



## HIGH PERFORMANCE SCREW-BOLT HEX & CSK HEADS

TDS | 1015.1

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.

10/60

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



ICCONS<sup>®</sup> Thunderbolt<sup>®</sup> 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.

ICCONS<sup>®</sup> Thunderbolt<sup>®</sup> PRO achieves the Highest Loads while generating Low Expansion forces which can make it a great alternative to adhesive anchors. The Thunderbolt<sup>®</sup> PRO is also completely removable making it ideal for temporary applications. Unlike mechanical expansion anchors, the Thunderbolt<sup>®</sup> 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<sup>®</sup> 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<sup>®</sup> Thunderbolt<sup>®</sup> PRO is the result of extensive testing and provides market leading load performance. ICCONS<sup>®</sup> Thunderbolt<sup>®</sup> PRO is a one piece, fast, efficient and cost effective fix for any job.

ZINC INTERNAL

GAL EXTERNAL

GAL EXTERNAL



Part No.	Part No.	Part No.	Description	mm	mm	mm	qty	qty	
		<b>SXTBCS06050G</b>	6 x 50mm	6	10	16	6	100	1200
		<b>SXTBCS06075G</b>	6 x 75mm					100	600
		<b>SXTBCS06075G</b>	6 x 100mm					100	600
<b>SXTB08050</b>	<b>SXTB08050G</b>		8 x 50mm	8	13	21	8	100	600
<b>SXTB08060</b>	<b>SXTB08060G</b>	<b>SXTBCS08060G</b>	8 x 60mm					100	600
<b>SXTB08075</b>	<b>SXTB08075G</b>	<b>SXTBCS08075G</b>	8 x 75mm					100	500
<b>SXTB08100</b>	<b>SXTB08100G</b>	<b>SXTBCS08100G</b>	8 x 100mm					100	400
<b>SXTB10060</b>	<b>SXTB10060G</b>		10 x 60mm	10	17	25	9	50	250
<b>SXTB10075</b>	<b>SXTB10075G</b>		10 x 75mm					50	250
		<b>SXTBCS10075G</b>	10 X 75mm					50	300
<b>SXTB10100</b>	<b>SXTB10100G</b>		10 x 100mm					50	250
		<b>SXTBCS10100G</b>	10 X 100mm					50	300
<b>SXTB10120</b>	<b>SXTB10120G</b>		10 x 120mm					50	250
<b>SXTB12075</b>	<b>SXTB12075G</b>		12 x 75mm	12	19	28	10	50	150
		<b>SXTBCS12075G</b>	12 X 75mm					50	200
<b>SXTB12100</b>	<b>SXTB12100G</b>	<b>SXTBCS12100G</b>	12 x 100mm					50	150
<b>SXTB12120</b>	<b>SXTB12120G</b>		12 x 120mm					25	125
<b>SXTB12150</b>	<b>SXTB12150G</b>		12 x 150mm					25	75
		<b>SXTBCS12150G</b>	12 X 150mm					20	120
<b>SXTB16100</b>	<b>SXTB16100G</b>		16 x 100mm	16	24			15	60
<b>SXTB16150</b>	<b>SXTB16150G</b>		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, please refer to the Iccons website for a complete suite of compliant post-installed chemical and mechanical anchoring products.



Anchor Size (mm)	Drill Size (mm)	Embedment Depth (mm)	N <sub>rec</sub>				V <sub>rec</sub>			
			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)	
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](mailto: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.

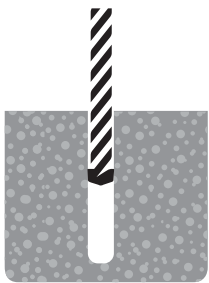
## MATERIAL SPECIFICATIONS



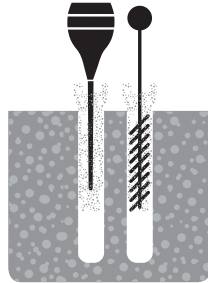
Anchor Part	Zinc Plated (Yellow)	Mechanically Galvanized
Anchor body	Heat Treated 10B21	Heat Treated 10B21
Plating	Electroplated Zinc Coating thickness 5 microns (min.)	Galvanised Coating thickness 45 microns (min.)



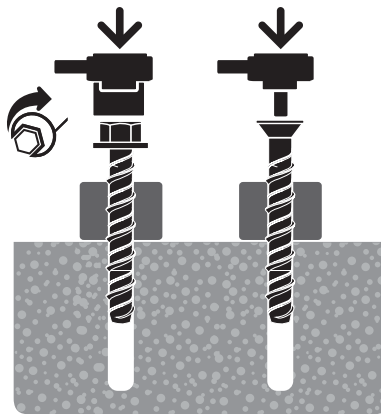
## INSTALLATION



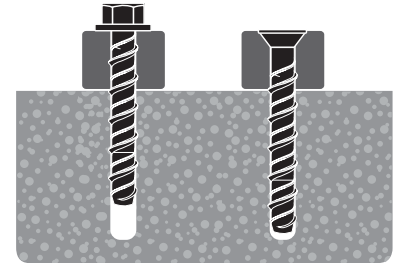
With the correct diameter drill bit, drill a hole to the depth of at least one diameter of the anchor deeper than the required embedment.



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

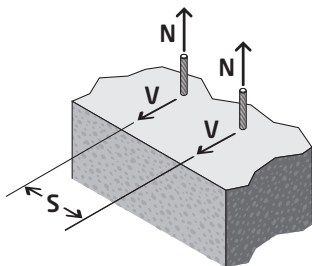
The Thunderbolt<sup>®</sup> PRO screwbolt anchor functions with little expansionary forces and facilitates installations to be made closer to each other or to a concrete slab edge.

ICCONS<sup>™</sup> 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<sup>™</sup> 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.

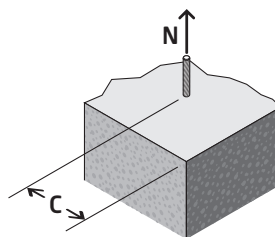
## USING THE REDUCTION FACTORS

### SPACING - TENSION & SHEAR (S)



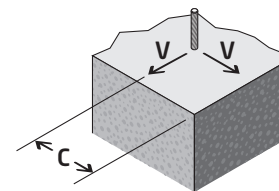
To achieve published tension and shear loads the anchors should be installed at least 12 x the anchor diameter between each other. If spacing between anchors is closer than 12 x the anchor diameter apply appropriate reduction factor as outlined in the SPACING TABLE to the published load to ascertain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

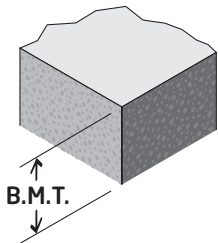


## Reduction Factors

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

## Base Material Thickness

Base material thickness should be  $1.5 \times h_{\text{embed}}$  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:

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