

SLEEVE ANCHORS



ICCONS®
Serious Connections®

HEX HEAD RANGE

TDS | 1008.3



Zinc Plated Carbon Steel



Galvanised Carbon Steel



316 Stainless Steel



ZINC INTERNAL



GAL EXTERNAL



316 SS EXTERNAL

ICCONS® Sleeve Anchors are a medium duty pre-assembled torque setting expansion anchor consisting of a threaded plow bolt and a pressed carbon steel sleeve designed to expand when anchor is tightened locking the sleeve against the wall of the hole. Features a collapsible design to assist clamp down of fixture. Suitable for concrete, solid brick & concrete block.

- Available in 316 Stainless Steel, (Zinc & Galvanised) Carbon Steel
- Through fixing for fast installation
- Collapsible design to assist clamp down of fixture
- Suitable for concrete, solid brick & concrete block.



Part No.	Part No.	Part No.	M	Description	mm	mm	mm	torque Nm	qty	qty
SA06525			M5	6.5 x 25mm	6.5	30	20	2.5	100	1000
SA06535		SA06535SS		6.5 x 35mm			5		100	1000
SA06555		SA06555SS		6.5 x 55mm			25		100	1000
SA06575		SA06575SS		6.5 x 75mm			45		100	1000
SA08040	SA08040G	SA08040SS	M6	8 x 40mm	8.0	50	35	5	100	1000
SA08065	SA08065G	SA08065SS		8 x 65mm			30		50	500
SA08085	SA08085G	SA08085SS		8 x 85mm			50		50	500
SA10040	SA10040G	SA10040SS	M8	10 x 40mm	10.0	40	34	10	50	500
SA10050	SA10050G	SA10050SS		10 x 50mm			10		50	500
SA10060	SA10060G	SA10060SS		10 x 60mm			20		50	500
SA10075	SA10075G	SA10075SS		10 x 75mm			35		50	500
SA10095	SA10095G	SA10095SS		10 x 95mm			55		50	400
SA10120				10 x 120mm			80		50	300
SA12060	SA12060G	SA12060SS	M10	12 x 60mm	12	50	10	25	50	400
SA12075	SA12075G	SA12075SS		12 x 75mm			25		25	250
SA12100	SA12100G	SA12100SS		12 x 100mm			50		25	250
SA12130	SA12130G			12 x 130mm			80		25	200
SA16065	SA16065G		M12	16 x 65mm	16	55	10	40	25	200
SA16110	SA16110G			16 x 110mm			55		10	100
SA16145				16 x 145mm			90		10	100
SA20075			M16	20 x 75mm	20	60	15	90	10	100
SA20105				20 x 105mm			45		10	60
SA20150				20 x 150mm			90		10	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)	Bolt Size	Drill Size (mm)	Anchor Embedment (mm)	Spacing (mm)	Edge Distance (mm)	N _{rec} ZINC & GAL TENSION			V _{rec} ZINC & GAL SHEAR			N _{rec} 316 STAINLESS STEEL TENSION			V _{rec} 316 STAINLESS STEEL SHEAR			
						20MPa (kN)	32MPa (kN)	40MPa (kN)	20MPa (kN)	32MPa (kN)	40MPa (kN)	20MPa (kN)	32MPa (kN)	40MPa (kN)	20MPa (kN)	32MPa (kN)	40MPa (kN)	
6.5	M5	6.5	20	40	78	1.1	1.4	1.5	1.1	1.4	1.5	1.1	1.4	1.5	1.1	1.4	1.5	
			30	60		2.1	2.1	2.1	2.2	2.3	2.3	2.1	2.1	2.1	2.0	2.0	2.0	
8.0	M6	8.0	35	70	96	2.8	2.9	2.9	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.6	2.6	2.6
			50	100		2.9	2.9	2.9	2.8	2.8	2.8	2.9	2.9	2.9	2.6	2.6	2.6	
10.0	M8	10	40	80	120	3.2	4.1	4.5	3.2	4.0	4.5	3.2	4.1	4.5	3.2	4.0	4.5	
			60	120		4.7	4.7	4.7	5.1	5.1	5.1	4.7	4.7	4.7	4.8	4.8	4.8	
12.0	M10	12	50	100	144	4.7	6.0	6.2	4.7	6.0	6.7	4.7	6.0	6.2	4.7	6.0	6.7	
			70	140		6.2	6.2	6.2	7.9	7.9	7.9	6.2	6.2	6.2	7.0	7.0	7.0	
16.0	M12	16	55	110	192	5.3	6.7	7.4	5.3	6.6	7.4							
			80	160		9.6	9.6	9.6	11.4	11.4	11.4							
20.0	M16	20	60	120	240	5.3	6.7	7.4	5.3	6.6	7.4							
			100	200		13.4	14.6	14.6	17.9	17.9	17.9							

