DROP-IN TDA – INTERNALLY THREADED SLEEVE ANCHOR

Features:
- Deformation colntrolled fixing
- Approved for use in cracked concrete
- Approved for structural applications in non-cracked concrete
- Lipped and smooth versions

Benefits:
- Quick and simple installation
- One anchor for concrete from C20/25 to C50/60
- Suitable for bolts and threaded rod
- Adjustable fixture thickness
- Bolt and stud can be removed for temporary structures

Base material:
Non-cracked concrete from C20/25 to C50/60

ETA 22/0153 CE

TDA anchor designation			
Trutek Drop-in Anchor	Thread size d [mm]	Short version	Lipped version
TDA	**06**	**LS**	**L**

Technical specification of TDA anchors

Product Code		Thread Diameter	Outside Diameter	Anchor Length	Internal Thread Length	Drill Hole Diameter	Drill Hole Depth	Fixture Clearance Hole	Installation Torque (Max)	Setting Punch
		d	D	L	L_{th}	d_o	h_{nom}	d_f	T_{inst}	Reference
Smooth	**Lipped**	mm	mm	mm	mm	mm	mm	mm	Nm	
TDA12	TDA12L	12	15	50	22	15	54	14	35	TDST12
TDA12	TDA12L	12	16	50	22	16	54	14	35	TDST12
TDA16	TDA12L	16	20	65	30	20	70	18	70	TDST16

Installation Data

Thread Diameter			M12	M12D	M16
Non-cracked concrete ETA 22/0153					
Effective Anchorage Depth	h_{ef}	[mm]	50	50	65
Minimum Concrete Thickness	h_{min}	[mm]	100	100	120
Characteristic Spacing Spacing	$S_{cr,N,ucr}$	[mm]	150	150	195
Characteristic Edge Distance	$C_{cr,V,ucr}$	[mm]	75	75	97
Minimum Spacing	s_{min}	[mm]	68	68	88
Minimum Edge Distance	c_{min}	[mm]	68	68	88

**All Data Values are based on correct installation using Setting tools provided by Trutek

Load Data for Non-cracked Concrete ETA 17/0678

Characteristics Resistance

Anchor Diameter			M12	M12D	M16
N_{Rk}	Tensile Resistance	[kN]	8.3	12.7	17.8

Design Resistance

Anchor Diameter			M8	M10	M12TS
N_{Rd}	Tensile Resistance	[kN]	4.6	7.1	8.5

Recommended Resistance

Anchor Diameter			M8	M10	M12TS
N_{rec}	Tensile Resistance	[kN]	3.3	5.1	6.1

Includes Partial Safety Factor γ = 1.4 in the absence of national regulations and type of loading
Data is for Static and Quasi Static Loads for a single anchor

Increasing Factor

Anchor Diameter		M12	M12D	M16
Ψc C30/37	[-]		1.22	
Ψc C40/50	[-]		1.41	
Ψc C50/60	[-]		1.55	

When using increasing factors care must be taken not to exceed steel limits

Steel Limits

Characteristic Tensile Steel limits

			M12	M12D	M16
Grade 4.8	$N_{Rk,s}$	[kN]	33.7	33.7	62.8
Partial Safety Factor	γ_{MsN}	[-]		1.5	
Grade 5.8	$N_{Rk,s}$	[kN]	42.2	42.2	78.5
Partial Safety Factor	γ_{MsN}	[-]		1.5	
Grade 8.8	$N_{Rk,s}$	[kN]	67.4	67.4	125.6
Partial Safety Factor	γ_{MsN}	[-]		1.5	
Characteristic Shear Steel limits					
Shear - without lever arm					
Grade 4.8	$V_{Rk,s}$	[kN]	16.9	16.9	31.4
Grade 5.8	$V_{Rk,s}$	[kN]	21.1	21.1	39.3
Grade 8.8	$V_{Rk,s}$	[kN]	33.7	33.7	62.8
Factor of Ductility	k_7	[-]		0.8	
Shear - with lever arm					
Grade 4.8	$M^0_{Rk,s}$	[Nm]	52.4	52.4	133.3
Grade 5.8	$M^0_{Rk,s}$	[Nm]	65.6	65.6	166.6
Grade 8.8	$M^0_{Rk,s}$	[Nm]	104.9	104.9	266.6
Partial Safety Factor	γ_{MsV}	[-]		1.25	

***All Data Values are based on correct installation using Setting tools provided by Trutek*

Fire Loads

Characteristic Tensile Resistance for Fire Loads

Anchor Diameter			M12	M12D	M16
$N_{Rk,s,fi,30}$	R30	[kN]	1.7	1.7	3.1
$N_{Rk,s,fi,60}$	R60	[kN]	1.3	1.3	2.40
$N_{Rk,s,fi,90}$	R90	[kN]	1.1	1.0	2.0
$N_{Rk,s,fi,120}$	R120	[kN]	0.8	0.8	1.6

Characteristic Shear Resistance without lever arm for Fire Loads

Anchor Diameter			M12	M12D	M16
$V_{Rk,s,fi,30}$	R30	[kN]	1.7	1.7	3.1
$V_{Rk,s,fi,60}$	R60	[kN]	1.3	1.3	2.4
$V_{Rk,s,fi,90}$	R90	[kN]	1.1	1.1	2.0
$V_{Rk,s,fi,120}$	R120	[kN]	0.8	0.8	1.6

Characteristic Shear Resistance with lever arm for Fire Loads

Anchor Diameter			M12	M12D	M16
$M^0_{Rk,s,fi,30}$	R30	[Nm]	3.9	3.9	9.3
$M^0_{Rk,s,fi,60}$	R60	[Nm]	2.9	2.9	7.0
$M^0_{Rk,s,fi,90}$	R90	[Nm]	2.5	2.5	6.0
$M^0_{Rk,s,fi,120}$	R120	[Nm]	1.9	1.9	4.6

In the absence of other national regulations the partial safety for resistance under fire exposure = 1.0

Spacing	[mm]	$S_{cr,N,fi}$	200	200	260
Edge Distance	[mm]	$C_{cr,N,fi}$	100	100	130

The design method covers anchors with a fire attack from one side only. In the case of a fire attack from more than one side the edge distance shal be ≥ 300mm

TDA anchor installation

Must be set using Trutek Setting tools