

INFORMATION

The torque controlled Heavy Duty Anchor Hexagon Bolt 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

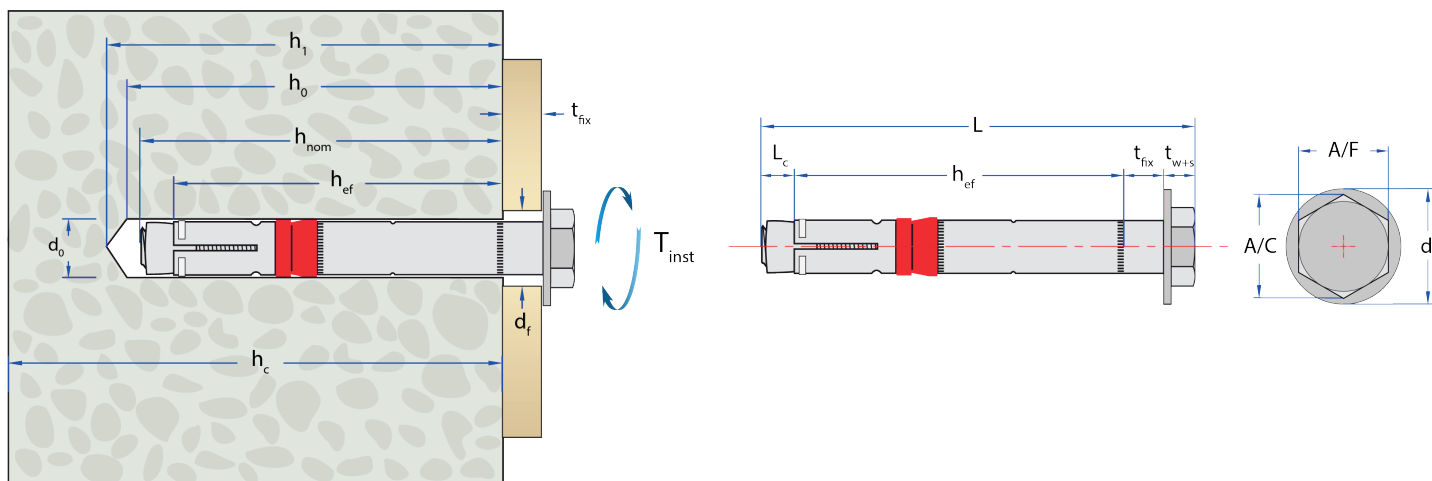


SDS+ Drill Bits



Hole Cleaning Pump

RANGE AND LOAD DATA



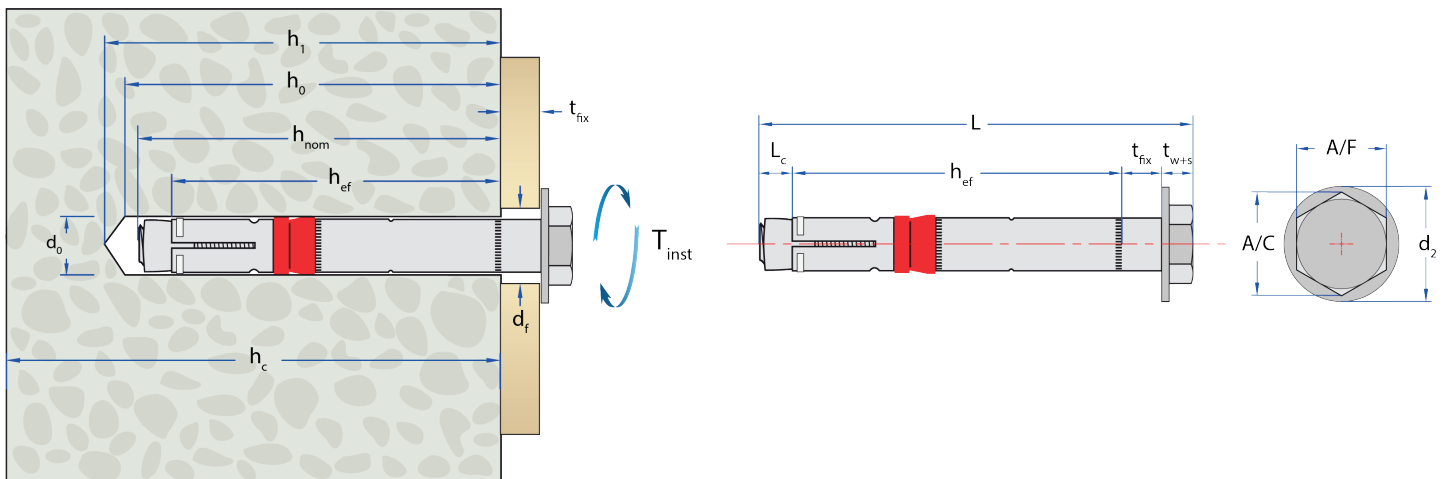
For combined loads, variations in structure thickness, reduced spacing and edge calculations download the free **Anchor Calculation Program** from www.jcpfixings.co.uk





