

Declaration of Performance

DoP nr. mp3evo

Anchor sleeve 3 sectors made of zinc plated steel



1. Identification of the product:

FM-MP3 evo

2. Identification code (art. 11.4), for the batch or serial number see packaging:

| d | L ¹⁾ [mm] | t _{fix} [mm] | Marking | Cod. (only anchor) |
|-----|-------------------------|---|-----------------|-----------------------|
| M6 | 45 | L _{screw8.8} ²⁾ - L | FM MP3 M6 Ø10 | 73300b10045 |
| M8 | 50 | | FM MP3 M8 Ø12 | 73300b12050 |
| M10 | 60 | | FM MP3 M10 Ø15 | 73300015060 |
| M12 | 80 | | FM MP3 M12 Ø18 | 73300018080 |

| d | L ¹⁾ [mm] | t _{fix} ³⁾ [mm] | Marking | Cod. FM-MP3 evo-HEX. HEAD |
|-----|-------------------------|--|-----------------|------------------------------|
| M6 | 45 | 5 | FM MP3 M6 Ø10 | 73301b10045 |
| M8 | 50 | 10 | FM MP3 M8 Ø12 | 73301b12050 |
| M10 | 60 | 20 | FM MP3 M10 Ø15 | 73301b15060 |
| M12 | 80 | 20 | FM MP3 M12 Ø18 | 73301b18080 |

| d | L ¹⁾ [mm] | t _{fix} ³⁾ [mm] | Marking | Cod. FM-MP3 evo LONG- HEX. HEAD |
|-----|-------------------------|--|-----------------|------------------------------------|
| M6 | 70 | 25 | FM MP3 M6 Ø10 | 73310b10070 |
| M8 | 75 | 25 | FM MP3 M8 Ø12 | 73310b12075 |
| M10 | 85 | 25 | FM MP3 M10 Ø15 | 73310b15085 |
| M12 | 105 | 25 | FM MP3 M12 Ø18 | 73310b18105 |

| d | L ¹⁾ [mm] | t _{fix} ³⁾ [mm] | Marking | Cod. FM-MP3 evo LONG- C.SUNK HEAD |
|-----|-------------------------|--|-----------------|--------------------------------------|
| M6 | 70 | 30 | FM MP3 M6 Ø10 | 73311b10070 |
| M8 | 75 | 30 | FM MP3 M8 Ø12 | 73311b12075 |
| M10 | 85 | 30 | FM MP3 M10 Ø15 | 73311b15085 |
| M12 | 105 | 30 | FM MP3 M12 Ø18 | 73311b18105 |

¹⁾ Length of anchor; ²⁾ Length of screw (grade 8.8); ³⁾ Thickness fixture max of screw in use.

3. Intended use:

| | |
|--------------------|--|
| Generic type | Torque controlled expansion anchor sleeve type |
| Material of anchor | Steel zinc coated acc. to EN ISO 4042 (bolt cl. 8.8 acc. to EN ISO 898-1) |
| Durability | Internal dry conditions |
| Fire Reaction | A1 according to EN 13501-1 |
| ETA-09/0067 | |
| Base material | Un-cracked concrete C20/25 to C50/60 acc. to EN 206-1 |
| Loading | Static and quasi-static load for Structural applications |
| Fire Resistance | NPD |
| ETA-10/0074 | |
| Base material | Cracked and un-cracked concrete C20/25 to C50/60 acc. to EN 206-1 |
| Loading | Static and quasi-static load for Multiple use in Non-structural applications |
| Fire Resistance | R120 |

4. Manufacturer (art. 11.5):

Friulsideer SpA via trieste,1 - 33048 San Giovanni al Natisone (UD) - Italy

5. Authorised representative (art. 12.2):

Not Relevant

6. System of Assessment AVCP (annex V):

System 1 and System 2+

7/8. Harmonised Specification & Notified Body:

| | Name of Body | System of Assessment | Reference | EAD / hEN Document |
|----------------------------------|-----------------------------|----------------------|---------------|--------------------|
| Technical Specification Document | ZAG ^[TAB] | 1 | ETA-09/0067 | ETAG001 p.1-2 |
| Constancy of Performance & FPC | ZAG nr.1404 ^[NB] | 1 | 1404-CPR-2552 | ETAG001 p.1 |
| Technical Specification Document | ZAG ^[TAB] | 2+ | ETA-10/0074 | ETAG001 p.6 |
| Factory Product Control | ZAG nr.1404 ^[NB] | 2+ | 1404-CPR-2558 | ETAG001 p.1-6 |

