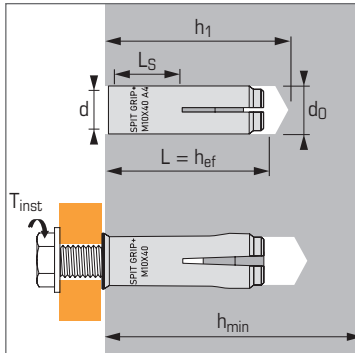
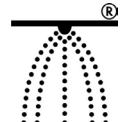




Deformation-controlled expansion female anchor for use in cracked concrete



ETA-21/0176
EAD 330747-00-0601



Technical data

Anchor size	Min. anchor depth (mm) hef	Thread diameter (mm) d	Thread length (mm) Ls	Drilling depth (mm) h1	Drilling diameter (mm) d0	Min. thick. of base material (mm) hmin	Total anchor length (mm) L	Tighten torque (Nm) Tinst	Code Zinc coated steel	Code Stainless steel A4	Setting tool	
											Reference	Code
M6X25	25	6	10	27	8	100	25	4	058581	058589	ST-M M6x25	058596
M8X30	30	8	13	33	10	100	30	11	058583	058591	ST-M M8x30	058597
M10X25*	25	10	13	28	12	80	25	17	058584	-	ST-M M10x25	058598
M10X40	40	10	17	43	12	100	40	17	058585	058592	ST-M M10x40	058599
M12X50	50	12	21	54	15	100	50	38	058586	058593	ST-M M12x50	058601
M16X65	65	16	27	70	20	130	65	60	058587	58594	ST-M M16x65	058602

* Zinc coated steel only

APPLICATION

- Ventilation ducts
- Suspended ceilings
- Cable trays

MATERIAL

Zinc coated steel

- **Sleeve :**
Steel, Zn5/An/TO
- **Expansion cone:**
Steel, Zn5/An/TO
- **Protection :**
Galvanised 5 µm min.

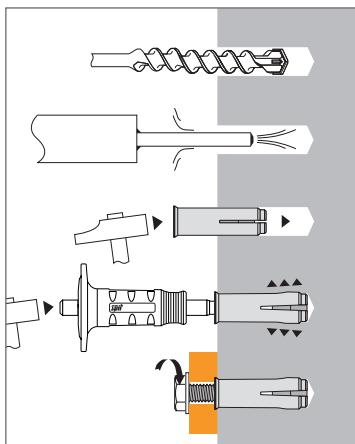
Stainless steel A4

- **Sleeve :**
Stainless steel A4
- **Expansion cone:**
Stainless steel A4

Anchor mechanical properties

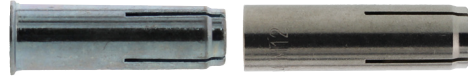
Anchor size	M6	M8	M10	M12	M16
Zinc coated steel					
M⁰_{rk,s} (Nm)	Characteristic bending moment				
(garde 4.6/4.8)	6,1	15,0	29,9	52,4	133,3
(garde 5.6/5.8)	7,6	18,8	37,4	65,5	166,6
(garde 6.8)	9,2	22,5	44,9	78,7	199,9
(garde 8.8)	12,2	30,0	59,9	104,9	266,6
Stainless steel A4					
M⁰_{rk,s} (Nm)	Characteristic bending moment				
(garde A4-50)	7,6	18,8	37,4	65,5	166,6
(garde A4-70)	10,6	26,3	52,4	91,8	233,1
(garde A4-80)	12,2	30,0	59,9	104,9	266,6

INSTALLATION



GRIP+L & GRIP+A4

2/2 zinc coated & stainless steel version



Design loads (F_{Rd}) in kN

TENSILE & SHEAR in kN

Zinc coated steel

F_{Rd}	Design pull-out resistance						
	Anchor size	M6	M8	M10	M10	M12	M16
Cracked and non-cracked concrete ($\geq C20/25$)							
h_{ef}	25	30	25	40	50	65	
F_{Rd}	1,1	1,7	2,2	2,4	3,6	5,7	
C_{min}	105	105	60	140	175	230	
S_{min}	60	60	75	80	100	130	

$\gamma_{Mc} = 1,8$ for M6X25, M8X30 and M10X25

$\gamma_{Mc} = 2,1$ for M10X40, M12X50 and M16X65

Stainless steel A4

F_{Rd}	Design pull-out resistance					
	Anchor size	M6	M8	M10	M12	M16
Cracked and non-cracked concrete ($\geq C20/25$)						
h_{ef}	25	30	40	50	65	
F_{Rd}	1,2	1,7	1,7	3,1	6,0	
C_{min}	65	80	100	175	230	
S_{min}	60	60	100	100	130	

$\gamma_{Mc} = 2,1$

Chevilles mécaniques

Fire behaviour

Fire design tensile loads in hollow concrete slab (kN)

Zinc coated steel

Anchor size	M6	M8	M10	M10	M12	M16
Fire duration						
	$F_{Rd,fi}$					
30 min.	0,20	0,40	0,54	0,90	1,70	3,10
1 h	0,20	0,30	0,54	0,80	1,30	2,40
1 h 30 min.	0,10	0,30	0,54	0,60	1,10	2,00
2 h	0,10	0,20	0,43	0,50	0,80	1,60

Stainless steel A4

Anchor size	M6	M8	M10	M12	M16
Fire duration					
	$F_{Rd,fi}$				
30 min.	0,20	0,73	0,87	1,63	3,19
1 h	0,18	0,59	0,87	1,63	3,19
1 h 30 min.	0,14	0,44	0,87	1,63	3,14
2 h	0,10	0,37	0,69	1,30	2,51

Recommended loads (N_{rec} , V_{rec}) in beam slab in kN

Min. steel quality of screw	Hollow concrete slab TYPE DSL 20* (wall thickness: 25 mm)			Hollow concrete slab TYPE DSL 27* (wall thickness : 30 mm)			
	N_{rec}	V_{rec}		N_{rec}		V_{rec}	
		5.6	5.6	8.8	5.6	8.8	5.6
GRIP+ /L M6X25	2,10	1,25	2,00	2,50	2,70	1,25	2,20
GRIP+ /L M8X30	2,10	2,30	3,10	2,70	2,70	2,30	3,10
GRIP+ /L M10X25	2,10	3,60	4,60	2,70	2,70	3,60	4,60

* kp1 trade mark (supplier for hollow concrete slab)