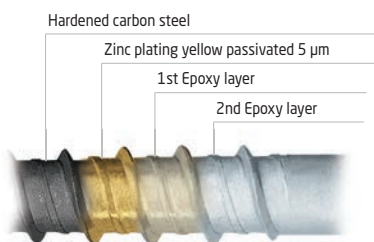
* Max. power output of impact screw gun
Excessive torque during installation may damage the anchor. Training, expertise and good judgement is required. Always adhere to anchor installation max. impact torque tool settings.

ETA assessment pending

RANGE IDENTIFICATION

Code	Size	Description	Material
SXTB _____	Ø16	Hexagonal head with flange screw anchor	Carbon Steel Zinc Yellow Coating ≥ 5 µm plus Red Tip
SXTB _____ G	Ø16	Hexagonal head with flange screw anchor	Carbon Steel NAUTILUS®C Coating plus Red Tip

ICCONS Nautilus® C corrosion resistant coating



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 ISO 12944-1. Under these conditions the Nautilus® C coating offers a typical minimum life expectancy of between 15 to 25 yrs. This information is based on testing in accordance with EN ISO 12944.6 and provides average life expectancy data for typical applications. The final decision on coating suitability should be made by the customer/design professional responsible for the application and based on local specific environmental conditions.

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 AS 5216:2021, please refer to the ICCONS website for a complete suite of compliant post-installed chemical and mechanical anchoring products.



THUNDERBOLT® PRO Performance

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

Recommended Load Capacities

Anchor Size (mm)	Drill Size (mm)	Embedment Depth (mm)	N _{rec}				V _{rec}			
			TENSION				SHEAR			
			CONCRETE		STEEL		CONCRETE		STEEL	
			20MPa (kN)	32MPa (kN)	40MPa (kN)	Heat Treated Carbon Steel (kN)	20MPa (kN)	32MPa (kN)	40MPa (kN)	Heat Treated Carbon Steel (kN)
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 equipment 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.

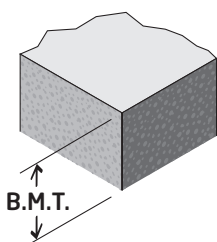
Limit State Design - Multiply the above loads by 1.8 (Concrete) and 2 (Steel) to determine the Limit State Design capacities.

Reduction Factors

Diameter (d)	Anchor Size (mm) 16	REDUCTION FACTORS			
		SPACING (S)		EDGE DISTANCE (C)	
		TENSION	SHEAR	TENSION	SHEAR
	Anchor Spacing (mm)		S _t	S _s	C _t C _s
3(d)	48			0.70	0.15
4(d)	64	0.50	0.75	0.76	0.24
5(d)	80	0.56	0.78	0.82	0.34
6(d)	96	0.63	0.81	0.88	0.43
7(d)	112	0.69	0.84	0.94	0.53
8(d)	128	0.75	0.88	1.00	0.62
9(d)	144	0.81	0.91		0.72
10(d)	160	0.88	0.94		0.81
11(d)	176	0.94	0.97		0.91
12(d)	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;

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

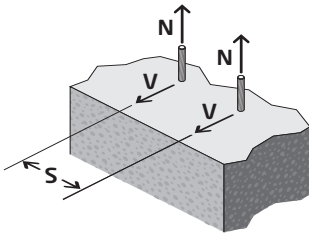
Where:

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



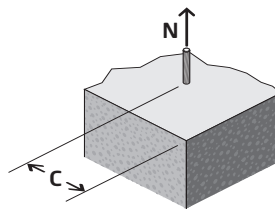
USING THE REDUCTION FACTORS

SPACING - TENSION & SHEAR (S)



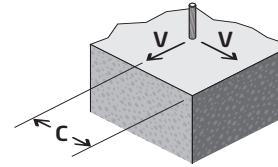
To achieve published tension and shear loads the anchors should be installed at least 12 x the anchor diameter between each other. If spacing between anchors is closer than 12 x the anchor diameter apply appropriate reduction factor as outlined in the SPACING TABLE to the published load to ascertain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

EDGE DISTANCE - TENSION (C)



