

	<h1>TECHNICAL DATA SHEET</h1>	Reference	FT TFDEX inglés
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Designation: Concrete Screw Anchor		Codes	TFDEX, TFDAV

TFDEX



TFDAV



1.- CHARACTERISTICS

- Metal anchor undercut type.
- No tension applied on base material, shorter spacing and closer to the edges.
- Male thread.
- Use in cracked and non-cracked concrete
- Use for medium-high loads
- Produced in steel with a Special Silver Ruspert covering with a high resistance to corrosion 500-1000 hours in Salt spray chamber.
- Very fast and quick to install and uninstall.
- Variety of lengths and diameter: assembly flexibility.
- Hexagonal and countersunk heads.

2.- MATERIALS

ITEM	COMPONENT	MATERIAL
TFDEX / TFDAV	SCREW	SAE 10B21 steel, silver ruspert

3.- DIMENSIONS

SIZE	#6	#7	#10	#12	#16
Hexagonal head code	TFDEX06XXX	TFDEX07XXX	TFDEX10XXX	TFDEX12XXX	TFDEX16XXX
d _p : axis diameter [mm]	6,3	7,5	10,5	12,5	16,5
l: length [mm]	30 ÷ 60	35 ÷ 100	55 ÷ 130	65 ÷ 140	80 ÷ 160
l _r : Threaded length [mm]	40	50	60	70	80
D: washer diameter [mm]	11,8	14,2	18	22,3	30,5
K: head thickness [mm]	5,4	6,6	8,1	9,2	12,8
s _w : spanner [mm]	8	10	13	15	18

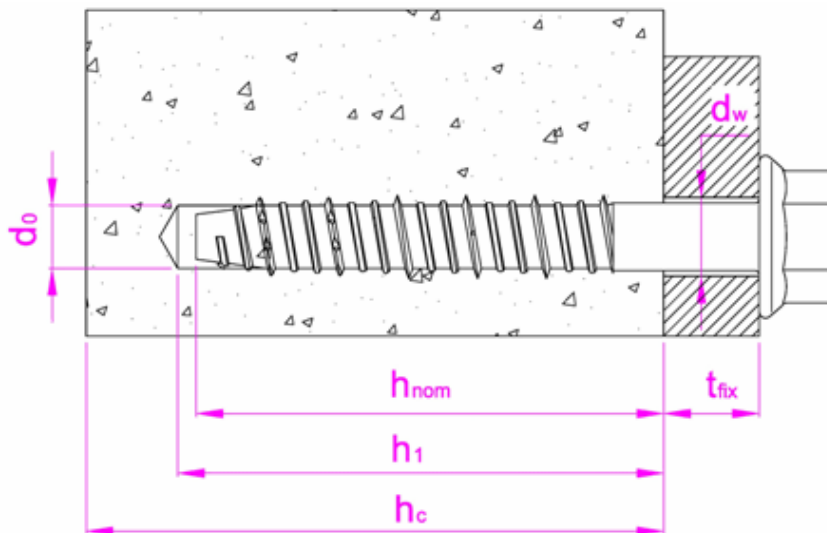
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SIZE		#7
Countersunk head code		TFDEX07XXX
d_p : axis diameter	[mm]	7,5
l : length	[mm]	35 ÷ 100
l_r : Threaded length	[mm]	50
D : washer diameter	[mm]	14,2
K : head thickness	[mm]	6,6
s_w : spanner	[mm]	10