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_i)	Fixture Clearance Hole (d_f)	Cone Length (L_c)	Effective Embedment Depth (h_{ef})	Max Fixture Thickness (t_{fx})	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
JHD0610	M6	100	10	65	12	10	50	10	6.8	75	10	18	15
JHD0630								30		95			
JHD0650								50		115			
JHD0810	M8	120	12	80	14	11	60	10	8.8	85	13	20	30
JHD0830								30		105			
JHD0850								50		125			
JHD1015	M10	140	15	95	17	14	71	15	10.9	106	17	25	50
JHD1025								25		116			
JHD1045								45		136			
JHD1210	M12	160	18	105	20	16	80	10	13.8	117	19	30	80
JHD1220								20		127			
JHD1240								40		147			
JHD1270								70		177			
JHD1610	M16	200	24	130	26	22	100	10	18.8	130	24	40	160
JHD1620								20		150			
JHD1650								50		180			
JHD2030	M20	250	28	160	31	26	125	30	21.8	192	30	50	280
JHD2060								60		222			
JHD2460	M24	300	32	180	35	32	150	60	26.5	262	36	60	280





NON-CRACKED CONCRETE

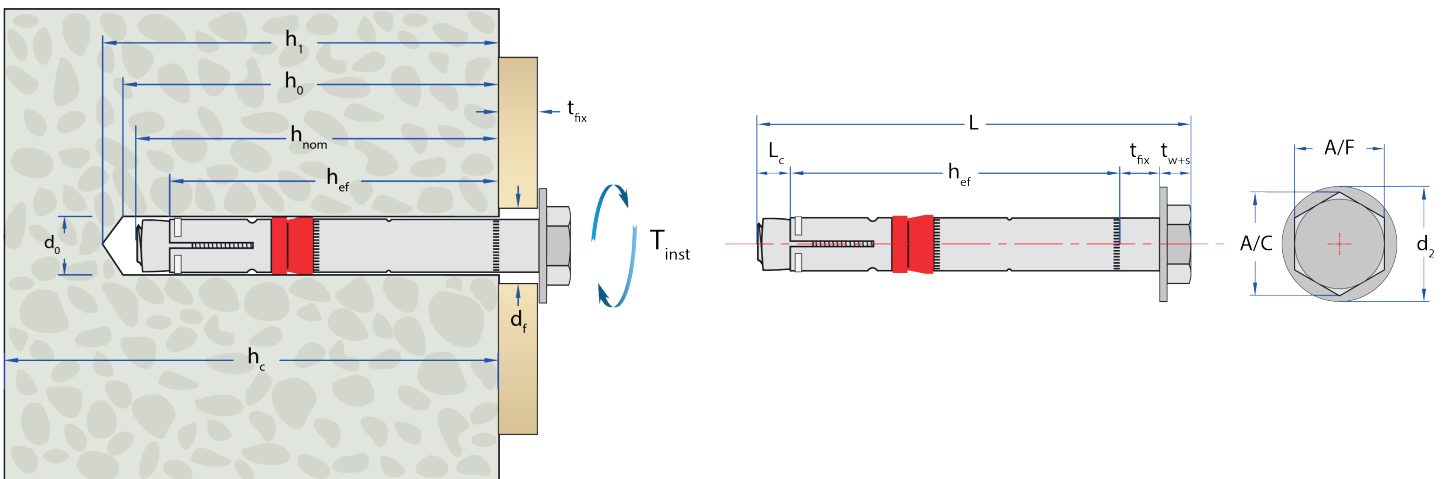
Performance Data (C20/25 non-cracked concrete)

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
M6	50	100	16.0	18.0	10.6	14.4	7.5	10.2	200	60	110	160
M8	60	120	20.0	30.0	13.3	24.0	9.5	17.1	200	100	130	240
M10	71	140	30.2	48.0	20.1	38.4	14.3	27.4	360	200	180	360
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
M20	125	250	70.6	141.1	47.0	94.0	33.5	67.1	630	380	320	610
M24	150	300	92.8	185.5	61.8	123.6	44.1	88.2	450	450	230	750