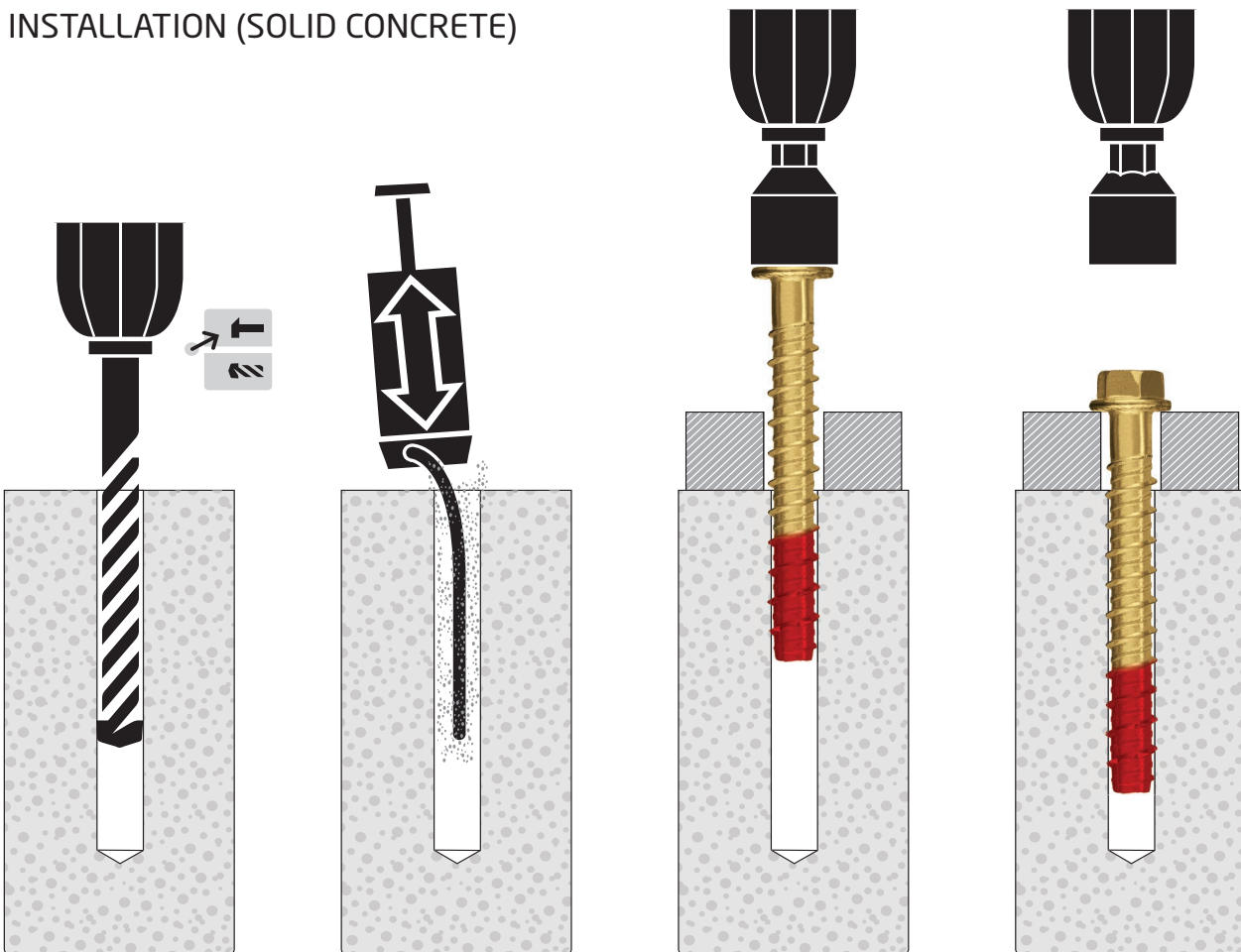
To achieve published tension loads the anchors should be installed at least 8 x the anchor diameter from a concrete edge. If edge distance is closer than 8 x the anchor diameter apply the appropriate reduction factor as outlined in the EDGE DISTANCE TENSION TABLE to the published load to ascertain the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

INSTALLATION (SOLID CONCRETE)



1. Drilling

Check the concrete is well compacted and without significant porosity. Suitable for dry, wet and flooded holes. Use drill in hammer mode. Drill according to specified depths in previous tables.

