TOGE TIS

Inuslating screw for cold-, heat- and fire-protection

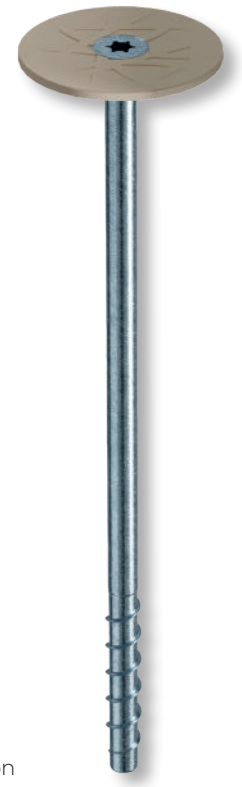
Environmental Product Declaration (EPD)
The product has an Environmental Product Declaration (EPD) in accordance with ISO 14025 and EN 15804+A2.

Fire protection
A fixed metal plate under the plastic cap ensures fire protection up to fire resistance class R120.

Variable
Two different embedment depths of 25 mm or 35 mm allow variable load bearing for different panel thicknesses.

Maximum thickness
Screw lengths up to 325 mm enable the fastening of insulating panels up to a thickness of 300 mm.

Adjustable
The screw thread allows adjustment of the insulation panels at any time during or after installation. For an even installation pattern over the entire surface.



Cover Cap
Cover caps with textured structure made of polyethylene in three different colors for a coherent look of the entire surface.

Easy Installation
The patented thread allows quick and easy installation with a standard cordless screwdriver without special tools. The TOGE TIS can be removed just as easily without leaving any residue.

No more reinforcement hits
The low embedment depths of 25 mm and 35 mm allow particularly user-friendly processing completely WITHOUT reinforcement hits.

Fast installation
The small drilling diameter of only 6 mm allows fast, uncomplicated installation.

Approval

Approval
Environmental Product Declaration (EPD) in accordance with ISO 14025 and EN 15804+A2.

European technical assessment ETA-20/0779.

General technical approval Z-21.8.1971.

Base Materials
Approval for concrete strength classes from C20/25 to C50/60.

Cracked and non-cracked concrete.

TIS KORR coated for use in corrosivity categorie C3.

epd-global
ENVIRONMENTAL PRODUCT DECLARATION
In accordance with ISO 14025 and EN 15804+A2
TOGE Dübel GmbH & Co. KG
TIS Screw

epd-global
Powered by EPD-Norway
ECO PLATFORM EPD VERIFIED

ETA
CE
ETA-20/0779
for anchoring in cracked and non-cracked concrete
For multiple use in concrete for non-structural applications
TIS

R 30 - R 120

Headshapes & Materials

	Steel, zinc plated	Steel, TOGE-KORR zinc flake coated	Stainless Steel A4
 Cover cap white	✓	✓	
 Cover cap beige	✓	✓	
 Cover cap gray	✓	✓	
 Additional disc Ø 80 mm	✓		

Application Examples

Underground garage and basement walls

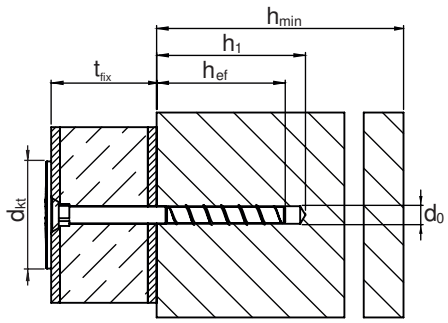
Underground parking and basement ceilings

