

# THDEX

Denomination: **THDEX ANCHOR**

Codes: **THDEX, THDAV, THPAN, THTRU**

Reference: **FT THDEX-en**

Date: **06/06/2016**

Revision: 3

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THDEX



THDAV



THPAN



THTRU



### CHARACTERISTICS

- Pilot hole needed; thread is created by the anchor during the installation process.
- Functioning by thread - concrete mechanical interlock.
- Use for medium loads.
- Direct installation, not torque wrench needed.
- It can be removed, leaving concrete surface flat.
- Use in cracked and uncracked concrete.
- Use for static or cuasi-static loads.
- Suitable when reduced edge distances or anchor spacing required
- Approved for fire resistance R30 to R120
- Silver ruspert coating

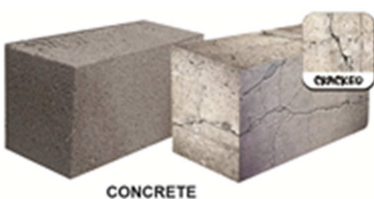
### APPLICATIONS

- Structural fixings in cracked and uncracked concrete in indoor conditions.
- Glazing, windows and storefronts
- Racking and shelving
- Attaching railings, handrails and ledgers (inside environment).
- Fixings of steel beams, channels, machinery, boilers, signals, stadium seatings, façade substructures, channels, etc.
- Fixings of wood structures to concrete.

View web profile:

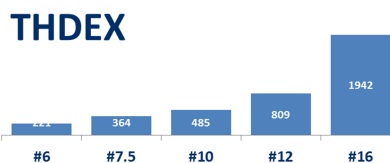


### BASE MATERIALS



CONCRETE

### RECOMMENDED TENSION RESISTANCES IN UNCRACKED CONCRETE [kg]



### THDEX

### SIZES

#6 – #16

### DRILL CONDITION



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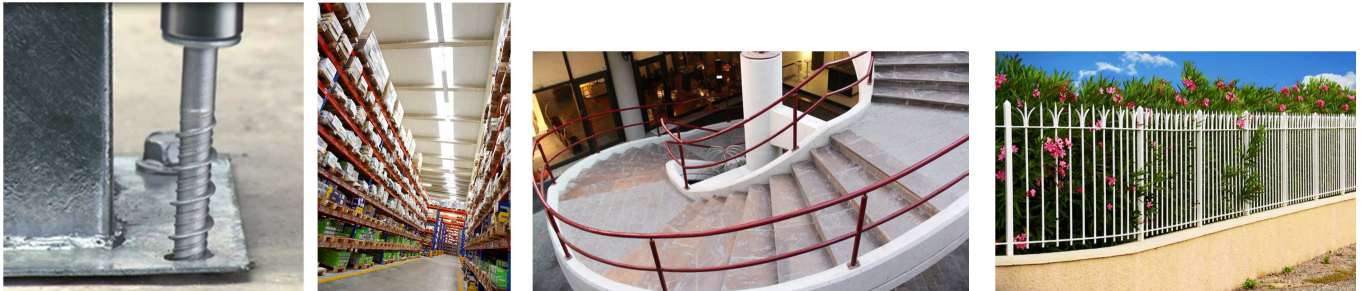
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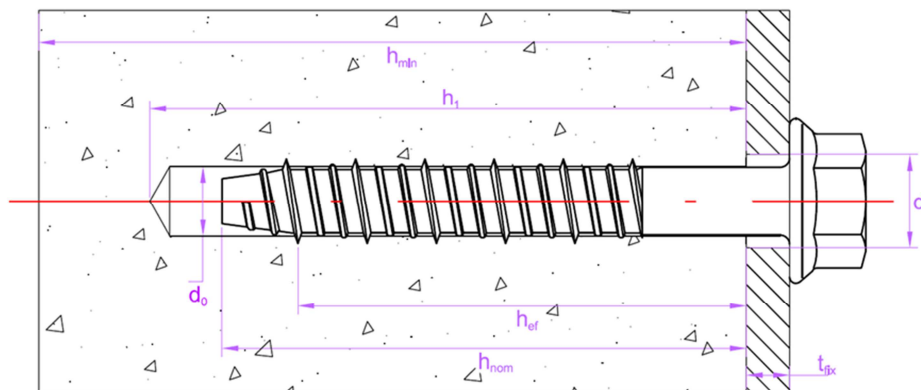
## APPLICATION EXAMPLES