2. Blow and clean

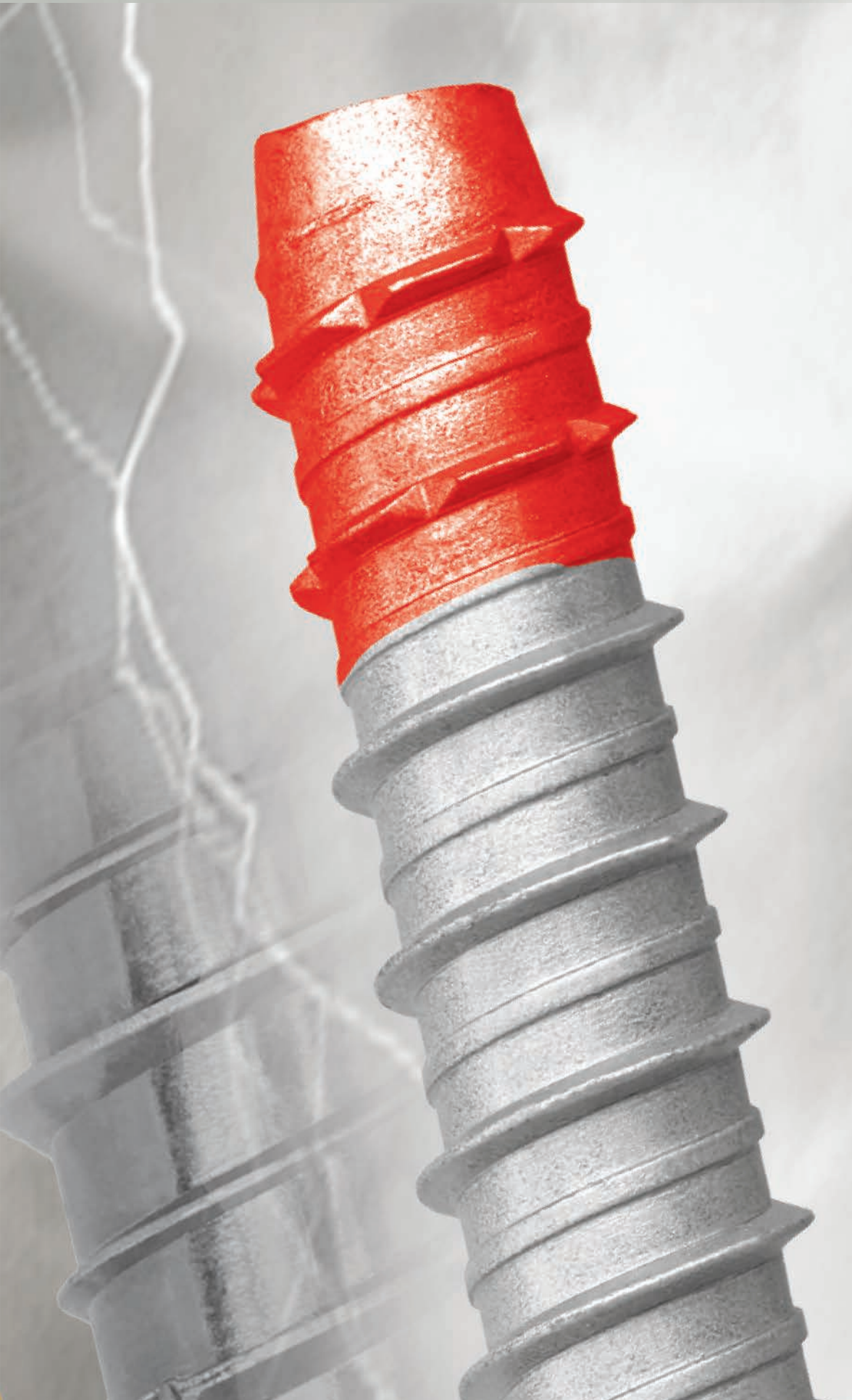
Clean the hole from dust and concrete remains. Use blow pump and brush.

3. Install

Select a powered impact wrench or a torque wrench that does not exceed the maximum torque indicated in previous tables. Attach an appropriate size hex socket to the wrench. Mount the screw anchor head in the socket.

4. Apply torque

Drive the anchor with an impact driver or a torque wrench through the fixture and into the hole until the anchor head washer comes in contact with the fixture. The anchor must be snug after installation. Do not spin the hex socket off the anchor to disengage.



ICCONS® PTY LTD

VICTORIA - HEAD OFFICE
383 Frankston Dandenong Rd,
Dandenong South,
Vic, 3175
P: **03 9706 4344**

NSW Branch
Unit A, 17 Seddon Street,
Bankstown,
New South Wales, 2200
P: **02 9791 6869**

QLD Branch
42-44 Nealdon Dr
Meadowbrook,
Queensland, 4131
P: **07 3200 6455**

S.A Branch
29-31 Weaver Street,
Edwardstown,
South Australia 5039
P: **08 8234 5535**

W.A. Branch
90 Christable Way,
Landsdale,
Western Australia, 6065
P: **08 6305 0008**

NORTHERN TERRITORY
Unit 1, 14 Menmuir Street,
Winnellie,
Northern Territory 0820
P: **08 8947 2758**

NEW ZEALAND

Sesto Fasteners
5E Piermark Road,
Albany, Auckland,
New Zealand 0630
P: **+64 9415 8564**
E: sestofasteners@gmail.com

THAILAND

ICCONS (Thailand) Co. Ltd.
55 Phetkasem 62/3, Bangkhuae,
Bangkok 0160
P: **+ 66 2 801 0764**
F: **+ 66 2 801 0764**
M: **+ 66 8 1 710 8745**
E: icconsthailand@hotmail.com