

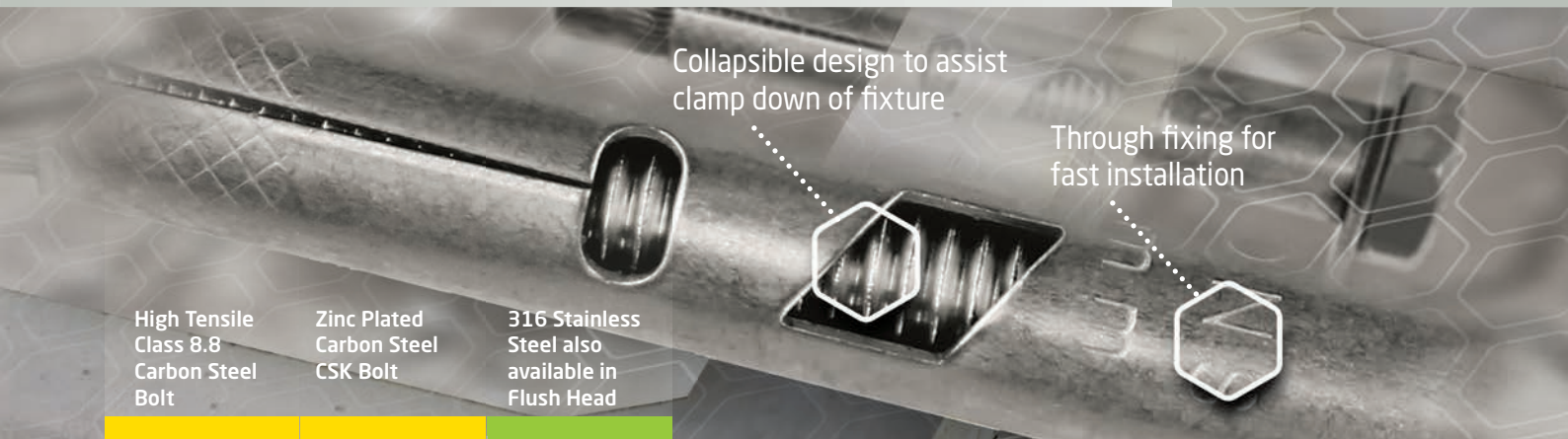
FLUSH HEAD & COUNTERSUNK



ICCONS®
Serious Connections®

MEDIUM DUTY PRE-ASSEMBLED SLEEVE ANCHORS

TDS | 1013.2



High Tensile
Class 8.8
Carbon Steel
Bolt

Zinc Plated
Carbon Steel
CSK Bolt

316 Stainless
Steel also
available in
Flush Head



Suitable for concrete, solid brick & concrete block

ICCONS® Flush Head & Countersunk Sleeve Anchors are a medium duty pre-assembled torque setting expansion anchor consisting of a Class 8.8 bolt with a threaded cone and a pressed carbon steel sleeve designed to expand when 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.

ZINC INTERNAL		ZINC INTERNAL		316 SS EXTERNAL						
Part No.	Part No.	Part No.	M	Description	mm	mm	mm	torque Nm	qty	qty
	SACSK065035		M5	6.5 x 35mm	6.5	30	5	2.5	100	1000
	SACSK065055			6.5 x 55mm			25		100	1000
	SACSK065075			6.5 x 75mm			45		100	1000
	SACSK065100			6.5 x 100mm			70		100	1000
SAF08045		SAF08045SS	M6	8 x 45mm	8.0	35	10	5.0	100	1000
	SACSK08060			8 x 60mm			25		50	500
SAF08070		SAF08070SS		8 x 70mm			35		50	500
	SACSK08085			8 x 85mm			50		50	500
SAF08090		SAF08090SS		8 x 90mm			55		50	500
		SAF10040SS	M8	10 x 40mm	10.0	40	6	10.0	50	500
SAF10045				10 x 45mm			5		50	500
SAF10055				10 x 55mm			15		50	500
		SAF10060SS		10 x 60mm			20		50	500
SAF10065				10 x 65mm			25		50	500
	SACSK10075	SAF10075SS		10 x 75mm			35		50	500
SAF10080				10 x 80mm			40		50	500
		SAF10095SS		10 x 95mm			55		50	400
SAF10100	SACSK10100			10 x 100mm			60		50	400
	SACSK10120			10 x 120mm			80		50	300
SAF12065			M10	12 x 65mm	12.0	50	15	25.0	50	300
SAF12080				12 x 80mm			30		25	250
		SAF12075SS		12 x 75mm			25		25	250
SAF12105				12 x 105mm			55		25	250
SAF16075			M12	16 x 75mm	16.0	60	15	40.0	25	200
SAF16110				16 x 110mm			50		10	100

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 Icons website for a complete suite of compliant post-installed chemical and mechanical anchoring products.







