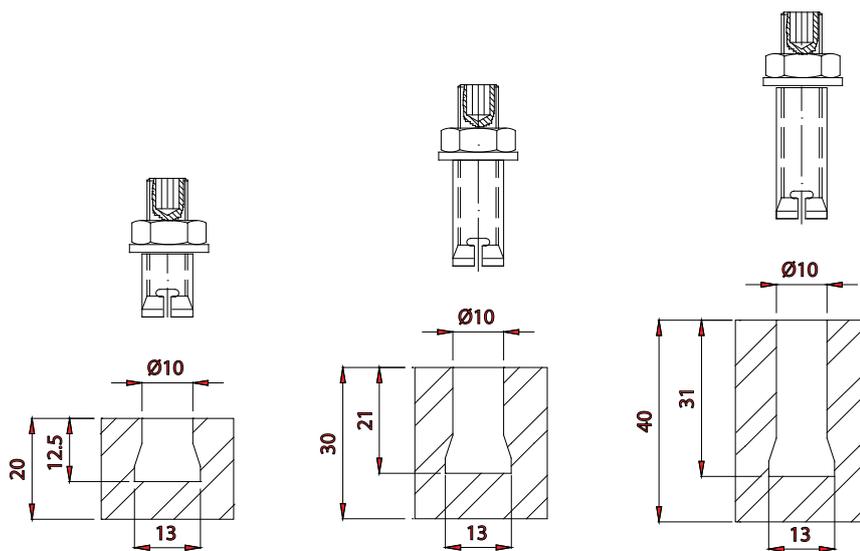


HB11 Undercut Bolt

- Suitable for natural stone connections on facades
- Applicable for minimum 20-50 mm thick stone
- Compatible drill bit and machine is provided

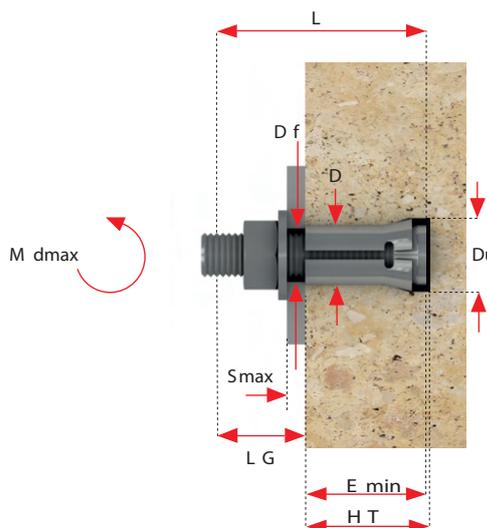
The HB11 HAZ Undercut bolt was developed to meet the special requirements in stone installation where attachments from the rear surface of stone panels are required without exerting stresses on the stone. The HB11 undercut bolt are fixed mechanically in to undercut holes that are drilled with special drilling machines and drill bits. Stone thicknesses from 20 mm to 50 mm are applicable.



Drilling rear surface of panels using special drilling machine with drilling wet system and non core drill bits.

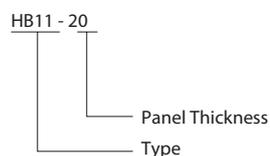
Minimal tolerances in hole size to be achieved in order for proper and secure attachment.





Product Code	Technical Details									
	Bolt Size	Stone Thickness	Drill Hole Diameter	Drill Length	Min. Embedment	Max. Fixture Thickness	Fixture Hole Diameter	Max. Torque	Bolt Length	Thread Length
	(mm)	S t (mm)	D/Du (mm)	Ht (mm)	E min (mm)	S max (mm)	Df (mm)	Mdmax (Nm)	(mm)	(mm)
B 11-20	M6x27	20	8/11	12.50	11.50	5	9	5	24	14.5
B 11-30	M8x37	30	10/13	21.00	20.00	5	9	12	34	14.5
B 11-40	M8x47	40	10/13	31.00	30.00	5	9	12	39	14.5

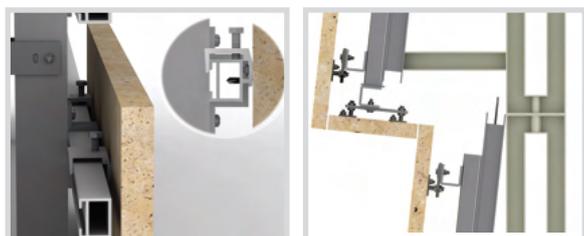
Product Code



Hard Granite Based Values

Load Direction	a degree	Allowable load (kN)		
		M6(20mm tck.)	M8(30mm tck)	M8(40mm tck)
Pull Out	0	1.20	2.50	2.80
Shear	90	1.80	2.80	3.00

Application Examples:



- Facade applications
- connections to curtain wall unitized panels
- corner stone fixing and reveal fixing

Marble Based Values

Load Direction	a degree	Allowable load (kN)		
		M6(20mm tck.)	M8(30mm tck)	M8(40mm tck)
Pull Out	0	1.10	2.20	2.50
Shear	90	1.40	2.50	2.70

A safety factor of 3.5 is taken for mean ultimate failure loads.