9. Declared Performance:

See Annexes

10. The performance of the product identified in points 1 and 2 is in conformity with declared performance in point 9. This declaration of performance is issued under the sole responsibility of Friulsideer SpA. Signed for and behalf of the manufacturer by:

| Function | Name | Signature | Place and date of issue |
|-------------------|-------------------|-----------|--------------------------------------|
| Technical Manager | Raffaele Palmieri | | San Giovanni al Natisone, 08-04-2020 |

ANNEX I°

Declared Performances acc. to ETA-09/0067 - ETAG001 p.1 and 2
Design Method acc. to EN 1992-4:2018

| ESSENTIAL CHARACTERISTICS | | | PERFORMANCE | | | |
|---|--|------|-------------------------|-------------|--------------------------|-------------|
| Installation parameters | | | M6²⁾ | M8 | M10 | M12 |
| d₀ | Nominal diameter of drill bit | [mm] | 10 | 12 | 15 | 18 |
| h_{nom} | Minimum installation depth | [mm] | 45 | 50 | 60 | 80 |
| h_{ef} | Effective anchorage depth | [mm] | 36 ²⁾ | 43 | 50 | 69 |
| h_{min} | Minimum thickness of the concrete member | [mm] | 100 | 100 | 100 | 140 |
| T_{inst} | Nominal torque moment | [Nm] | 8 | 15 | 30 | 50 |
| s_{min} | Minimum spacing | [mm] | 35 | 45 | 50 | 75 |
| c_{min} | Minimum edge distance | [mm] | 35 | 45 | 50 | 75 |
| TENSION Steel failure | | | | | | |
| N_{Rk,s} | Tension Steel characteristic failure (cl. 8.8) | [kN] | 16 | 29 | 46 | 67 |
| γ_{m,sN}¹⁾ | Partial safety factor for tension steel failure | [-] | 1,50 | | | |
| Pull-out failure | | | | | | |
| N_{Rk,p,ucr} | Tension characteristic load in un-cracked concrete C20/25 | [kN] | 7,5²⁾ | 12 | 17,8³⁾ | 25 |
| γ_{inst} | Partial safety factor | [-] | 1,0 | | | |
| γ_{mp}¹⁾ | Partial safety factor | [-] | 1,5 | | | |
| ψ_{c C30/37} | Increasing factor for concrete C30/37 | [-] | 1,22 | | | |
| ψ_{c C40/50} | Increasing factor for concrete C40/50 | [-] | 1,41 | | | |
| ψ_{c C50/60} | Increasing factor for concrete C50/60 | [-] | 1,55 | | | |
| Concrete cone failure and Splitting failure | | | | | | |
| K_{ucr,N} | Factor for un-cracked concrete ref. EN 1992-4 § 7.2.1.4 | [-] | 11,0 | | | |
| s_{cr,N} | Critical spacing for concrete cone failure | [mm] | 108 | 129 | 150 | 207 |
| c_{cr,N} | Critical edge distance for concrete cone failure | [mm] | 54 | 65 | 75 | 104 |
| s_{cr,sp} | Critical spacing for splitting failure | [mm] | 216 | 258 | 300 | 414 |
| c_{cr,sp} | Critical edge distance for splitting failure | [mm] | 108 | 129 | 150 | 207 |
| γ_{mc} = γ_{m,sp}¹⁾ | Partial safety factor | [-] | 1,5 | | | |
| Displacement on Tension Load | | | | | | |
| N_{ucr} | Service tension load in un-cracked concrete C20/25 | [kN] | 3,6 | 5,7 | 8,5 | 11,9 |
| δ_{NO,ucr} | Short term displacement under tension load | [mm] | 0,12 | 0,11 | 0,27 | 0,37 |
| δ_{N=,ucr} | Long term displacement under tension load | [mm] | 0,95 | 0,95 | 0,95 | 0,95 |
| SHEAR Steel failure | | | M8 | M10 | M12 | M16 |
| V_{Rk,s} | Shear Steel characteristic failure (cl. 8.8) | [kN] | 6,4 | 14,4 | 23,2 | 33,7 |
| k₇ | Ductility factor acc.to EN 1992-4 § 7.2.2.3.1 | [-] | 0,8 | | | |
| M⁰_{Rk,s} | Bending Moment characteristic failure (cl. 8.8) | [Nm] | 12 | 30 | 60 | 105 |
| γ_{m,sV}¹⁾ | Partial safety factor | [-] | 1,25 | | | |
| Shear Concrete Pry-out failure | | | | | | |
| k₈ | Factor acc. to EN 1992-4 EN 1992-4 § 7.2.2.4 | [-] | 1,0 | | | 2,0 |
| γ_{mc}¹⁾ | Partial safety factor | [-] | 1,5 | | | |
| Shear Concrete Edge failure | | | | | | |
| l_{ef} | Effective anchorage length | [mm] | 36 | 43 | 50 | 69 |
| d_{nom} | Nominal diameter of anchor | [mm] | 10 | 12 | 15 | 18 |
| γ_{mc}¹⁾ | Partial safety factor | [-] | 1,5 | | | |
| Displacement on Shear Load | | | | | | |
| V | Service shear load in concrete (cl. 8.8) | [kN] | 3,7 | 8,2 | 13,3 | 19,3 |
| δ_{V0} | Short term displacement under shear load | [mm] | 0,96 | 2,95 | 2,42 | 3,94 |
| δ_{V∞} | Long term displacement under shear load | [mm] | 1,40 | 4,42 | 3,63 | 5,91 |

