

WT7 Throughbolt Anchors

High-performance throughbolt anchor for non-cracked concrete

Anchor types



WT7
(M8 – M12)

- **WT7** is a high-performance zinc-plated throughbolt anchor with two installation depths for use in non-cracked concrete in indoor environments.

Features and benefits

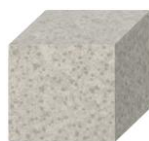
- ETA according to EAD 330232-00-0601 for use in non-cracked concrete (option 7)
- Simple and quick installation procedure
- For medium to heavy loads
- 2 anchoring depths provide maximum installation and design flexibility
- Can be installed as pre-fixing (before application of a fixing plate) or as through-fixing (through hole of the fixing plate).
- Fire resistance class R30-R120 for design of anchorages under exposure to fire

Suitable base materials

- Non-cracked concrete, C20/25 to C50/60
- Stone



Concrete
(non-cracked)



Stone

Typical applications

- Anchor plates
- Curtain wall
- Machinery
- Racking

Approvals and certificates

- European Technical Assessment
- Expert Opinion

ETA-21/0366, 23 April 2021

GS 6.1/25-045-1



1. Product details

Article	Description	Size	Length	Max. fixture thickness ¹⁾	Fixture hole clearance
		[-]	L [mm]	t _{fix,max} [mm]	d _f [mm]
608108075	WT7 8x75	M8	75	18 / 5	9
608108100	WT7 8x100	M8	100	43 / 30	9
608110100	WT7 10x100	M10	100	33 / 20	12
608110120	WT7 10x120	M10	120	53 / 40	12
608110140	WT7 10x140	M10	140	73 / 60	12
608112100	WT7 12x100	M12	100	23 / 8	14
608112120	WT7 12x120	M12	120	43 / 28	14

1) Max. fixture thickness is indicated at reduced / standard embedment depths



2. Packaging details

Article	Description	Pack 1		Pack 2	
		[pcs]	EAN13	[pcs]	EAN13
608108075	WT7 8x75	100	8719942170086	600	8719942170093
608108100	WT7 8x100	100	8719942170116	400	8719942170123
608110100	WT7 10x100	100	8719942170147	400	8719942170154
608110120	WT7 10x120	50	8719942170178	300	8719942170185
608110140	WT7 10x140	50	8719942170208	200	8719942170215
608112100	WT7 12x100	50	8719942170239	200	8719942170246
608112120	WT7 12x120	50	8719942170260	200	8719942170277

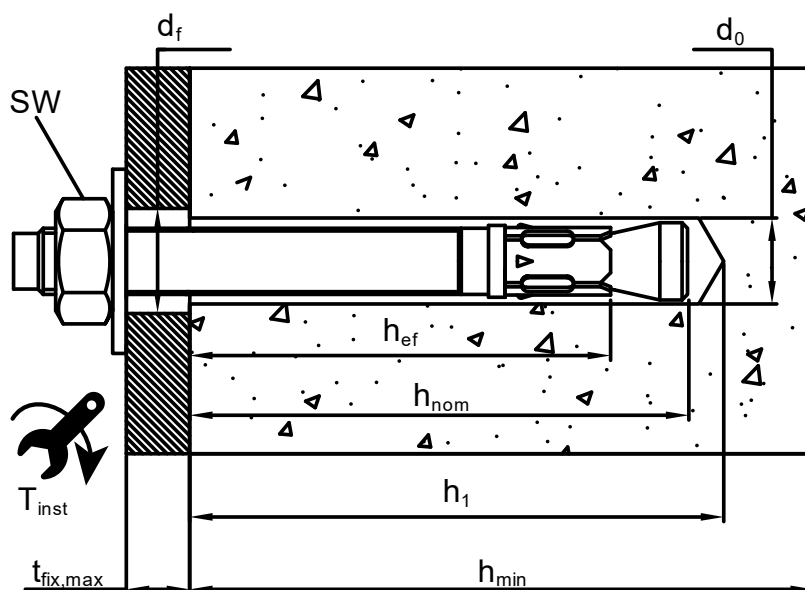
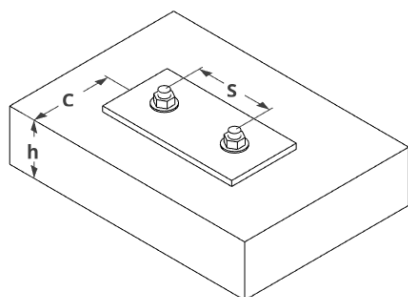
3. Mechanical properties

