

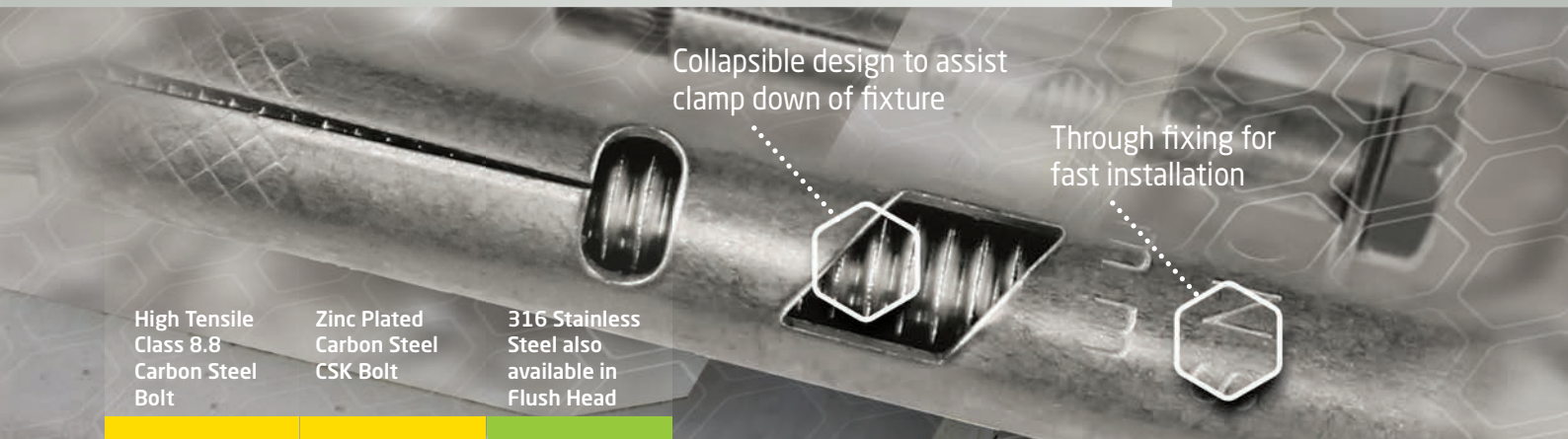
# FLUSH HEAD & COUNTERSUNK



**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
	<b>SACSK065035</b>		M5	6.5 x 35mm	6.5	30	5	2.5	100	1000
	<b>SACSK065055</b>			6.5 x 55mm			25		100	1000
	<b>SACSK065075</b>			6.5 x 75mm			45		100	1000
	<b>SACSK065100</b>			6.5 x 100mm			70		100	1000
<b>SAF08045</b>		<b>SAF08045SS</b>	M6	8 x 45mm	8.0	35	10	5.0	100	1000
	<b>SACSK08060</b>			8 x 60mm			25		50	500
<b>SAF08070</b>		<b>SAF08070SS</b>		8 x 70mm			35		50	500
	<b>SACSK08085</b>			8 x 85mm			50		50	500
<b>SAF08090</b>		<b>SAF08090SS</b>		8 x 90mm			55		50	500
		<b>SAF10040SS</b>	M8	10 x 40mm	10.0	40	35	10.0	50	500
<b>SAF10045</b>				10 x 45mm			5		50	500
<b>SAF10055</b>				10 x 55mm			15		50	500
		<b>SAF10060SS</b>		10 x 60mm			20		50	500
<b>SAF10065</b>				10 x 65mm			25		50	500
	<b>SACSK10075</b>	<b>SAF10075SS</b>		10 x 75mm			35		50	500
<b>SAF10080</b>				10 x 80mm			40		50	500
		<b>SAF10095SS</b>		10 x 95mm			55		50	400
<b>SAF10100</b>	<b>SACSK10100</b>			10 x 100mm			60		50	400
	<b>SACSK10120</b>			10 x 120mm			80		50	300
<b>SAF12065</b>			M10	12 x 65mm	12.0	50	15	25.0	50	300
<b>SAF12080</b>				12 x 80mm			30		25	250
		<b>SAF12075SS</b>		12 x 75mm			25		25	250
<b>SAF12105</b>				12 x 105mm			55		25	250
<b>SAF16075</b>			M12	16 x 75mm	16.0	60	15	40.0	25	200
<b>SAF16110</b>				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 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 <sub>rec</sub>			V <sub>rec</sub>			N <sub>rec</sub>			V <sub>rec</sub>			
						ZINC & GAL TENSION			ZINC & GAL SHEAR			316 STAINLESS STEEL TENSION			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	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

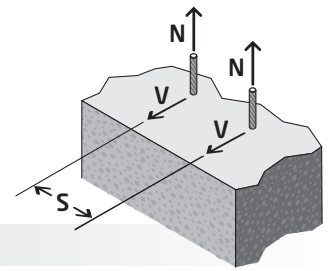
### Sleeve Anchor - Flush Head & Countersunk Range



