

INFORMATION

The torque controlled Heavy Duty Anchor Hexagon Nut is a zinc plated high performance anchor for use in cracked/non-cracked concrete and structural applications such as:

- Columns
- Guard rails
- Façades
- Staircases
- Silo installation
- Machines
- Cantilever beams

BASE MATERIAL

- Concrete C20/25 to C50/60
- Cracked Concrete
- Non-Cracked Concrete

FEATURES

- High Performance
- C1, C2 Seismic Performance
- Wide Range Of Sizes
- Fast And Secure Installation
- Through Fixing
- Three way Expansion Sleeve
- Zinc Plated Min. 5µm
- Close Spacing And Edge Distance
- Reaction To Fire Class A1
- Fire Resistant Loading

APPROVALS

European Technical Assessment
Option 1 Cracked Concrete



ETA-07/0331
Fire Resistance



ETA-07/0331



C1, C2
Seismic Performance Categories

RELATED PRODUCTS

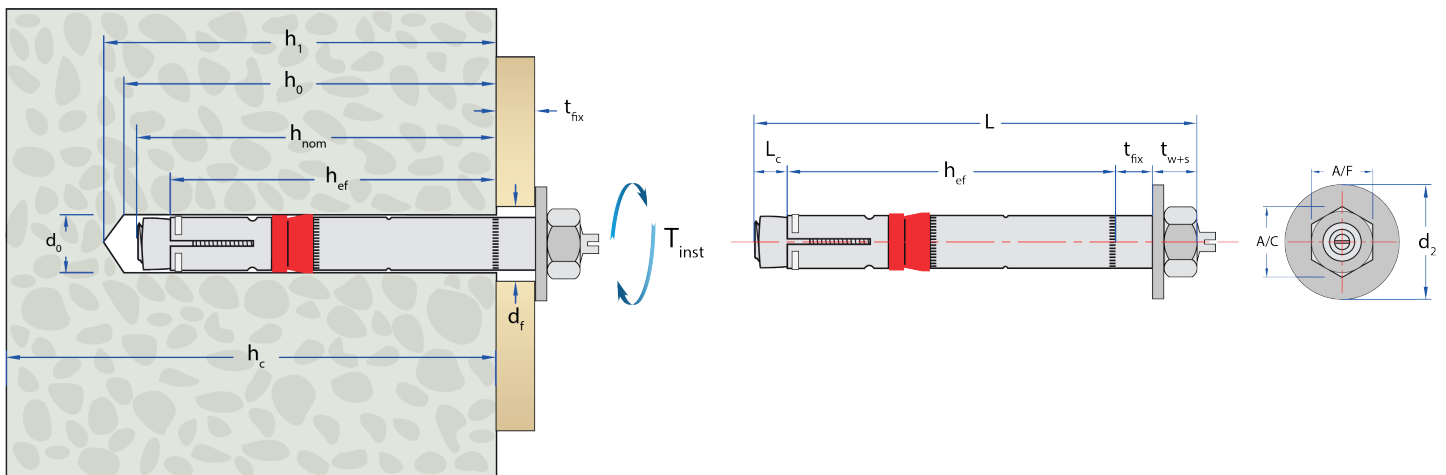


SDS+ Drill Bits



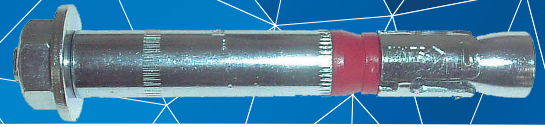
Hole Cleaning Pump

RANGE AND LOAD DATA



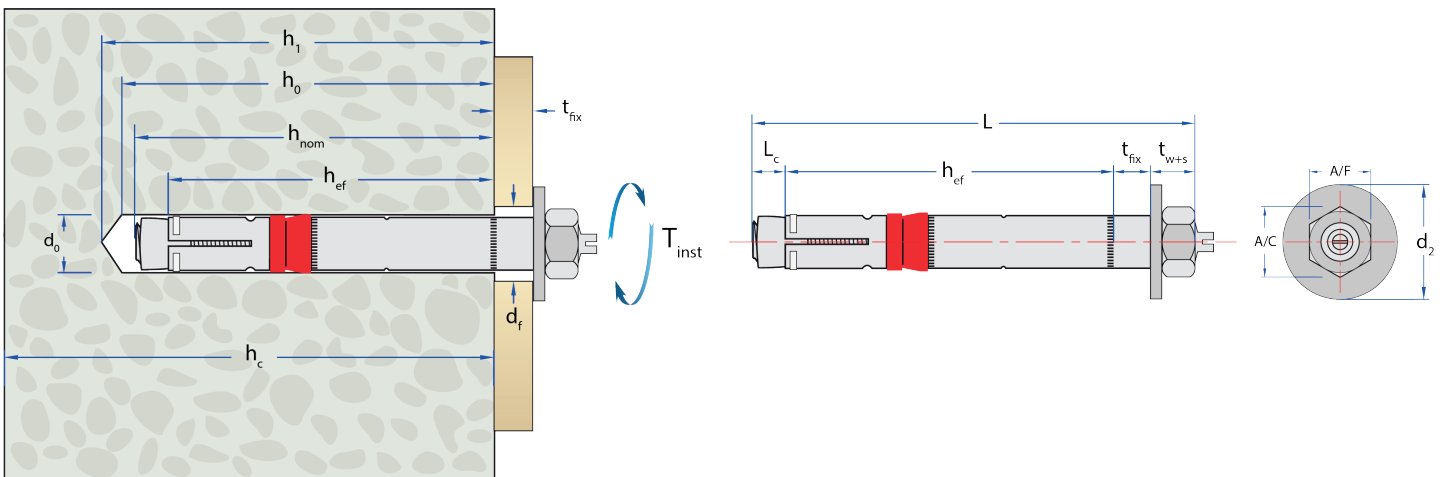