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
M6	50	100	5.0	18.0	3.3	14.4	2.3	10.2	50	140	50	230
M8	60	120	12.0	33.4	8.0	22.2	5.7	15.8	80	180	60	320
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
M20	125	250	50.3	100.6	33.5	67.0	23.9	47.8	380	380	190	610
M24	150	300	66.1	132.2	44.0	88.1	31.4	62.9	450	450	230	730





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)
M6	50	100	1.0	0.8	0.6	0.4	0.7	0.6	0.4	0.3
M8	60	120	1.9	1.5	1.0	0.8	1.4	1.1	0.7	0.6
M10	71	140	4.3	3.2	2.1	1.5	3.1	2.3	1.5	1.1
M12	80	160	6.3	4.6	3.0	2.0	4.5	3.3	2.1	1.4
M16	100	200	11.6	8.6	5.0	3.1	8.3	6.1	3.6	2.2
M20	125	250	18.3	13.5	7.7	4.9	13.1	9.6	5.5	3.5
M24	150	300	26.3	19.5	12.6	9.2	18.8	13.9	9.0	6.6

* 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.

Steel Failure

Size Of Thread	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
M6	16.0	10.6	7.5	18.0	14.4	10.2
M8	29.0	19.3	13.7	30.0	24.0	17.1
M10	46.0	30.6	21.8	48.0	38.4	27.4
M12	67.0	44.6	31.8	73.0	58.4	41.7
M16	126.0	84.0	60.0	126.0	100.8	72.0
M20	196.0	130.6	93.2	150.0	120.0	85.7
M24	282.0	188.0	134.2	200.0	160.0	114.2

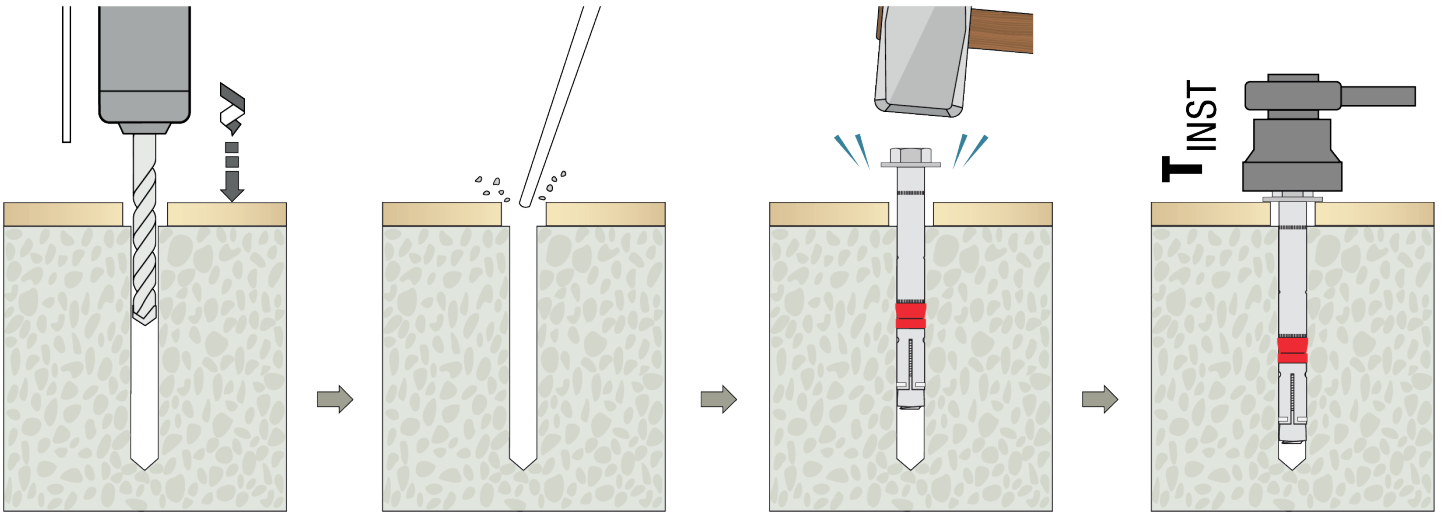
* A partial safety factor (γ_{MS}) equal to 1.5 is included.

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





INSTALLATION INSTRUCTIONS



-Position fixture and drill correct diameter hole to corresponding depth

-Clean hole by blowing to remove drilling debris and dust

-Insert anchor through fixture into concrete and lightly hammer into concrete

-Tighten with torque wrench to recommended torque

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](#)

