

THUNDERBOLT[®] PRO



ICCONS[®]
Serious Connections[®]

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

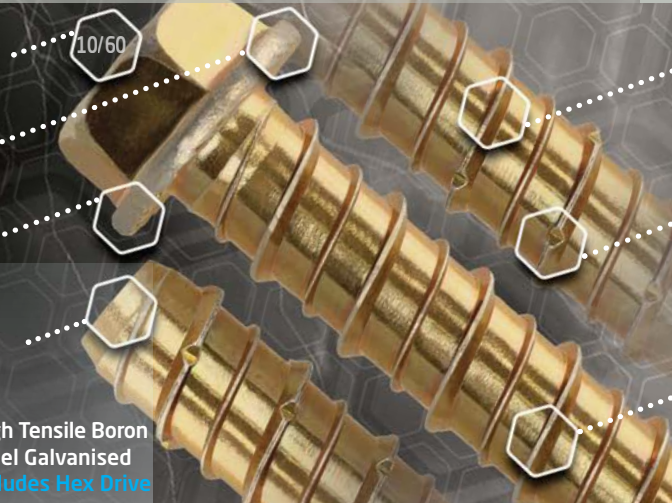
TDS | 1015.3 (NZ)

Stamped Cold Forged head for fast and accurate anchor identification.

Industry-Standard Large hex head ensures secure connection.

Underside of head features Anti-rotation design to resist loosening and improves Dynamic Load Performance.

Chamfered tip centres anchor and aids installation.



15° Hi-Low single lead thread has been optimised to provide fast installation while maintaining a high level of thread engagement.

10 Hardened Thread Cutting Teeth reduce installation torque and ensure deep thread formation in the hardest base materials.

Asymmetric thread profile provides unparalleled "bite" in concrete.

High Tensile Boron Steel Zinc Yellow

High Tensile Boron Steel Galvanised

High Tensile Boron Steel Galvanised includes Hex Drive



ZINC INTERNAL



GAL EXTERNAL



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	mm	mm	mm	mm	qty	qty	ETA Approved
		SXTBCS06050G	6 x 50mm	6	10	16	6	100	1200	
		SXTBCS06075G	6 x 75mm					100	600	
		SXTMCS06100G-A	6 x 100mm NEW					100	600	✓
		SXTM06120G-A	6 x 120mm NEW					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	
		SXTM08130G-A	8 x 130mm NEW					50	250	✓
		SXB08140GWHITE	8 x 140mm NEW					50	250	
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	
			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.

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PERFORMANCE | RECOMMENDED LOADS

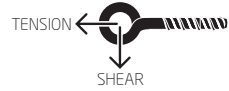
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High Tensile Boron Steel Galvanised



GAL EXTERNAL

Loading Direction



Part No.	Description	mm	mm	mm	mm	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

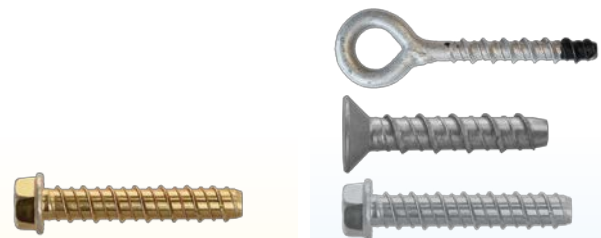
Note: Thunderbolt[®]PRO Eyebolt Screwbolt is designed for use in non-safety critical applications only. **The Thunderbolt[®]PRO Eyebolt Screwbolt is NOT designed for use in Fall Arrest Systems or as a lifting anchor.**

RECOMMENDED LOADS

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

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.)

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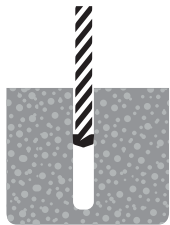


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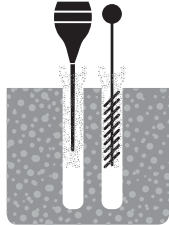
DESIGN CONDITIONS – SIMPLIFIED DESIGN METHOD

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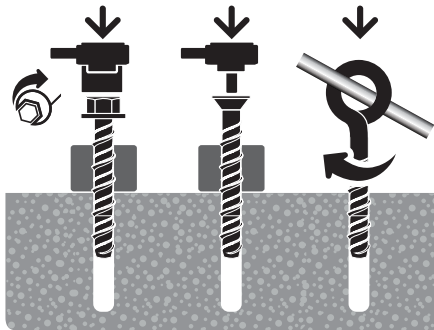
INSTALLATION



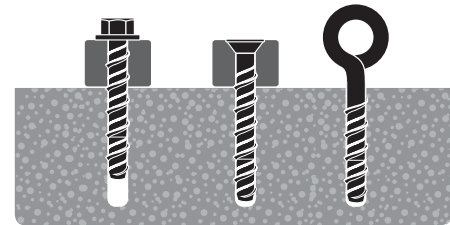
With the correct diameter drill bit, drill a hole to the depth of at least one diameter of the anchor deeper than the required embedment.



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

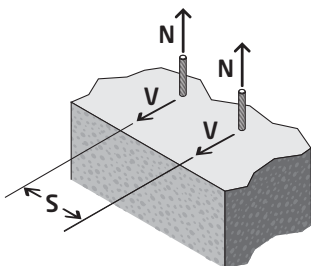
The Thunderbolt[®] PRO screwbolt anchor functions with little expansionary forces and facilitates installations to be made closer to each other or to a concrete slab edge.

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.

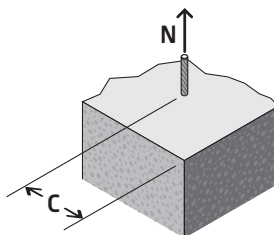
USING THE REDUCTION FACTORS

SPACING - TENSION & SHEAR (S)



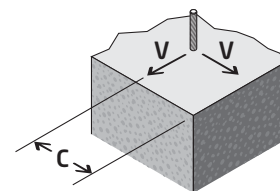
To achieve published tension and shear loads the anchors should be installed at least 12 x the anchor diameter between each other. If spacing between anchors is closer than 12 x the anchor diameter apply appropriate reduction factor as outlined in the SPACING TABLE to the published load to ascertain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

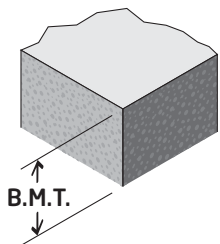


Reduction Factors

Diameter (d)	Anchor Size (mm)					REDUCTION FACTORS			
	6	8	10	12	16	SPACING (S)		EDGE DISTANCE (C)	
	Anchor Spacing (mm)					TENSION	SHEAR	TENSION	SHEAR
						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 $1.5 \times h_{embed}$, 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;

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

Where

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