For combined loads, variations in structure thickness, reduced spacing and edge calculations download the free **Anchor Calculation Program** from www.jcpfixings.co.uk





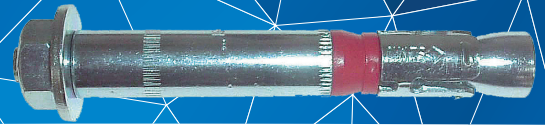
RANGE AND LOAD DATA

RANGE DATA													
Part Number	Size of Thread	Min. Structure Thickness (h_c)	Drill Hole Diameter (d_o)	Min Hole Depth (h_1)	Fixture Clearance Hole (d_f)	Cone Length (L_c)	Effective Embedment Depth (h_{ef})	Max Fixture Thickness (t_{fix})	Washer and Screw Thickness (t_{w+s})	Total Length (L)	Width Across Flats (A/F)	Washer Outer diameter (d_2)	Tightening Torque (T_{inst})
	-	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Nm
NHD0810	M8	120	12	80	14	11	60	10	8.8	90	13	20	30
NHD0830								30		110			
NHD0850								50		130			
NHD1015	M10	140	15	95	17	14	71	15	10.9	111	17	25	50
NHD1025								25		121			
NHD1045								45		141			
NHD1210	M12	160	18	105	20	16	80	10	13.8	122	19	30	80
NHD1220								20		132			
NHD1240								40		152			
NHD1270								70		182			
NHD1620	M16	200	24	130	26	22	100	20	18.8	157	24	40	160
NHD1650								50		187			