Office ceilings

Product Overview

Steel - zinc-plated

Version with cover cap
made of polyethylene Ø37 mm
in white



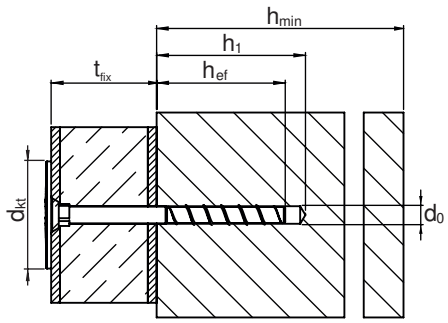
Item nr.	Designation	Depth of drill hole $h_{1,1}$ / $h_{1,2}$	Embedment depth of anchor $h_{nom,1}$ / $h_{nom,2}$	Max. thickness of fixture $t_{fix,1}$ / $t_{fix,2}$	Packing Unit
031 169 050	TIS 50 WHITE	28 mm / 38 mm	25 mm / 35 mm	25 mm / 15 mm	100
031 169 075	TIS 75 WHITE	28 mm / 38 mm	25 mm / 35 mm	50 mm / 40 mm	100
031 169 085	TIS 85 WHITE	28 mm / 38 mm	25 mm / 35 mm	60 mm / 50 mm	100
031 169 100	TIS 100 WHITE	28 mm / 38 mm	25 mm / 35 mm	75 mm / 65 mm	100
031 169 110	TIS 110 WHITE	28 mm / 38 mm	25 mm / 35 mm	85 mm / 75 mm	100
031 169 125	TIS 125 WHITE	28 mm / 38 mm	25 mm / 35 mm	100 mm / 90 mm	100
031 169 135	TIS 135 WHITE	28 mm / 38 mm	25 mm / 35 mm	110 mm / 100 mm	100
031 169 150	TIS 150 WHITE	28 mm / 38 mm	25 mm / 35 mm	125 mm / 115 mm	100
031 169 175	TIS 175 WHITE	28 mm / 38 mm	25 mm / 35 mm	150 mm / 140 mm	100
031 169 200	TIS 200 WHITE	28 mm / 38 mm	25 mm / 35 mm	175 mm / 165 mm	100
031 169 225	TIS 225 WHITE	28 mm / 38 mm	25 mm / 35 mm	200 mm / 190 mm	100
031 169 250	TIS 250 WHITE	28 mm / 38 mm	25 mm / 35 mm	225 mm / 215 mm	100
031 169 275	TIS 275 WHITE	28 mm / 38 mm	25 mm / 35 mm	250 mm / 240 mm	100
031 169 300	TIS 300 WHITE	28 mm / 38 mm	25 mm / 35 mm	275 mm / 265 mm	100
031 169 325	TIS 325 WHITE	28 mm / 38 mm	25 mm / 35 mm	300 mm / 290 mm	100

Addtional Disc without marking,
Ø80 mm

Item nr.	Designation	Diameter	Packing Unit
031 969 000	TIS Disc 80	80 mm	250

Steel - zinc-plated

Version with cover cap
made of polyethylene Ø37 mm in
beige



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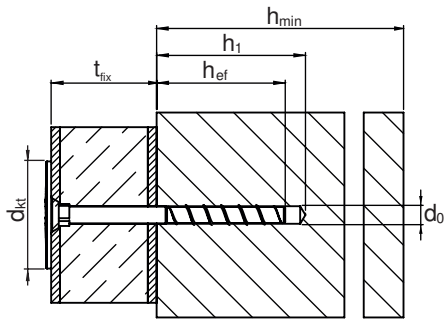
031 269 050	TIS 50 BEIGE	28 mm / 38 mm	25 mm / 35 mm	25 mm / 15 mm	100
031 269 075	TIS 75 BEIGE	28 mm / 38 mm	25 mm / 35 mm	50 mm / 40 mm	100
031 269 085	TIS 85 BEIGE	28 mm / 38 mm	25 mm / 35 mm	60 mm / 50 mm	100
031 269 100	TIS 100 BEIGE	28 mm / 38 mm	25 mm / 35 mm	75 mm / 65 mm	100
031 269 110	TIS 110 BEIGE	28 mm / 38 mm	25 mm / 35 mm	85 mm / 75 mm	100
031 269 125	TIS 125 BEIGE	28 mm / 38 mm	25 mm / 35 mm	100 mm / 90 mm	100
031 269 135	TIS 135 BEIGE	28 mm / 38 mm	25 mm / 35 mm	110 mm / 100 mm	100
031 269 150	TIS 150 BEIGE	28 mm / 38 mm	25 mm / 35 mm	125 mm / 115 mm	100
031 269 175	TIS 175 BEIGE	28 mm / 38 mm	25 mm / 35 mm	150 mm / 140 mm	100
031 269 200	TIS 200 BEIGE	28 mm / 38 mm	25 mm / 35 mm	175 mm / 165 mm	100
031 269 225	TIS 225 BEIGE	28 mm / 38 mm	25 mm / 35 mm	200 mm / 190 mm	100
031 269 250	TIS 250 BEIGE	28 mm / 38 mm	25 mm / 35 mm	225 mm / 215 mm	100
031 269 275	TIS 275 BEIGE	28 mm / 38 mm	25 mm / 35 mm	250 mm / 240 mm	100
031 269 300	TIS 300 BEIGE	28 mm / 38 mm	25 mm / 35 mm	275 mm / 265 mm	100
031 269 325	TIS 325 BEIGE	28 mm / 38 mm	25 mm / 35 mm	300 mm / 290 mm	100