4.- INSTALLATION DATA

Hexagonal head

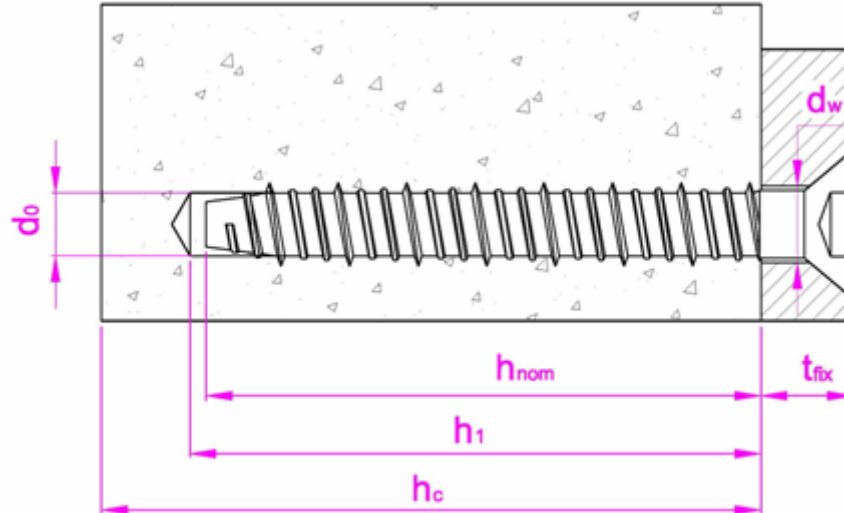


SIZE	#6			#7		#10		#12		#16		
Code	TFDEX06XXX			TFDEX07XXX		TFDEX10XXX		TFDEX12XXX		TFDEX16XXX		
d_0 : drill diameter	[mm]			5		6		8		10		
d_w : fixture diameter	[mm]			7		9		12		18		
	L=30	L=40	L ≥ 50	L ≤ 45	L ≥ 60	L = 55	L ≥ 65	L = 65	L ≥ 75	L = 80	L ≥ 115	
h_1 : minimum drill depth	[mm]	35	45	55	40	60	55	70	65	80	80	90
h_{nom} : embedment depth	[mm]	25	35	45	30	50	45	60	55	70	70	80
h_{ef} : min. effective depth	[mm]	21	31	41	24	44	39	54	47	62	64	74
h_c : base material min. thck.	[mm]	100			100	100	100	108	100	124	140	148
t_{fix} : max. fixture thickness	[mm]	5	L - 45		5	L - 50	10	L - 60	10	L - 70	10	L - 80
T_{ins} : Installation Torque	[Nm]	12			20	20	50	50	80	80	150	150
s_{cr} : critical spacing	[mm]	123			72	132	117	162	141	186	192	222
c_{cr} : critical edge distance	[mm]	62			36	66	59	81	71	93	96	111

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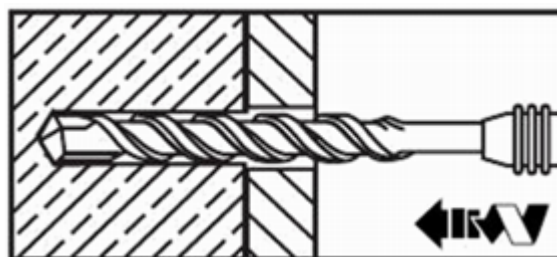
Designation: Concrete Screw Anchor


Countersunk head

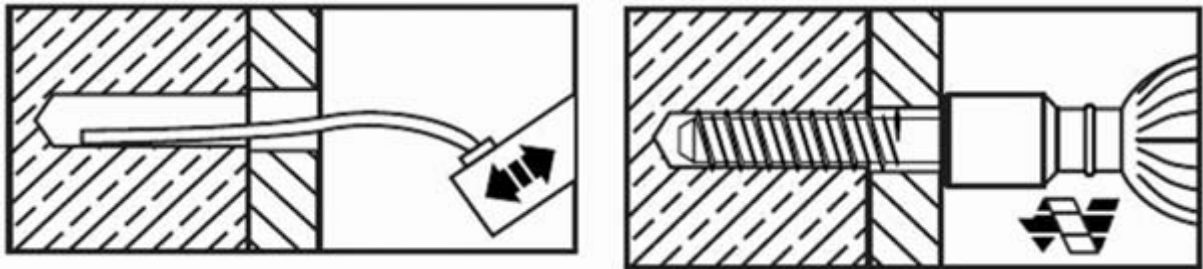


SIZE		#7
code		TFDEX07XXX
d_0 : drill diameter	[mm]	6
d_w : fixture diameter	[mm]	9 + Ø12.5 countersunk
h_1 : minimum drill depth	[mm]	60
h_{nom} : embedment depth	[mm]	50
h_{ef} : min. effective depth	[mm]	44
h_c : base material min. thck.	[mm]	100
t_{fix} : max. fixture thickness	[mm]	L - 50
T_{ins} : Installation Torque	[Nm]	20
s_{cr} : critical spacing	[mm]	132
c_{cr} : critical edge distance	[mm]	66

