

DECLARATION OF PERFORMANCE
DoP No. 2873-CPR-401-12 / 01.21-EN

1. Unique identification code of the product-type: **Toge concrete screw TIS 6**
2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Annex A 3

Batch number: see packaging of the product.

3. Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:

generic type	concrete screw
for use in	Cracked and non-cracked concrete C 20/25-C 50/60 (EN 206), only for multiple use of non-structural applications covered sizes: 6
option / category	Part 6
loading	static or quasi-static
material	<u>zinc-plated steel, steel with zinc flake coating:</u> dry internal conditions only <u>stainless steel</u> internal and external use without particular aggressive conditions <u>high corrosion resistant steel</u> internal and external use with particular aggressive conditions covered sizes: 6

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):
Toge Dübel GmbH & Co. KG, Illesheimer Strasse 10, 90431 Nuernberg
5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2): --
6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V: **System 2+**
7. In case of the declaration of performance concerning a construction product covered by a harmonised standard: --
8. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Deutsches Institut für Bautechnik, Berlin

has issued the following:

ETA-20/0779

on the basis of

EAD 330747-00-0601

The notified body **2873-CPR** performed

ii) factory production control.

iii) testing of samples taken at the factory in accordance with a prescribed test plan.

and has issued the following: certificate of conformity 2873-CPR-401-12.

9. Declared performance:

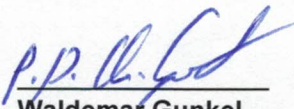
Essential Characteristics	Design Method	Performance	Harmonized Technical Specification
Characteristic resistance for tension load	EN 1992-4	Annex C 1	ETAG 001-06
Characteristic resistance for shear load	EN 1992-4	Annex C 1	
Characteristic resistance under fire exposure	EN 1992-4	Annex C 2	
Minimum thickness of member, minimum spacing and edge distance	EN 1992-4	Annex B2	

Where pursuant to Article 37 or 38 in the Specific Technical Documentation has been used, the requirements with which the product complies: --

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:





Waldemar Gunkel
 Dipl.-Wirtsch.-Ing. (FH)
 Application Engineering and
 Technical documents

Nuernberg, 2022-09-07



Andreas Gerhard
 CEO

Nuernberg, 2022-09-07

Table 3: Installation parameters

Insulation screw TIS			6	
Nominal embedment depth	h_{nom}		$h_{nom1}^{1)}$	h_{nom2}
	[mm]		25	35
Nominal drill hole diameter	d_0	[mm]	6,0	
Cutting diameter of drill bit	$d_{cut} \leq$	[mm]	6,35	
Drill hole depth	$h_1 \geq$	[mm]	28	38
Clearance hole diameter	$d_f \leq$	[mm]	8	

¹⁾ only subject to dry internal conditions

Table 4: Minimum thickness of member, minimum edge distance and minimum spacing

Insulation screw TIS			6	
Nominal embedment depth	h_{nom}		$h_{nom1}^{1)}$	h_{nom2}
	[mm]		25	35
Minimum thickness of member	h_{min}	[mm]	80	
Minimum edge distance	c_{min}	[mm]	30	
Minimum spacing	s_{min}	[mm]	30	