FLUSH HEAD & COUNTERSUNK



ICCONS®
Serious Connections®

PERFORMANCE | RECOMMENDED LOADS

TDS | 1013.2

						N _{rec}			V _{rec}			N _{rec}			V _{rec}		
						ZINC & GAL TENSION			ZINC & GAL SHEAR			316 STAINLESS STEEL TENSION			316 STAINLESS STEEL SHEAR		
Anchor Size (mm)	Bolt Size	Drill Size (mm)	Anchor Embedment (mm)	Spacing (mm)	Edge Distance (mm)	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	0.7	0.9	1.0	0.7	0.9	1.0						
			30	60		1.7	2.1	2.1	1.7	2.1	2.5						
8.0	M6	8	35	70	96	2.1	2.7	3.0	2.1	2.7	3.0	2.1	2.7	3.0	2.1	2.1	2.1
			50	100		3.0	2.9	2.9	3.2	3.2	3.2	3.0	3.0	3.0	2.1	2.1	2.1
10.0	M8	10	40	80	120	2.6	3.3	3.7	2.6	3.3	3.7	2.6	3.3	3.7	2.6	3.3	3.7
			60	120		4.7	4.7	4.7	5.8	5.9	5.9	4.7	4.7	4.7	3.8	3.8	3.8
12.0	M10	12	50	100	144	3.8	4.8	5.3	3.8	4.8	5.3	3.8	4.8	5.3	3.8	4.8	5.3
			70	140		6.2	6.2	6.2	7.2	9.2	10.2	6.2	6.2	6.2	6.1	6.1	6.1
16.0	M12	16	55	110	192	3.6	4.6	5.2	3.6	4.6	5.2						
			80	160		8.0	9.6	9.6	13.5	13.5	13.5						

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 installed in a hammer drilled, dry hole remote from an edge.
Limit State Design - Multiply the above loads by 1.8 to determine the Limit State Design capacities.

MATERIAL SPECIFICATIONS

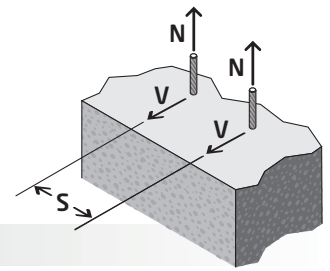
Sleeve Anchor - Flush Head & Countersunk Range



Anchor Part	Zinc Plated Flush Head	Zinc Plated Countersunk	316 s/s Flush Head
Bolt	Class 8.8	AISI1010	316 s/s
Washer	AISI1010	-	316 s/s
Expander Cone	AISI1010	AISI1010	316 s/s
Expander Sleeve	AISI1010	AISI1010	316 s/s
Plating	Electroplated Zinc Coating thickness 5 microns (min.)	Electroplated Zinc Coating thickness 5 microns (min.)	n/a



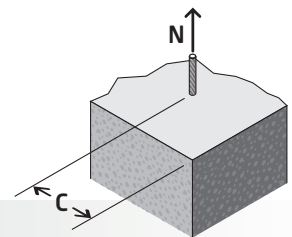
When anchor spacing or edge distances are less than critical distances, Recommended Working Load values must be multiplied by the appropriate reduction factors. Linear interpolation is allowed for intermediate anchor spacing and edge distances between critical and minimum distances. If an anchor/anchor 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
h_{embed}	20	30	35	50	80
S_{cr} (mm)	40	60	70	100	160
S_{min} (mm)	20	30	35	50	80
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	0.63
	55		0.92	0.79	0.69
	60		1.00	0.86	0.75
	70			1.00	0.88
	80				1.00
	90				
	100				
	110				
	120				
	140				
	160				

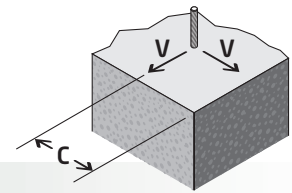
Note: To achieve 100% anchor load, critical spacing (S_{cr}) is equal to $2 \times h_{\text{embed}}$.
Minimum spacing (S_{min}) is equal to h_{embed} at which the anchor achieves 50% of load.