Note: The above information has been derived from laboratory test results using NATA calibrated equipment.

The above load capacities incorporate a safety factor of 3 for concrete and 2.5 for steel. All loads are representative of a single anchor remote from an edge.

Limit State Design - Multiply the above loads by 1.8 to determine the Limit State Design capacities.

MATERIAL SPECIFICATIONS

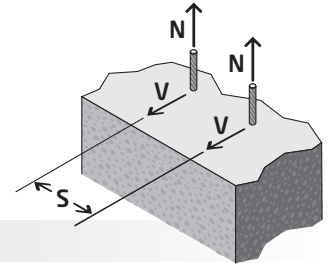
Sleeve Anchor - Hex Head Range



Anchor Part	Zinc Plated Hex	Galvanised Hex	316 s/s Hex
Expander sleeve	AISI1010	AISI1010	316 s/s
Washer	AISI1010	AISI1010	316 s/s
Nut	AISI1010	AISI1010	316 s/s
Plow bolt	AISI1010	AISI1010	316 s/s
Plating	Electroplated Zinc Coating thickness 5 microns (min.)	Galvanised Coating thickness 45 microns (min.)	n/a



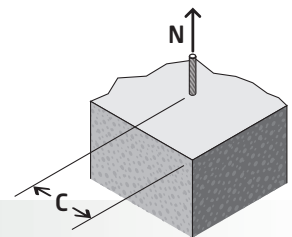
When anchor spacing or edge distances are less than critical distances, Recommended Working Load values must be multiplied by the appropriate reduction factors. Linear interpolation is allowed for intermediate anchor spacing and edge distances between critical and minimum distances. If an anchor/anchor group is affected by multiple reduced spacing and edge distances, the spacing and edge reduction factors must be multiplied together to give a total effect on the anchor / anchor group performance.



Spacing Reduction Factors ($S_t + S_s$) – tension and shear

	d (mm)	6.5		8		10		12		16		20	
	$h_{embed.}$	20	30	35	50	40	60	50	70	55	80	60	100
	S_{cr} (mm)	40	60	70	100	80	120	100	140	110	160	120	200
	S_{min} (mm)	20	30	35	50	40	60	50	70	55	80	60	100
Spacing (S) mm	20	0.50											
	30	0.75	0.50										
	35	0.88	0.58	0.50									
	40	1.00	0.67	0.57		0.50							
	45		0.75	0.64		0.56							
	50		0.83	0.71	0.50	0.63		0.50					
	55		0.92	0.79	0.55	0.69		0.55		0.50			
	60		1.00	0.86	0.60	0.75	0.50	0.60		0.55		0.50	
	70			1.00	0.70	0.88	0.58	0.70	0.50	0.64		0.58	
	80				0.80	1.00	0.67	0.80	0.57	0.73	0.50	0.67	
	90				0.90		0.75	0.90	0.64	0.82	0.56	0.75	
	100				1.00		0.83	1.00	0.71	0.91	0.63	0.83	0.50
	110						0.92		0.79	1.00	0.69	0.92	0.55
	120						1.00		0.86		0.75	1.00	0.60
	140								1.00		0.88		0.70
	160										1.00		0.80
180												0.90	
200												1.00	

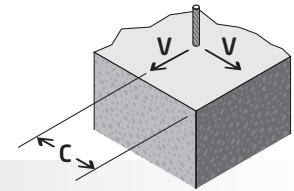
Note: To achieve 100% anchor load, critical spacing (S_{cr}) is equal to $2 \times h_{embed.}$.
Minimum spacing (S_{min}) is equal to $h_{embed.}$ at which the anchor achieves 50% of load.