## 1. RANGE

ITEM	CÓDE	SIZE	PICTURE	COMPONENT	MATERIAL
1	THDEX	#6 to #16		Hexagonal concrete screw	Carbon steel, silver ruspert coating
2	THDAV	#7.5		Countersunk concrete screw	Carbon steel, silver ruspert coating
3	THPAN	#7.5		Pan head concrete screw	Carbon steel, silver ruspert coating
4	THTRU	#7.5		Truss head concrete screw	Carbon steel, silver ruspert coating

## 2. INSTALLATION DATA



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Code	Head version	ETA approved	$d_0$ : drill bit	$d_f$ : clearance hole in fixture	$sw$ : spanner / drill bit	$h_{min}$ : min thickness of concrete member	$h_1$ : depth drill hole	$h_{nom}$ : embedment depth	$h_{ef}$ : effective depth	$T_{ins}$ : installation torque	$t_{fix}$ : fixture thickness	$s_{cr}$ : critical spacing	$c_{cr}$ : critical edge distance	$s_{min}$ : minimum spacing	$C_{min}$ : minimum edge distance
			[mm]	[mm]	[-]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[Nm]	[mm]	[mm]	[mm]
THDEX06030	Hexagonal		5	7	8	100	40	33	20	7	2	102	51	45	45
THDEX06040							12								
THDEX06050							5								
THDEX06060							15								
THDEX07035	Hexagonal	✓	6	9	10	100	43	33	20	20	2	126	63	45	45
THDEX07045							12								
THDEX07060							5								
THDEX07080							25								
THDEX07100							45								
THDEX10055	Hexagonal	✓	8	12	13	100	60	50	35	50	5	135	67	50	50
THDEX10065							5								
THDEX10075							15								
THDEX10090							30								
THDEX10110							50								
THDEX10130							70								
THDEX12065	Hexagonal	✓	10	14	15	100	75	60	42	80	5	156	78	60	60
THDEX12075						5									
THDEX12085						15									
THDEX12100						30									
THDEX12120						50									
THDEX12140						70									
THDEX16080	Hexagonal	✓	14	18	18	102	95	75	51	120	5	258	129	100	100
THDEX16115						5									
THDEX16135						25									
THDEX16160						50									
THDAV07072	Countersunk	✓	6	9	T30	100	65	55	42	20	17	126	63	45	45
THDAV07092											37				
THDAV07112											57				
THDAV07132											77				
THDAV07152											97				
THPAN07050	Pan		6	9	T40	100	43	33	20	20	17	126	63	45	45
THTRU07050	Truss		6	9	T30	100	43	33	20	20	17	126	63	45	45

Critical distances are those where anchors in an anchor group are not influenced by one another with regard to tension load effects. For smaller distances, down to minimum distances, corresponding reduction coefficients must be applied.

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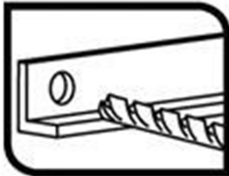
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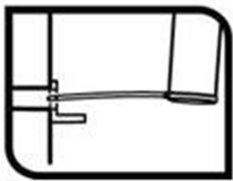
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## 4. PRODUCT INSTALLATION



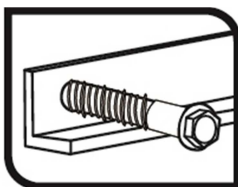
### 1. DRILLING

Check the concrete base is compact and porosity is insignificant.  
Suitable for wet, dry or flooded drill holes.  
Use drill in hammer mode.  
Drill to the specified diameter and depth values



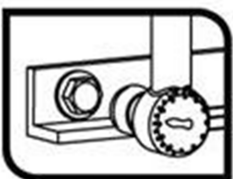
### 2. BLOW AND CLEAN

Clear the drill holes completely of dust and fragments  
Use air pump and brush.