¹⁾ only subject to dry internal conditions

TOGE Insulation screw TIS

Intended use

Installation parameters

Minimum thickness of member, minimum edge distance and minimum spacing

Annex B2

Table 5: Characteristic values for static and quasi-static loading

Insulation screw TIS			6		
Nominal embedment depth	h_{nom}		$h_{nom1}^{1)}$	h_{nom2}	
	[mm]		25	35	
Steel failure for tension and shear loading					
Characteristic tension load	$N_{Rk,s}$	[kN]	13,7		
Partial safety factor	$\gamma_{Ms,N}$	[-]	1,5		
Characteristic shear load	$V_{Rk,s}$	[kN]	6,9		
Partial safety factor	$\gamma_{Ms,V}$	[-]	1,25		
Ductility factor	k_7	[-]	0,8		
Characteristic bending load	$M_{Rk,s}^0$	[Nm]	11,1		
Pull-out failure					
Characteristic tension load C20/25	cracked	$N_{Rk,p}$	[kN]	0,9	2,0
	uncracked	$N_{Rk,p}$	[kN]	2,0	4,0
Increasing Ψ_c factor for $N_{Rk,p}$ $= N_{Rk,p(C20/25)} \cdot \Psi_c$	C25/30	Ψ_c	[-]	1,12	
	C30/37			1,22	
	C40/50			1,41	
	C50/60			1,58	
Concrete failure: Splitting failure, concrete cone failure and pry-out failure					
Effective embedment depth	h_{ef}	[mm]	19	27	
k-factor	cracked	k_{cr}	[-]	7,7	
	uncracked	k_{ucr}	[-]	11,0	
Concrete cone failure	spacing	$s_{cr,N}$	[mm]	$3 \times h_{ef}$	
	edge distance	$c_{cr,N}$	[mm]	$1,5 \times h_{ef}$	
Splitting failure	resistance	$N_{Rk,sp}^0$	[kN]	0,9	
	spacing	$s_{cr,sp}$	[mm]	$3 \times h_{ef}$	
	edge distance	$c_{cr,sp}$	[mm]	$1,5 \times h_{ef}$	
Factor for pry-out failure	k_B	[-]	1,0		
Installation factor	γ_{inst}	[-]	1,0		
Concrete edge failure					
Effective length in concrete	$l_f = h_{ef}$	[mm]	19	27	
Nominal outer diameter of screw	d_{nom}	[mm]	6		

¹⁾ only subject to dry internal conditions

TOGE Insulation screw TIS

Performances

Characteristic values for static and quasi-static loading

Annex C1

Table 6: Fire exposure – characteristic values of resistance

Insulation screw TIS				6	
Nominal embedment depth		h_{nom}	$h_{nom1}^{1)}$	h_{nom2}	
		[mm]	25	35	
Steel failure for tension and shear load					
Characteristic Resistance	R30	$N_{RK,s,fi30}$	[kN]	0,27	
	R60	$N_{RK,s,fi60}$	[kN]	0,27	
	R90	$N_{RK,s,fi90}$	[kN]	0,22	
	R120	$N_{RK,s,fi120}$	[kN]	0,17	
	R30	$V_{RK,s,fi30}$	[kN]	0,27	
	R60	$V_{RK,s,fi60}$	[kN]	0,27	
	R90	$V_{RK,s,fi90}$	[kN]	0,22	
	R120	$V_{RK,s,fi120}$	[kN]	0,17	
	R30	$M^0_{RK,s,fi30}$	[Nm]	0,22	
	R60	$M^0_{RK,s,fi60}$	[Nm]	0,22	
	R90	$M^0_{RK,s,fi90}$	[Nm]	0,18	
	R120	$M^0_{RK,s,fi120}$	[Nm]	0,14	
Pull-out failure					
Characteristic Resistance	R30-R90	$N_{RK,p,fi}$	[kN]	0,23	0,50
	R120	$N_{RK,p,fi}$	[kN]	0,18	0,40
Concrete cone failure					
Characteristic Resistance	R30-R90	$N^0_{RK,c,fi}$	[kN]	0,27	0,65
	R120	$N^0_{RK,c,fi}$	[kN]	0,22	0,52
Edge distance					
R30 - R120		$c_{cr,fi}$	[mm]	$2 \times h_{ef}$	
In case of fire attack from more than one side, the minimum edge distance shall be $\geq 300\text{mm}$.					
Spacing					
R30 - R120		$s_{cr,fi}$	[mm]	$4 \times h_{ef}$	
Pry-out failure					
R30 - R120		k_g	[-]	1,0	
The anchorage depth has to be increased for wet concrete by at least 30 mm compared to the given value.					
¹⁾ only subject to dry internal condition					
TOGE Insulation screw TIS					Annex C2
Performances Fire exposure – characteristic values of resistance					