Edge Distance Reduction Factor (C_t) – tension

	d (mm)	6.5	8	10	12	16	20
	C_{cr} (mm)	78	96	120	144	192	240
	C_{min} (mm)	32.5	40	50	60	80	100
Edge Distance (C) mm	32.5	0.75					
	40	0.79	0.75				
	50	0.85	0.79	0.75			
	60	0.90	0.84	0.79	0.75		
	78	1.00	0.92	0.85	0.80		
	80		0.93	0.86	0.81	0.75	
	96		1.00	0.91	0.86	0.79	
	100			0.93	0.87	0.80	0.75
	120			1.00	0.93	0.84	0.79
	144				1.00	0.89	0.83
	192					1.00	0.91
240						1.00	

Note: To achieve 100% anchor load, critical edge distance (C_{cr}) is equal to $12d$ ($12 \times$ anchor diameter).
Minimum edge distance (C_{min}) is equal to $(5d)$ at which the anchor achieves 75% of load.



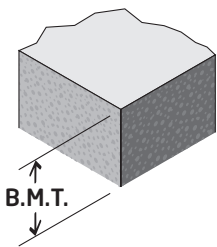
Edge Distance Reduction Factor (C_s) – shear

	d (mm)	6.5	8	10	12	16	20
	C_{cr} (mm)	78	96	120	144	192	240
	C_{min} (mm)	32.5	40	50	60	80	100
Edge Distance (C) mm	32.5	0.35					
	40	0.37	0.35				
	50	0.60	0.47	0.35			
	60	0.74	0.58	0.44	0.35		
	78	1.00	0.72	0.55	0.44		
	80		0.81	0.63	0.50	0.35	
	96		1.00	0.78	0.63	0.44	
	100			0.81	0.66	0.47	0.35
	120			1.00	0.81	0.58	0.44
	144				1.00	0.72	0.55
	192					1.00	0.78
	240						1.00

Note: To achieve 100% anchor load, critical edge distance (C_{cr}) is equal to $12d$ (12 x anchor diameter).
Minimum edge distance (C_{min}) is equal to $(5d)$ at which the anchor achieves 35% of load.

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

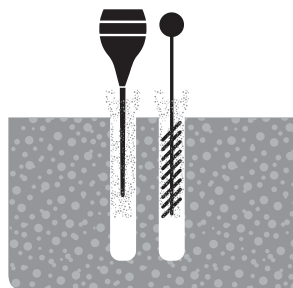
Where:

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

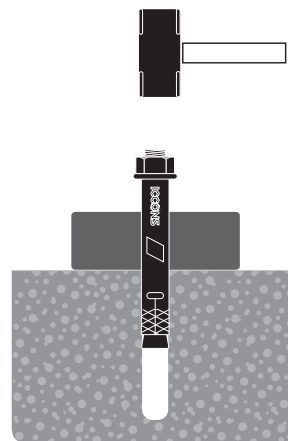
INSTALLATION



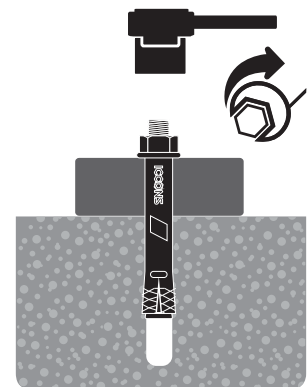
With the correct diameter drill bit, drill a hole to the correct depth



Clean dust and other material from the hole.



Insert anchor into position.



With correct size socket or spanner tighten anchor to specified torque. Installation complete!