Component	Material
Anchor Shaft	Carbon steel galvanised $\geq 5 \mu\text{m}$ ISO 4042 A2, cold forged
Washer	DIN 125, DIN 9021 or DIN 440 galvanised $\geq 5 \mu\text{m}$ ISO 4042 A2
Nut	DIN 934 class 6 galvanised $\geq 5 \mu\text{m}$ ISO 4042 A2, class 6
Expansion clip	Carbon steel galvanised $\geq 5 \mu\text{m}$ ISO 4042 A2

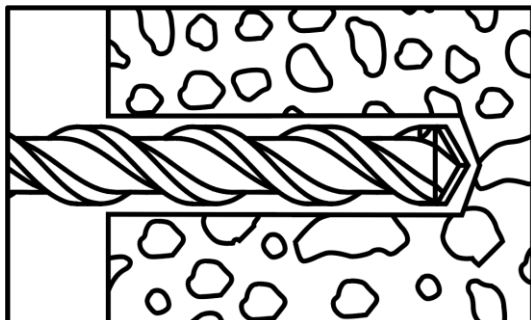
4. Installation data

4.1 Installation parameters

Anchor Type			WT7					
Anchor Size			M8	M8	M10	M10	M12	M12
Embedment depth			RED	STD	RED	STD	RED	STD
Nominal embedment depth	h_{nom}	[mm]	46.5	59.5	53.5	66.5	62.0	77.0
Effective embedment depth	h_{ef}	[mm]	35	48	42	55	50	65
Drill hole diameter	d_0	[mm]	8	8	10	10	12	12
Depth of drill hole	$h_1 \geq$	[mm]	50	65	60	75	70	85
Diameter of clearing hole in the fixture	d_f	[mm]	9	9	12	12	14	14
Max fixture thickness	$t_{fix,max}$	[mm]	L – 57	L – 70	L – 67	L – 80	L – 77	L – 92
Minimum concrete member thickness	h_{min}	[mm]	100	100	100	110	100	130
Minimum edge distance	c_{min}	[mm]	40	40	50	50	70	70
Minimum anchor spacing	s_{min}	[mm]	40	40	50	50	70	70
Characteristic spacing	$S_{cr,N}$	[mm]	105	144	126	165	150	195
Characteristic edge distance	$C_{cr,N}$	[mm]	53	72	63	83	75	98
Characteristic spacing (splitting)	$S_{cr,sp}$	[mm]	140	192	168	220	200	260
Characteristic edge distance (splitting)	$C_{cr,sp}$	[mm]	70	96	84	110	100	130
Tightening torque	T_{inst}	[Nm]	20	20	35	35	60	60
Installation wrench	SW	[mm]	13	13	17	17	19	19