Edge Distance Reduction Factor (C_t) - tension

d (mm)	6.5	8	10	12	16
C_{cr} (mm)	78	96	120	144	192
C_{min} (mm)	32.5	40	50	60	80
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
	96		1.00	0.91	0.86
	100			0.93	0.87
	120			1.00	0.93
	144				1.00
	192				

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.



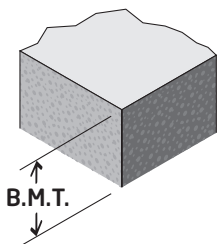
Edge Distance Reduction Factor (C_s) - shear

	d (mm)	6.5	8	10	12	16
	C_{cr} (mm)	78	96	120	144	192
	$C_{min.}$ (mm)	32.5	40	50	60	80
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
	120			1.00	0.81	0.58
	144				1.00	0.72
	192					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;

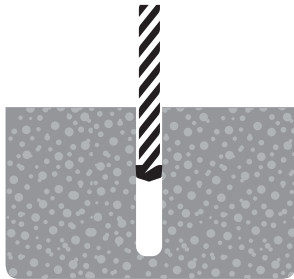
$$N_{applied} / N_{rec} \leq 1 \quad V_{applied} / V_{rec} \leq 1 \quad (N_{applied} / N_{rec}) + (V_{applied} / V_{rec}) \leq 1.2$$

Where:

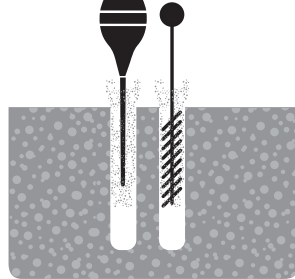
$N_{applied}$	=	Applied Tension Load
N_{rec}	=	Recommended Tension Load
$V_{applied}$	=	Applied Shear Load
V_{rec}	=	Recommended Shear Load



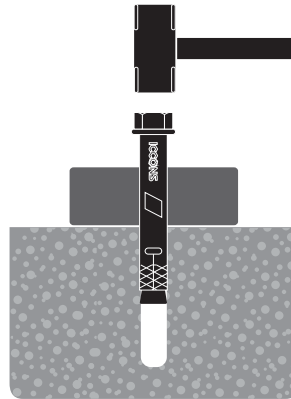
FLUSH HEAD INSTALLATION



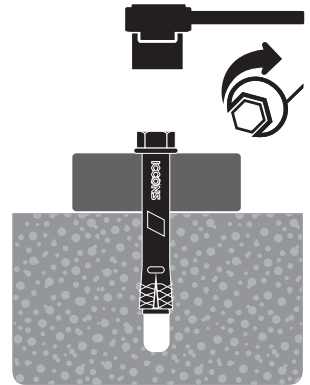
With the correct diameter drill bit, drill a hole to the correct depth



Clean dust and other material from the hole.



Insert anchor into position.

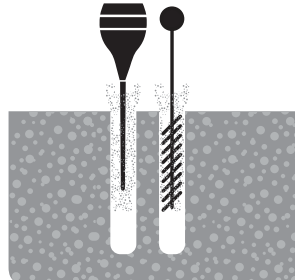


With correct size socket or spanner tighten anchor to specified torque. Installation complete!

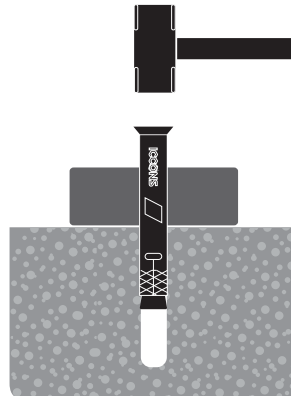
COUNTERSUNK INSTALLATION



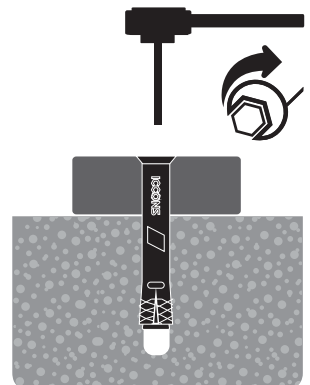
With the correct diameter drill bit, drill a hole to the correct depth



Clean dust and other material from the hole.



Insert anchor into position.



With correct size PH3 driver bit tighten anchor to specified torque. Installation complete!