Steel - zinc-plated

Version with cover cap
made of polyethylene Ø37 mm in
gray



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031 069 050	TIS 50 GRAY	28 mm / 38 mm	25 mm / 35 mm	25 mm / 15 mm	100
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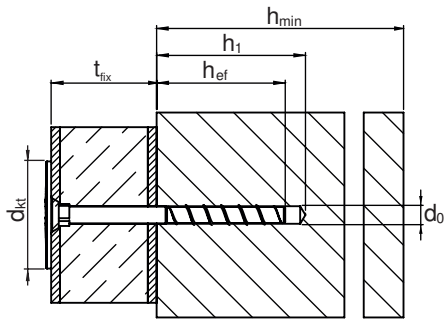
031 069 100	TIS 100 GRAY	28 mm / 38 mm	25 mm / 35 mm	75 mm / 65 mm	100
031 069 110	TIS 110 GRAY	28 mm / 38 mm	25 mm / 35 mm	85 mm / 75 mm	100
031 069 125	TIS 125 GRAY	28 mm / 38 mm	25 mm / 35 mm	100 mm / 90 mm	100
031 069 135	TIS 135 GRAY	28 mm / 38 mm	25 mm / 35 mm	110 mm / 100 mm	100
031 069 150	TIS 150 GRAY	28 mm / 38 mm	25 mm / 35 mm	125 mm / 115 mm	100
031 069 175	TIS 175 GRAY	28 mm / 38 mm	25 mm / 35 mm	150 mm / 140 mm	100
031 069 200	TIS 200 GRAY	28 mm / 38 mm	25 mm / 35 mm	175 mm / 165 mm	100
031 069 225	TIS 225 GRAY	28 mm / 38 mm	25 mm / 35 mm	200 mm / 190 mm	100
031 069 250	TIS 250 GRAY	28 mm / 38 mm	25 mm / 35 mm	225 mm / 215 mm	100
031 069 275	TIS 275 GRAY	28 mm / 38 mm	25 mm / 35 mm	250 mm / 240 mm	100
031 069 300	TIS 300 GRAY	28 mm / 38 mm	25 mm / 35 mm	275 mm / 265 mm	100
031 069 325	TIS 325 GRAY	28 mm / 38 mm	25 mm / 35 mm	300 mm / 290 mm	100

TOGE-KORR - Steel, zinc-flake coated

Version with cover cap
made of polyethylene Ø37 mm in white



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031 168 100	TIS KORR 100 WHITE	28 mm / 38 mm	25 mm / 35 mm	75 mm / 65 mm	100
031 168 110	TIS KORR 110 WHITE	28 mm / 38 mm	25 mm / 35 mm	85 mm / 75 mm	100
031 168 125	TIS KORR 125 WHITE	28 mm / 38 mm	25 mm / 35 mm	100 mm / 90 mm	100
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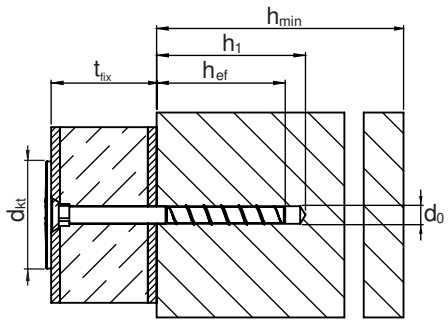
031 168 175	TIS KORR 175 WHITE	28 mm / 38 mm	25 mm / 35 mm	150 mm / 140 mm	100
031 168 200	TIS KORR 200 WHITE	28 mm / 38 mm	25 mm / 35 mm	175 mm / 165 mm	100
031 168 225	TIS KORR 225 WHITE	28 mm / 38 mm	25 mm / 35 mm	200 mm / 190 mm	100
031 168 250	TIS KORR 250 WHITE	28 mm / 38 mm	25 mm / 35 mm	225 mm / 215 mm	100
031 168 275	TIS KORR 275 WHITE	28 mm / 38 mm	25 mm / 35 mm	250 mm / 240 mm	100
031 168 300	TIS KORR 300 WHITE	28 mm / 38 mm	25 mm / 35 mm	275 mm / 265 mm	100
031 168 325	TIS KORR 325 WHITE	28 mm / 38 mm	25 mm / 35 mm	300 mm / 290 mm	100

