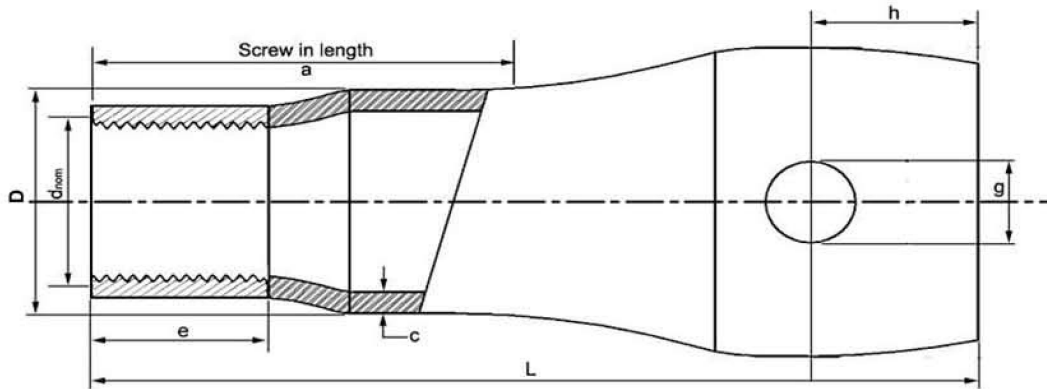


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Cast-In-Insert

- Time saving benefits of not requiring to drill
- Medium to heavy load capacity
- Precise positioning without interfering with the rebar layout possible
- Relatively LOW in-placed cost
- Blue zinc plated for added corrosion resistance



Material:

Welded steel precision tube DIN 2394
Stainless steel SUS 304, 316

Technical Specifications:

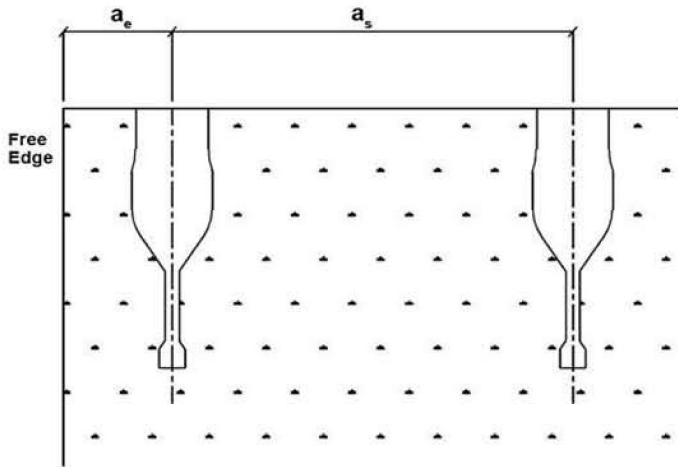
Tensile Load (kN) ^{a)}		Size d _{nom}	Dimensions (mm)							Dimension of Dowel Pin
Safe Working Load	Ultimate Tension Load		l	a	D	c	e	g	h	
3.5	17.5	M10	60	18	13.5	1.5	11	8.5	12	Ø6 x 50mm
5.0	25.0	M12	60	23	17.0	2.0	12	8.5	15	Ø7 x 50mm
6.0	30.0	M12	70	25	17.0	2.0	12	8.5	17	Ø7 x 50mm
7.0	35.0	M16	70	25	21.3	2.6	19	10.5	15	Ø9 x 60mm
8.0	40.0	M16	80	25	21.3	2.6	19	10.5	15	Ø9 x 60mm
10.0	50.0	M16	100	32	21.3	2.6	19	10.5	15	Ø9 x 60mm
12.0	60.0	M16	120	42	21.3	2.6	19	10.5	15	Ø9 x 60mm
12.5	62.5	M20	100	43	26.9	3.0	22	12.0	22	Ø10 x 100mm
14.0	70.0	M20	120	43	26.9	3.0	22	14.0	22	Ø12 x 100mm
18.0	90.0	M24	120	45	33.7	4.0	26	14.0	25	Ø12 x 100mm
27.5	137.5	M30	150	75	42.0	4.0	30	15.0	25	Ø14 x 100mm

a) Tensile load values for minimum concrete strength 25 N/mm². The tensile values may be increased by 20% for anchor installation in higher concrete strength (concrete grade 30 and above).

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Anchor Spacing and Edge Distance:



Size	(mm)			min concrete thickness
	a_s	$a_{e,t}$	$a_{e,s}$	
M10 x 60	100	75	100	75
M12 x 60	120	90	120	85
M12 x 70	120	105	140	95
M16 x 70	160	105	140	95
M16 x 80	160	120	160	105
M16 x 100	160	150	200	125
M16 x 120	160	150	240	145
M20 x 100	200	180	200	125
M20 x 120	200	180	240	145
M24 x 120	240	180	240	145
M30 x 150	300	225	300	175

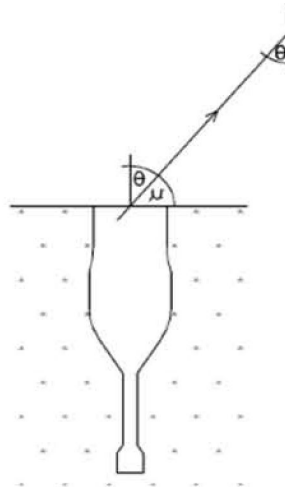
a_s - Minimum Anchor spacing (for Tension and Shear)

$a_{e,t}$ - Minimum Edge distance (for Tension)

$a_{e,s}$ - Minimum Edge distance (for Shear)

Load directions and reduction factors:

When an insert is not loaded perpendicularly, the safe working load given would have to be subjected to a reduction factor as shown in table below. The safe working load would have to be multiplied by the reduction factor.



Angel θ° / θ	Angle μ/μ°	Reduction Factor
00 - 05	90 - 85	1.00
05 - 10	85 - 80	0.90
10 - 15	80 - 75	0.80
15 - 20	75 - 70	0.70
20 - 25	70 - 65	0.65
25 - 30	65 - 60	0.60

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Shear Load

Safe Working Load in Shear for Steel Bolt Capacity, $V_{Rec,s}$

Bolt/ Threaded Rod Size	mm	M10	M12	M16	M20	M24	M30
Cross Section Area, A_s	mm ²	58.0	84.3	157.0	245.0	353.0	561.0
$V_{Rec,s}$ (property class 5.8)	(kN)	6.4	9.3	17.6	27.3	39.3	62.4
$V_{Rec,s}$ (property class 8.8)	(kN)	10.2	14.9	28.0	43.6	62.7	99.8

Concrete Edge Resistance, $V_{Rec,c}$

Anchor Size	mm	M10	M12	M16	M20	M24	M30
Safe Working Load (towards edge at min. edge distance)	(kN)	1.8	4.5	8.3	10.6	13.5	20.6
Ultimate Load (No edge distance)	(kN)	7.0	18.2	33.1	42.5	54.0	82.5