AUSTRALIAN FASTENERS.COM

51 Lakewood Boulevard
Carrum Downs VIC 3201
Tel: 0458 116 452

ABN: 65 651 565 758

Clawbolt® Stud Anchor

Clawbolts® (Through Bolts) are pre-assembled single unit wedge type anchors used in solid concrete applications. Fixing is achieved by controlled torquing of the nut which draws the tapered section up into the clip, thereby expanding it outward and forcing the Clawbolt® against the sidewall of the pre-drilled hole.

CLAWBOLT®

Applications	
• Hand rail fastening • Formwork support fastening • Mechanical, electrical and pipe bracket fixing • Facade installation • Stadium seating • Guide and hand rails	• Steel fabricators • Electricians • Mechanical service installers • Air conditioning, heating and ventilation installers (HVAC) • Racking and material handling installers

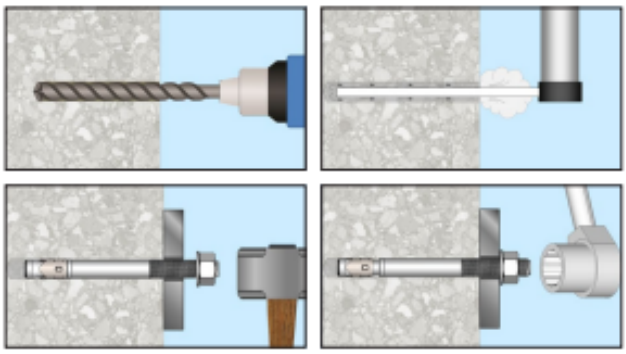
Features

- Suitable for light to medium duty loads
- Suitable for standard and reduced embedment depths
- Quick and easy to install
- Immediate loading is possible

Expansion Clip

Material	CS	Carbon Steel
Finish	MGAL	Mechanically Galvanised Stainless Steel 304 Ring
Finish	ZYP	Zinc Yellow Passivate
Material	316	Stainless Steel
Finish	316	316 Stainless

Installation



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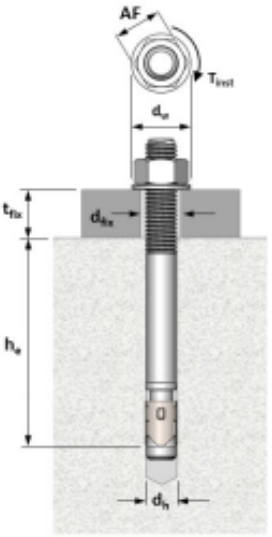
Installation Guide

Size	Hole dia. Ø	Minimum embedment depth	Hole diameter on fixture	Tightening torque guide	Wrench size	Washer dia. Ø	Minimum concrete thickness	Minimum spacing	Minimum edge distance
	D_h (mm)	$h_{e,min}$ (mm)	d_{fix} (mm)	T_{inst} (Nm)	AF (mm)	d_w (mm)	h_{min} (mm)	S_{min} (mm)	C_{min} (mm)
M6	6	40	8	8	10	11.8	100	35	40
M8	8	40	10	15	13	15.9	100	40	50
M10	10	60	12	30	17	19.8	100	55	65
M12	12	70	15	50	19	23.9	130	75	100
M16	16	80	20	100	24	29.8	170	100	110
M20	20	90	24	200	30	36.8	200	110	125



Basic Load Performance in 32 MPa non-cracked concrete (Zinc Yellow and Mechanically Galvanised version)

[1] Design Resistance is the governing minimum load resistance obtained by comparing relevant concrete and steel resistances. Capacity reduction factors of $\phi = 0.60$ for concrete and $\phi = 0.80$ for steel are already included.

[2] Working Load is the governing minimum allowed load obtained by comparing relevant concrete and steel working loads. Factor of safety FOS = 2.5 for steel and FOS = 3.0 for concrete are already included.

Size	Depth	Design Tensile Resistance[1]	Working Load in Tension[2]
	h_e (mm)	ϕN_d (kN)	N_{WLL} (kN)
M6	40	4.8	2.6
	60	4.8	2.6
	70	4.8	2.6
M8	40	5.4	3.0
	60	5.4	3.0
	80	5.4	3.0
M10	60	6.0	3.3
	80	6.0	3.3
	100	6.0	3.3
M12	70	14.4	8.0
	90	14.4	8.0
	120	14.4	8.0
M16	80	16.2	9.0
	100	16.2	9.0
	120	16.2	9.0
M20	90	28.3	15.7
	100	33.2	18.4
	125	35.4	19.6

Size	Depth	Edge Distance	Design Shear Resistance[1]	Working Load in Shear[2]
	h_e (mm)	c_1 (mm)	ϕV_d (kN)	V_{WLL} (kN)
M6	40	40	2.5	1.4
		60	4.7	2.3
		70	4.7	2.3
M8	60	50	4.2	2.3
		60	5.6	3.1
		80	8.6	4.3
M10	80	65	7.1	3.9
		80	9.7	5.4
		100	13.6	6.8
M12	90	100	14.7	8.2
		120	19.4	9.9
		150	19.9	9.9
M16	110	110	19.3	10.7
		125	23.4	13.0
		150	29.7	14.8
M20	150	125	26.6	14.8
		150	35.0	19.4
		175	44.1	23.2

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Basic Load Performance in 32 MPa non-cracked concrete (316 Stainless Steel version)

[1] Design Resistance is the governing minimum load resistance obtained by comparing relevant concrete and steel resistances. Capacity reduction factors of ϕ = 0.60 for concrete and ϕ = 0.80 for steel are already included.

[2] Working Load is the governing minimum allowed load obtained by comparing relevant concrete and steel working loads. Factor of safety FOS = 2.5 for steel and FOS = 3.0 for concrete are already included.

Size	Depth	Design Tensile Resistance[1]	Working Load in Shear[2]
	h_e (mm)	ϕN_d (kN)	N_{WLL} (kN)
M8	40	8.4	4.6
	50	10.0	5.0
	70	10.0	5.0
M10	60	15.4	8.5
	80	18.8	9.4
	100	18.8	9.4
M12	70	19.4	10.8
	90	24.8	12.4
	110	24.8	12.4
M16	80	23.8	13.2
	100	33.2	18.4
	120	43.7	23.2
M20	90	28.3	15.7
	100	33.2	18.4
	125	46.4	25.8

Size	Depth	Edge Distance	Design Shear Resistance[1]	Working Load in Shear[2]
	h_e (mm)	c_1 (mm)	ϕV_d (kN)	V_{WLL} (kN)
M8	60	50	4.2	2.3
		60	5.6	3.1
		80	8.6	4.3
M10	80	65	7.1	3.9
		80	9.7	5.4
		100	13.6	6.8
M12	90	100	14.7	8.2
		120	19.4	9.9
		150	19.9	9.9
M16	110	110	19.3	10.7
		125	23.4	13.0
		150	30.8	17.1
M20	125	125	25.7	14.2
		150	33.7	18.7
		175	42.5	23.6