5.- INSTALLATION PROCEDURE




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- The concrete to be well compacted, e.g. without significant voids.
- Anchors to be installed ensuring not less than the specified embedment depth, The edge distance and spacing to be kept to the specified values, no minus tolerances to be allowed.
- Drill to the minimum depth and diameter specified, maintaining perpendicularity with the surface of the base material. Fixture holes themselves can be used as template.
- When drilling holes, care to be taken not to damage reinforcement in close proximity to the hole's position. Action to be taken in the event that drilling is aborted, e.g. due to encountering reinforcement. It is recommended to either install the anchors immediately beside the aborted drill hole, provide that anchoring depth is increased by the depth of the aborted drill hole, or make a new drilling at a minimum distance away of two the depth of the aborted hole. Alternatively, a smaller distance may be chosen, provided the aborted drill hole is filled with high strength mortar. However, unless the aborted drill hole is filled with mortar, it is not permissible under a shear or oblique tension load for it to be closer than installation depth h_{nom} in the direction of load application.
- Thoroughly clean hole from dust and drilling fragments.
- For holes to be subjected to temperatures below 0 °C, measures to be taken to avoid the ingress of water into the hole and subsequent risk of local cracking of the concrete due to ice expansion.
- Install concrete screw anchor with an impact torque wrench to reach the minimum drill depth shown on installation chart.
- In case of fixture holes with diameters higher than specified use washers of bigger diameter and thickness, but in this case it is not assured a correct distribution of shear loads amongst all the anchors of a same group. The shear load will be applied on those anchors with the correct diameter on the fixture.

6.- CHARACTERISTIC RESISTANCES

6.1.- Characteristic resistances* in concrete C20/25** for an isolated anchor (without spacing and edge distances effects) are as per this table:

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SIZE		#6			#7		#10		#12		#16	
Silver ruspert	Code	TFDEX06XXX			TFDEX07XXX TFDAV07XXX		TFDEX10XXX		TFDEX12XXX		TFDEX16XXX	
	Length [mm]	L = 30	L = 40	L ≥ 50	L ≤ 45	L ≥ 60	L = 55	L ≥ 65	L = 65	L ≥ 75	L = 80	L ≥ 115
	N _{R,k} Tension [kN]	2.4	4.4	7.1	6.1	10.8	9.5	16.0	14.8	22.5	22.5	29.1
	V _{R,k} : Shear [kN]	1.9	3.5	<u>4.2</u>	5.9	<u>7.5</u>	12.3	<u>13.8</u>	16.2	<u>19.1</u>	<u>31.1</u>	<u>31.1</u>

1 kN ≈ 100 Kg

* The characteristic resistance of an anchor is that with a 95% probability to be achieved in a tension test. It depends on the mean ultimate resistance, the number of tests and the scatter of the results.

** Concrete C20/25 per ENV206: characteristic resistance for a specimen ≥ 28 days old:

- Cylindrical sample ø 150 mm. x 300 height ≥ 200 N/mm²
- Cubic sample 150 mm. side ≥ 250 N/mm²

Underline and cursive values correspond to steel failure.

Characteristic resistance for tension and shear must be considered separately

6.2.- Recommended safety factors

SAFETY COEFFICIENTS		REDUCTION COEFFICIENT FOR RESISTANCES		INCREASING COEFFICIENT FOR LOADS
		CONCRETE FAILURE	<u>STEEL FAILURE</u>	
Silver Ruspert	Tension	1.80	--	1.4
	Shear	1.50	<u>1.50</u>	

7.- EXAMPLES OF USE