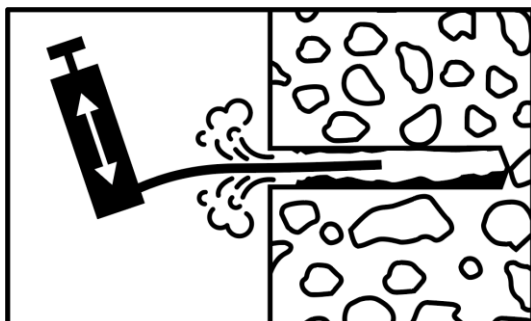


4.2 Installation procedure for concrete

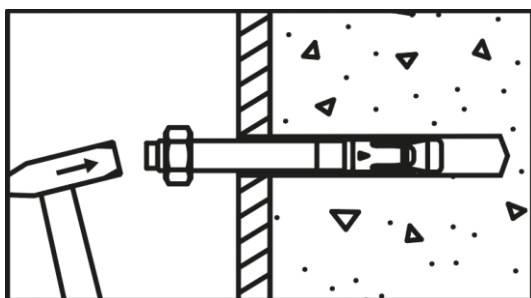


Drill the hole with rotary hammer drilling machine.

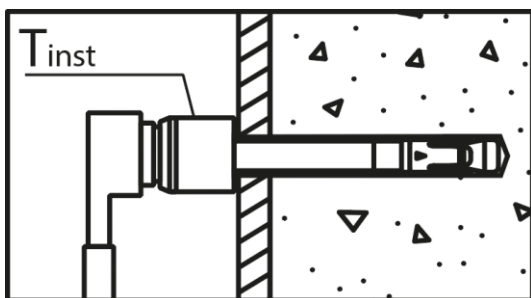
Drill to a required depth.



Clean the drill hole with a hand pump.



Hammer the anchor into the hole.



Tighten the nut to the specified tightening torque T_{inst} .

5. Performance information

5.1 Loading information for WT7 in non-cracked C20/25 concrete¹⁾

Anchor Type			WT7					
Anchor Size			M8	M8	M10	M10	M12	M12
Embedment depth			RED	STD	RED	STD	RED	STD
Nominal embedment depth	h_{nom}	[mm]	46.5	59.5	53.5	66.5	62.0	77.0
Tension resistance								
Characteristic resistance	N_{Rk}	[kN]	10.0	<u>13.0</u>	13.3	19.0	17.3	25.7
Design resistance	N_{Rd}	[kN]	6.6	<u>9.2</u>	8.9	12.6	11.6	17.1
Recommended resistance	N_{Rec}	[kN]	4.7	<u>6.6</u>	6.3	9.0	8.2	12.2
Shear resistance								
Characteristic resistance	V_{Rk}	[kN]	10.1	<u>9.3</u>	13.3	<u>14.7</u>	17.3	20.7
Design resistance	V_{Rd}	[kN]	6.7	<u>7.4</u>	8.9	<u>11.7</u>	11.6	<u>16.4</u>
Recommended resistance	V_{Rec}	[kN]	4.8	<u>5.3</u>	6.3	<u>8.4</u>	8.2	<u>11.7</u>

1) Presented loading information is only applicable for anchors not affected by concrete edge and anchor spacing influence.

2) Recommended load includes partial safety factor and an overall partial safety factor for action of 1.4. The partial safety factor for action depends on the type of loading and shall be taken from national regulations. All anchor failure modes and the entire relevant product European Technical Assessment must be considered for anchor design.

3) Underlined and italic values indicate steel failure, **bold** values indicate concrete failure, and all others represent pullout failure.

5.2 Loading information for WT7 under fire exposure^{1/2)}

Anchor Type				WT7		
Anchor Size				M8	M10	M12
Nominal embedment depth h_{nom} [mm]				59.5	66.5	77.0
Tension and shear load						
Characteristic resistance	R30	$N_{Rk,s,fi} = V_{Rk,s,fi}$ [kN]		0.8	1.5	2.4
	R60	$N_{Rk,s,fi} = V_{Rk,s,fi}$ [kN]		0.6	1.2	1.9
	R90	$N_{Rk,s,fi} = V_{Rk,s,fi}$ [kN]		0.5	0.9	1.4
	R120	$N_{Rk,s,fi} = V_{Rk,s,fi}$ [kN]		0.4	0.8	1.2

1) Presented loading information is only applicable for anchors not affected by concrete edge and anchor spacing influence.

2) For more details refer to Expert Opinion GS 6.1/25-045-1