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



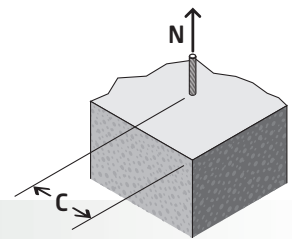
When anchor spacing or edge distances are less than critical distances, Recommended Working Load values must be multiplied by the appropriate reduction factors. Linear interpolation is allowed for intermediate anchor spacing and edge distances between critical and minimum distances. If an anchor/anchor 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	40	60	50	70	55	80	
$S_{cr}$ (mm)	40	60	70	100	80	120	100	140	110	160	
$S_{min.}$ (mm)	20	30	35	50	40	60	50	70	55	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	0.50	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		
	70			1.00	0.70	0.88	0.58	0.70	0.50	0.64	
	80				0.80	1.00	0.67	0.80	0.57	0.73	0.50
	90				0.90		0.75	0.90	0.64	0.82	0.56
	100				1.00		0.83	1.00	0.71	0.91	0.63
	110						0.92		0.79	1.00	0.69
	120						1.00		0.86		0.75
	140								1.00		0.88
160										1.00	

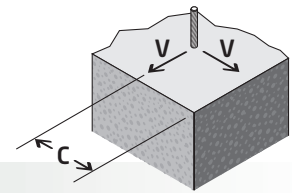
**Note:** To achieve 100% anchor load, critical spacing ( $S_{cr}$ ) is equal to  $2 \times h_{embed.}$ .  
Minimum spacing ( $S_{min.}$ ) is equal to  $h_{embed.}$  at which the anchor achieves 50% of load.



#### Edge Distance Reduction Factor ( $C_t$ ) - tension

d (mm)	6.5	8	10	12	16	
$C_{cr}$ (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	0.75
	96		1.00	0.91	0.86	0.79
	100			0.93	0.87	0.80
	120			1.00	0.93	0.84
	144				1.00	0.89
	192					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.



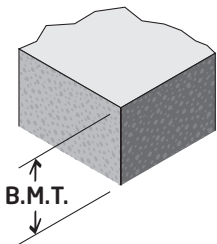
#### Edge Distance Reduction Factor ( $C_s$ ) - shear

	d (mm)	6.5	8	10	12	16
	$C_{cr}$ (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

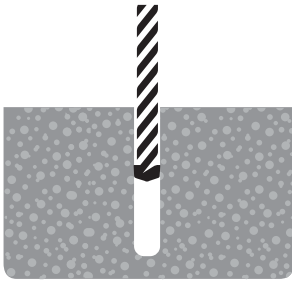
For combined tension and shear load applications the following equations shall be satisfied;  
 $N_{applied} / N_{rec} \leq 1$        $V_{applied} / V_{rec} \leq 1$        $(N_{applied} / N_{rec}) + (V_{applied} / V_{rec}) \leq 1.2$

Where:

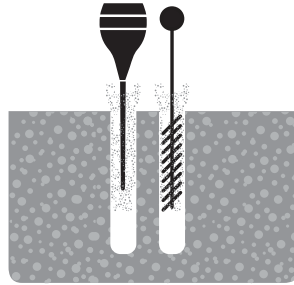
- $N_{applied}$  = Applied Tension Load
- $N_{rec}$  = Recommended Tension Load
- $V_{applied}$  = Applied Shear Load
- $V_{rec}$  = Recommended Shear Load



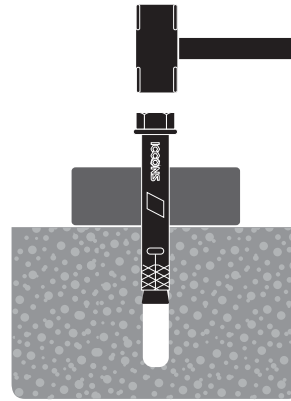
## FLUSH HEAD INSTALLATION



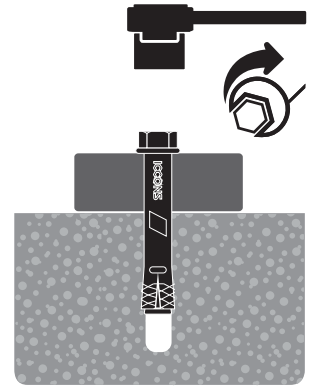
With the correct diameter drill bit, drill a hole to the correct depth



Clean dust and other material from the hole.

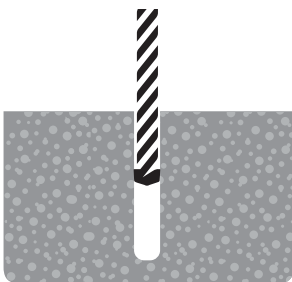


Insert anchor into position.

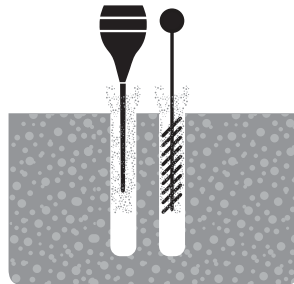


With correct size socket or spanner tighten anchor to specified torque. Installation complete!

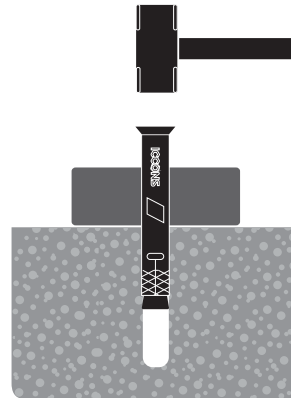
## COUNTERSUNK INSTALLATION



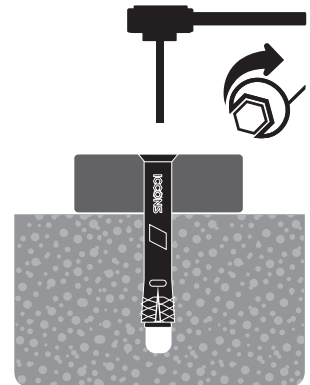
With the correct diameter drill bit, drill a hole to the correct depth



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!