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NON-CRACKED CONCRETE

Performance Data (C20/25 non-cracked concrete)												
Size Of Thread	Effective Embedment Depth (h_{ef})	Minimum Concrete Thickness (h_{min})	Characteristic Resistance		Design Resistance		Approved Resistance		Design Spacing (s)		Design Edge Distance (c)	
			Tensile (N_{Rk})	Shear (V_{Rk})	Tensile (N_{Rd})	Shear (V_{Rd})	Tensile (N_{Ra})	Shear (V_{Ra})	Tensile	Shear	Tensile	Shear
-	mm	mm	kN	kN	kN	kN	kN	kN	mm	mm	mm	mm
M8	60	120	20.0	25.0	13.3	20.0	9.5	14.2	200	60	130	200
M10	71	140	30.2	36.0	20.1	28.8	14.3	20.5	360	100	180	260
M12	80	160	36.1	72.2	24.0	48.1	17.1	34.3	400	240	200	410
M16	100	200	50.5	101	33.6	67.3	24.0	48.0	500	300	250	500

CRACKED CONCRETE

Performance Data (C20/25 cracked concrete)												
Size Of Thread	Effective Embedment Depth (h_{ef})	Minimum Concrete Thickness (h_{min})	Characteristic Resistance		Design Resistance		Approved Resistance		Design Spacing (s)		Design Edge Distance (c)	
			Tensile (N_{Rk})	Shear (V_{Rk})	Tensile (N_{Rd})	Shear (V_{Rd})	Tensile (N_{Ra})	Shear (V_{Ra})	Tensile	Shear	Tensile	Shear
-	mm	mm	kN	kN	kN	kN	kN	kN	mm	mm	mm	mm
M8	60	120	12.0	25.0	8.0	20.0	5.7	14.2	80	150	60	290
M10	71	140	16.0	43.0	10.6	28.6	7.5	20.4	110	220	70	380
M12	80	160	25.7	51.5	17.1	34.3	12.2	24.5	240	240	120	410
M16	100	200	36.0	72.0	24.0	48.0	17.1	34.2	300	300	150	500

FIRE RESISTANCE DATA

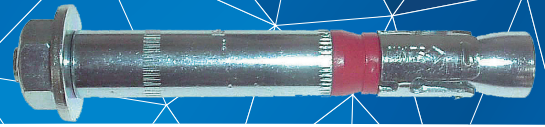


Fire Resistance Data (C20/25 to C50/60 cracked or non-cracked concrete)*											
Size Of Thread	Effective Embedment Depth (h_{ef})	Minimum Concrete Thickness (h_{min})	Design Resistance				Approved Resistance				
			Tensile ($N_{Rd,fi}$) or Shear ($V_{Rd,fi}$) (kN)**				Tensile ($N_{Ra,fi}$) or Shear ($V_{Ra,fi}$) (kN)				
-	mm	mm	30min (R30)	60min (R60)	90min (R90)	120min (R120)	30min (R30)	60min (R60)	90min (R90)	120min (R120)	
M8	60	120	1.9	1.5	1.0	0.8	1.35	1.07	0.71	0.57	
M10	71	140	4.3	3.2	2.1	1.5	3.07	2.28	1.50	1.07	
M12	80	160	6.3	4.6	3.0	2.0	4.50	3.28	2.14	1.42	
M16	100	200	11.6	8.6	5.0	3.1	8.28	6.14	3.57	2.21	

* The determination covers anchors with a fire attack from one side only. If the fire attack is from more than one side, the design method may be taken only, if the edge distance of the anchor is $c \geq 300$ mm and $\geq 2 h_{ef}$.

**For combined loads, use Anchor Calculation Program.





SUPPLEMENTARY DATA

Influence Of Concrete Strength (Cracked/Non-cracked Concrete)					
Concrete strength		C20/25	C30/37	C40/50	C50/60
Cylinder	N/mm ²	20	30	40	50
Cube	N/mm ²	25	37	50	60
Factor	-	1.0	1.22	1.41	1.55

Important Note:

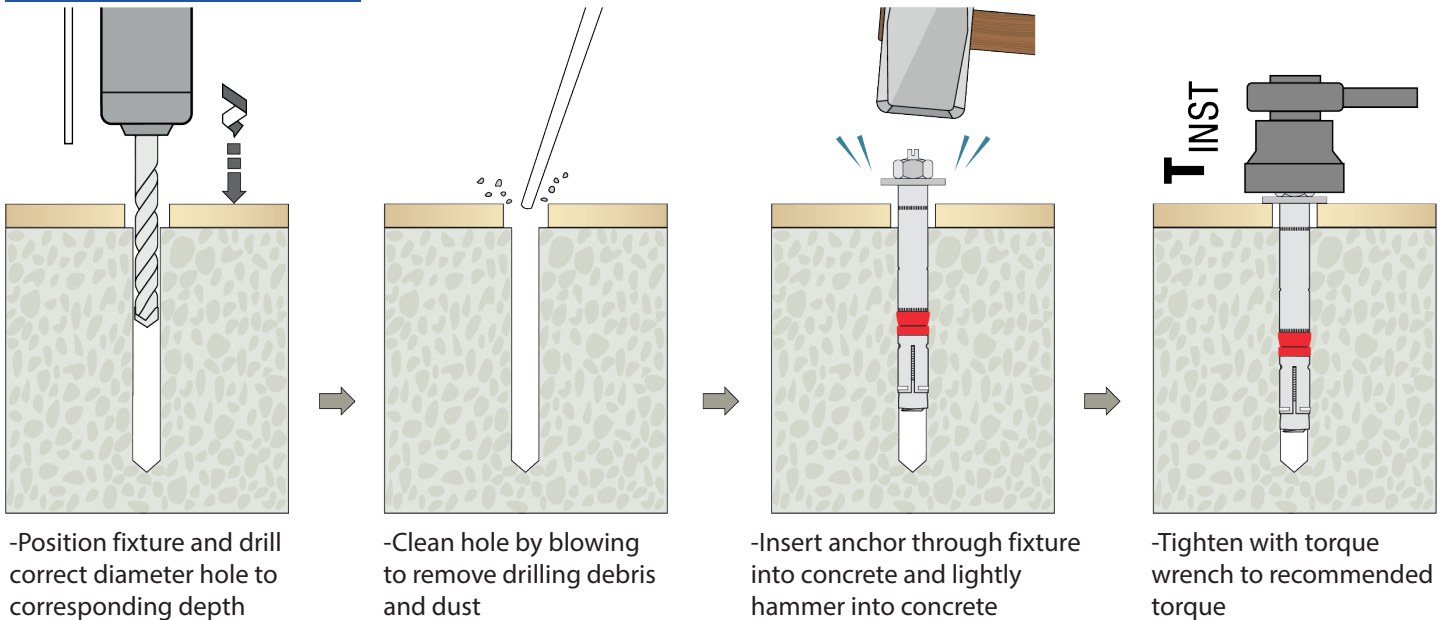
When using concrete factors ensure that loads do not exceed Steel Design Resistance.

Size Of Thread	Steel Failure					
	Tensile Resistance			Shear Resistance		
	Characteristic Resistance ($N_{Rk,s}$)	Design Resistance ($N_{Rd,s}$)*	Approved Resistance ($N_{Ra,s}$)	Characteristic Resistance ($V_{Rk,s}$)	Design Resistance ($V_{Rd,s}$)**	Approved Resistance ($V_{Ra,s}$)
-	kN	kN	kN	kN	kN	kN
M8	29.0	19.3	13.7	30	24.0	17.1
M10	46.0	30.6	21.8	48	38.4	27.4
M12	67.0	44.6	31.8	73	58.4	41.7
M16	126.0	84.0	60.0	126	100.8	72.0

* A partial safety factor (γ_{MS}) equal to 1.5 is included.

** A partial safety factor (γ_{MS}) equal to 1.25 is included.

INSTALLATION INSTRUCTIONS



INSTALLATION INSTRUCTIONS VIDEO

To watch the video and subscribe, please click on the link or scan the QR code:

[How to install a Heavy Duty Anchor](#)