TOGE-KORR - Steel, zinc-flake coated

Version with cover cap
made of polyethylene Ø37 mm in
beige



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TOGE-KORR - Steel, zinc-flake coated

Version with cover cap
made of polyethylene Ø37 mm in
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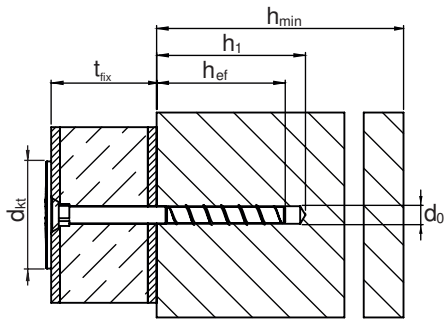

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031 068 075	TIS KORR 75 GRAY	28 mm / 38 mm	25 mm / 35 mm	50 mm / 40 mm	100
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031 068 325	TIS KORR 325 GRAY	28 mm / 38 mm	25 mm / 35 mm	300 mm / 290 mm	100

Technical Characteristics

Without fire exposure for multiple fastening TIS according ETA-20/0779

Screw size TIS			6	
Nominal embedment depth	h_{nom}	[mm]	$h_{nom,1}$ [1]	$h_{nom,2}$
			25	**35**
Nominal diameter of drill bit	d_0	[mm]	6	
Depth of drill hole	h_1 min	[mm]	28	38
Effective anchorage depth	h_{ef}	[mm]	19	27
Diameter of clearance hole in the fixture	d_f max	[mm]	8	
Approved tension load in cracked concrete [2) 3)]	N_{zul}	[kN]	0,4	1,0
Approved shear load in cracked concrete [2) 3)]	V_{zul}	[kN]	1,4	2,3
Approved tension load in non-cracked concrete [2) 3)]	N_{zul}	[kN]	1,0	1,9
Approved shear load in non-cracked concrete [2) 3)]	V_{zul}	[kN]	1,9	3,3
Approved bending resistance	M_{zul}	[kN]	6,3	
Minimum edge distance	C_{min}	[mm]	30	
Minimum spacing	S_{min}	[mm]	30	
Minimum thickness of member	h_{min}	[mm]	80	

[1)] Only for use in dry conditions

[2)] The partial safety factor for material resistance from the approval γM=1,5 as well a partial safety factor for load actions γF=1,4 were considered for determining the load.

[3)] These values apply without influence of the spacing and edge distances.

Without fire exposure for multiple fastening TIS according Z-21.8-1971

Screw size TIS			6	
Nominal embedment depth	h_{nom}	[mm]	$h_{nom,1}$	$h_{nom,2}$
			25	**35**
Nominal diameter of drill bit	d_0	[mm]	6	
Depth of drill hole	h_1 min	[mm]	28	38
Diameter of clearance hole in the fixture	d_f max	[mm]	8	
Approved load in all directions in cracked concrete [3) 4)]	F_{zul}	[kN]	0,4	1,0
Minimum edge distance	C_{min}	[mm]	30	
Minimum spacing	S_{min}	[mm]	30	
Minimum thickness of member	h_{min}	[mm]	80	

[3)] These values apply without influence of the spacing and edge distances

[4)] The partial safety factor for load actions γF = 1,35 was considered for determining the load.

