

WA — Wedge Anchor - Throughbolt

Material

Carbon Steel

Finish

Mechanically Galvanised



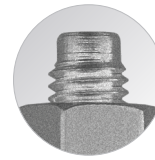
Size: See the table below

Features & Benefits

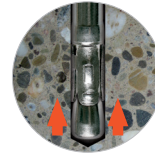
- Application of the installation torque draws the cone end of the stud into the expansion clip
- The expansion clip expands and develops a frictional grip with the sidewalls of the hole. This gives the anchor its resistance to tension loads
- Threaded end is chamfered for ease of starting nut
- Economical anchor for medium-duty loads
- Available in a wide range of diameters and lengths

Applications

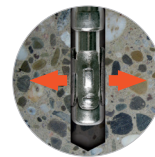
- Steel Fixtures
- Brackets
- Facades
- Ladders
- Railing



Threaded end is **chamfered** for ease of starting nut



Application of the installation torque draws the cone end of the stud into the expansion clip.



The **Expansion Clip** expands and develops a frictional grip with the sidewalls of the hole. This gives the anchor its resistance to tension loads.

Wedge Anchor

Specifications - WA

Model No.	Size		Material & Finish	Max. Fixture Thickness (mm)	Min. Fixture Hole Ø (mm)	Wrench Size (mm)	Box Qty	Ctn Qty
WA08083MG	M8	83 mm	Mechanically Galvanised	20	9	13	50	250
WA10093MG	M10	93 mm		20	12	17		25
WA10123MG		123 mm		50				
WA12085MG	M12	85 mm		5	14	19	25	125
WA12104MG		104 mm		5				
WA12119MG		119 mm		20				
WA12139MG		139 mm		40				
WA12149MG		149 mm		50				
WA12179MG		179 mm		80				
WA16110MG	M16	110 mm		10	18	24	20	80
WA16171MG		171 mm		50				
WA20120MG	M20	120 mm		5	22	30	10	40
WA20173MG		173 mm		30				
WA20193MG		193 mm		50				

1. Hex nut and washer included
 2. These fasteners possess a level of corrosion resistance that makes them suitable for use in some exterior and corrosive environments and with some preservative-treated timber.
 3. For applications in higher-exposure applications, consider Type-300 series stainless-steel fasteners for superior corrosion resistance.

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Installation Data

Description	Symbol	Units	Anchor Size				
			M6	M8	M10	M12	M16
Drill Hole Diameter	d_o	mm	6	8	10	12	16
Maximum Diameter of Drill Bit	$d_{cut,max}$		6.45	8.45	10.45	12.5	16.5
Drill Depth	h_1		55	65	70	90	110
Nominal Embedment Depth	h_{nom}		40	45	50	65	80
Anchor Length Range	L		60–85	68–163	78–233	104–259	151–261
Clearance Hole Diameter in Fixture	d_f		7	9	12	14	18
Maximum Thickness of Fixture	$t_{fix,max}$		45	100	160	160	160
Recommended impact screw driver with max. power output specified according to manufacturer's instructions.							
Installation Torque	$T_{inst,max}$	Nm	8	15	30	50	100

Concrete Thickness, Edge Distance and Spacing

Description	Symbol	Units	M6	M8	M10	M12	M16
Minimum Concrete Thickness	h_{min}	mm	100	100	100	130	160
Minimum Edge Distance	c_{min}		40	40	50	70	90
Minimum Spacing	s_{min}		30	40	50	70	90
Critical Edge Distance (cone)	$c_{cr,N}$		1.5 x h_{ef}				
Critical Spacing (cone)	$s_{cr,N}$		3 x h_{ef}				
Critical Edge Distance (splitting)	$c_{cr,sp}$		80	115	125	180	200
Critical Spacing (splitting)	$s_{cr,sp}$		2 x $c_{cr,sp}$				

Design Resistance — Single Anchor, No Concrete Edge or Spacing Influence

Description	Symbol	Units	M6	M8	M10	M12	M16
Embedment Depth	h_{ef}	mm	40	45	50	65	80
Minimum Concrete Thickness	h_{min}		100	100	100	130	160
Uncracked Concrete							
TENSION	N_{Rd}	kN	6.5	9.7	13.0	21.4	29.3
SHEAR	V_{Rd}		4.8	7.6	13.6	20.0	37.6

- Concrete strength is 30 MPa (cylinder) unreinforced.
- Tabulated loads are based on no edge distance, no anchor spacing and installed at min. allowable concrete thickness and embedment depth
- N_{Rd} and V_{Rd} is based on use of a Carbon Steel, Zinc plated bolt.
- All design resistances are derived from the product's ETA (European Technical Assessment).