### 3. INSTALL

The installation shall be done through the fixture baseplate.  
Anchor could be installed using a torque wrench applying the nominal installation torque or by using an electrical impact driven; power input: 500 W, torque 50 - 250 Nm (e.g: Bosch GDS 18E).  
Once installed it can be verified the total length of the anchor through the letter on bolt tip



## 5. RESISTANCES

Characteristic resistances for C20/25 concrete for an isolated anchor (without considering anchor-to-anchor or anchor-to-edge distance effects).

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Code	Head version	ETA approved	Tension resistance in C20/25 concrete		Coefficient for higher concrete types			Tension partial safety factor	Shear resistance in concrete		Shear partial safety factor						
			Uncracked	Cracked	C30/37	C40/45	C50/60		Uncracked	Cracked	Uncracked	Cracked					
			N <sub>Rk</sub> [kN]	N <sub>Rk</sub> [kN]	Ψ [-]	Ψ [-]	Ψ [-]	γ <sub>M</sub> [-]	V <sub>Rk</sub> [kN]	V <sub>Rk</sub> [kN]	γ <sub>M</sub> [-]	γ <sub>M</sub> [-]					
THDEX06030	Hexagonal		3.2	--	1.22	1.41	1.55	1.8	4.5	--	1.50	--					
THDEX06040																	
THDEX06050			5.5									7.1		1.25			
THDEX06060																	
THDEX07035	Hexagonal		4.3	--	1.22	1.41	1.55	1.8	4.5	--	1.50	--					
THDEX07045																	
THDEX07060		✓	9	6								7.5	7.5	1.25	1.25		
THDEX07080		✓															
THDEX07100	✓																
THDEX10055	Hexagonal		9,3	--	Uncrack: 1.08 Cracked: 1.22	Uncrack: 1.15 Cracked: 1.41	Uncrack: 1.19 Cracked: 1.55	1.8	10,4	--	1,50	--					
THDEX10065		✓	12	9													
THDEX10075		✓															
THDEX10090		✓												15,2	10,9	1,50	1,50
THDEX10110		✓															
THDEX10130		✓															
THDEX12065	Hexagonal		16.1	--	Uncrack: 1.04 Cracked: 1.22	Uncrack: 1.07 Cracked: 1.41	Uncrack: 1.09 Cracked: 1.55	1.8	13.7	--	1.50	--					
THDEX12075		✓	20	12													
THDEX12085		✓															
THDEX12100		✓												18,9	13,5	1,50	1,50
THDEX12120		✓															
THDEX12140		✓															
THDEX16080	Hexagonal		23.7	--	Uncrack: 1.04 Cracked: 1.12	Uncrack: 1.07 Cracked: 1.23	Uncrack: 1.09 Cracked: 1.30	1.5	36.7	--	1.50	--					
THDEX16115		✓	40	30													
THDEX16135		✓												57.9	57.4	1.25	1.50
THDEX16160		✓															
THDAV07072	Countersunk	✓	9	6	1.22	1.41	1.55	1.8	7.5	7.5	1.25	1.25					
THDAV07092		✓															
THDAV07112		✓															
THDAV07132		✓															
THDAV07152		✓															
THPAN07050	Pan		4.3	--	1.22	1.41	1.55	1.8	4.5	--	1.50	--					
THTRU07050	Truss		4.3	--	1.22	1.41	1.55	1.8	4.5	--	1.50	--					

1 kN ≈ 100 kg

A load safety factor of  $\gamma_F = 1,4$  is recommended

Design example:

Fixing a tension load of 500 kg (= 4,91 kN) in C30/37 cracked concrete using a THDEX #12 anchor.

Check to be done: Design load < Design resistance

Design load = service load \* load safety factor = 4,91 \* 1,4 = 6,87 kN

Design resistance = characteristic resistance \* concrete coefficient / tension partial safety coefficient = 12 \* 1,22 / 1,8 = 8.13 kN

Check: 6,87 < 8.13 kN: anchorage is safe

For complex anchor designs we recommend our anchor design software INDEXcal

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## 6. OFFICIAL DOCUMENTATION

The following documents are available through our Sales Department or on our official website: [www.indexfix.com](http://www.indexfix.com)

- European Technical Assessment ETA 15/0017 for use in concrete, according to ETAG 001 guideline, option 1, from #7.5 to #16
- Declaration of Performances: DoP THDEX-en
- Certificate of constancy of performances: 1219-CPR-0091.
- INDEXcal: anchor calculation software.