Technical characteristics

Under fire exposure for multiple fastening TIS according ETA-20/0779

Screw size TIS				6	
Nominal embedment depth		h_{nom}	[mm]	$h_{nom,1}$ [1)]	$h_{nom,2}$
				25	35
Approved load under tensile and shear use ($F_{zul,fi} = N_{zul,fi} = V_{zul,fi}$)					
Fire resistance class					
R 30	Approved load [2)]	$F_{zul,fi\ 30}$	[kN]	0,23	0,27
R 60		$F_{zul,fi\ 60}$	[kN]	0,23	0,27
R 90		$F_{zul,fi\ 90}$	[kN]	0,22	
R 120		$F_{zul,fi\ 120}$	[kN]	0,17	
R 30		$M_{zul,fi\ 30}$	[Nm]	0,22	
R 60		$M_{zul,fi\ 60}$	[Nm]	0,22	
R 90		$M_{zul,fi\ 90}$	[Nm]	0,18	
R 120		$M_{zul,fi\ 120}$	[Nm]	0,14	
Edge distance					
R 30 bis R 120		$C_{cr,fi}$	[mm]	2 x h_{ef}	
The edge distance must be at least 300 mm if the fire load attacks from more than one side.					
Spacing					
R 30 bis R 120		$S_{cr,fi}$	[mm]	4 x h_{ef}	
Concrete pry-out failure					
R 30 bis R 120		k	[-]	1,0	
For wet concrete, the anchoring depth must be increased by at least 30 mm					

[1)] Only for use in dry conditions.

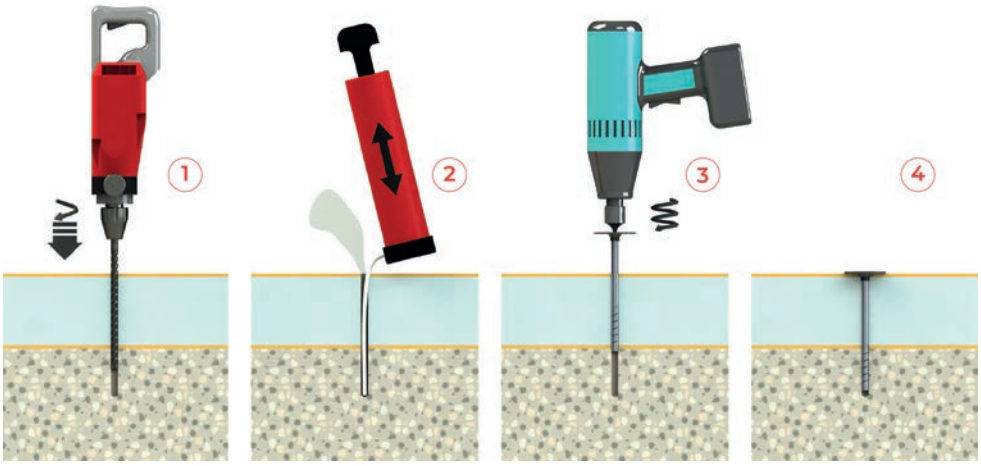
[2)] The partial safety factor for material resistance from the approval γM=1,0 as well a partial safety factor for load actions γF=1,0 were considered for determining the load.

Under fire exposure for multiple fastening TIS according Z-21.8-1971

Screw size TIS				6	
Nominal embedment depth		h_{nom}	[mm]	$h_{nom,1}$	$h_{nom,2}$
				25	35
Approved load under tensile and shear use ($F_{zul,fi} = N_{zul,fi} = V_{zul,fi}$)					
Fire resistance class					
R 30	Approved load [2)]	$F_{zul,fi\ 30}$	[kN]	0,27	
R 60		$F_{zul,fi\ 60}$	[kN]	0,27	
R 90		$F_{zul,fi\ 90}$	[kN]	0,22	
R 120		$F_{zul,fi\ 120}$	[kN]	0,17	
Edge distance					
R 30 bis R 120		$C_{cr,fi}$	[mm]	60	
The edge distance must be at least 300 mm if the fire load attacks from more than one side.					
Spacing					
R 30 bis R 120		$S_{cr,fi}$	[mm]	120	

[2)] The partial safety factor for material resistance from the approval γM=1,0 as well a partial safety factor for load actions γF=1,0 were considered for determining the load.

Installation Instructions



1) Create borehole.

2) Thoroughly clean borehole.

3) Screw in the TOGE TIS with a standard cordless screwdriver – without special tools.

4) The screw head must rest completely on the attachment.