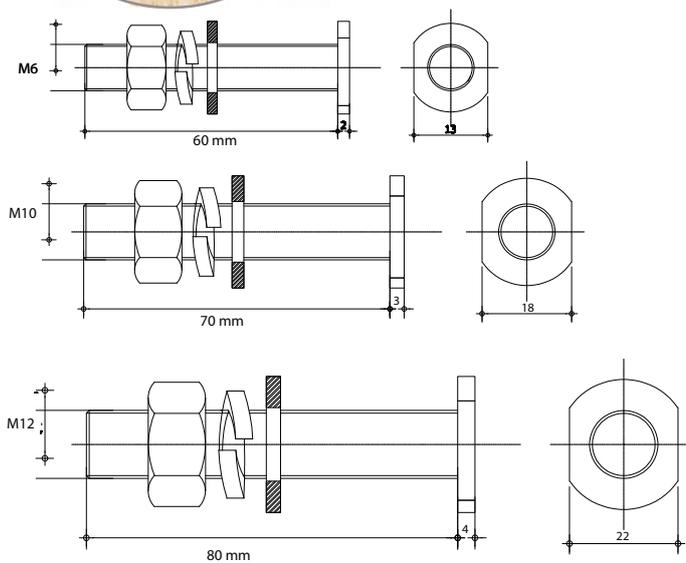
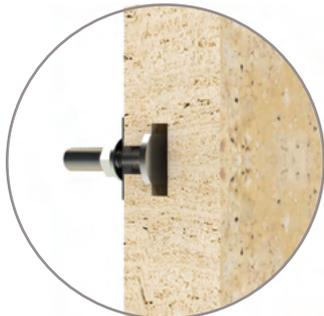
Fixing Instructions



T31 Undercut Bolt

- Suitable for natural stone connections on facades
- Applicable for minimum 30-80 mm thick stone
- Compatible drill bit and machine is provided

The T31 undercut bolt was developed to meet the special requirements in stone installation where the conventional pin method were not suitable. With the T31 bolts we can achieve attachments to the stone at the back surface. This provides freedom in design and creates an appearance where the joints will be clear of anchor tips. T31 undercut bolt is suitable for stone thicknesses between 20 and 50 mm.



Drilling Hole



Inserting Bolt



Positioning Bolt



Filling Hole

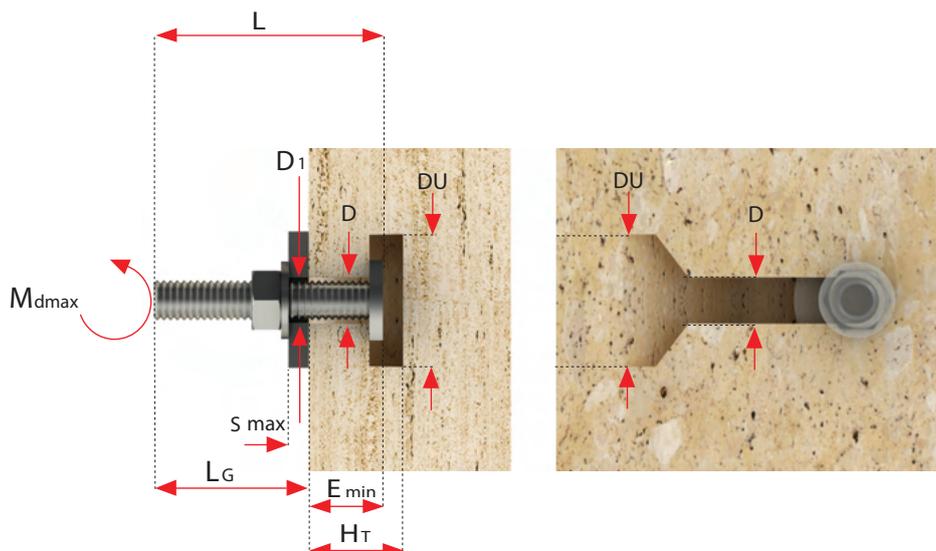


Fastening Fixture



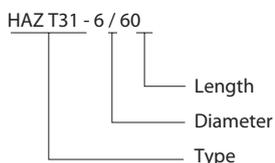
Special drilling is made with suitable equipment to achieve the slot hole for fixing the T31 undercut bolt.





Product Code	Technical Details									
	Bolt Size	Stone Thickness	Drill Hole Diameter	Drill Length	Min Embedment	Max Fixture Thickness	Fixture Hole Diameter	Max. Torque	Bolt Length	Thread Length
	(mm)	St (mm)	DU (mm)	Ht (mm)	E min (mm)	S max (mm)	D1 (mm)	M dmax (Nm)	(mm)	(mm)
HAZ T31-6/60	M6x60	30	7	21	20	8	7	7	60	40
HAZ T31-10/70	M10x70	40	11	31	30	8	11	25	70	40
HAZ T31-12/80	M12x80	50	13	41	40	8	13	60	80	40

Product Code



Application:

For fastening fixtures to natural stone

Available in:

Stainless Steel AISI 304 & AISI 316

Travertine & Limestone values

Load Direction	Allowable load values			
	a degree	M6	M10	M12
Pull Out	0	1,40	2,20	3,00
Shear	90	3,00	3,40	3,80

A safety factor of 3.5 is taken for mean ultimate failure loads

Application Examples:

attachements made on to brackets for stone installation direct on to walls.



attachements made on to brackets fro stone lintels, cornishes or soffits.



Fixing Instructions



Drilling



Cleaning



Placing Bolt



Control



Filling void



Fastening