¹⁾ In absence of other national regulations;²⁾ Use restricted to anchoring of structural components statically indetermined;³⁾ Pull-out failure not decisive.

ANNEX II*

Declared Performances acc. to ETA-10/0074 - ETAG 001 p.6 - [Multiple use in Non-structural applications]
Design Method acc. to EN 1992-4:2018

| ESSENTIAL CHARACTERISTICS | | | | | PERFORMANCE | | | | |
|---|--|------|--|----------------------------|-------------|-----------|------------|------------|--|
| Installation parameters | | | | | M6 | M8 | M10 | M12 | |
| d₀ | Nominal diameter of drill bit | [mm] | | 10 | 12 | 15 | 18 | | |
| h_{nom} | Minimum installation depth | [mm] | | 45 | 50 | 60 | 80 | | |
| h_{ef} | Effective anchorage depth | [mm] | | 36 | 43 | 50 | 69 | | |
| h_{min} | Minimum thickness of the concrete member | [mm] | | 100 | 100 | 100 | 140 | | |
| T_{inst} | Nominal torque moment | [Nm] | | 8 | 15 | 30 | 50 | | |
| s_{min} | Minimum spacing | [mm] | | 35 | 45 | 50 | 75 | | |
| c_{min} | Minimum edge distance | [mm] | | 35 | 45 | 50 | 75 | | |
| All load directions | | | | | M6 | M8 | M10 | M12 | |
| F⁰_{Rk} | Characteristic load in concrete C20/25 to C50/60 | [kN] | | 6 | 12 | 16 | 20 | | |
| γ_{inst} | Partial safety factor | [-] | | 1,0 | | | | | |
| γ_M¹⁾ | Partial safety factor | [-] | | 1,5 | | | | | |
| F⁰_{Rd} | Design load value in concrete C20/25 to C50/60 | [kN] | | 4 | 8 | 10,6 | 13,3 | | |
| F⁰ | Service load value in concrete C20/25 to C50/60 | [kN] | | 2,9 | 5,7 | 7,6 | 9,5 | | |
| s_{cr} | Critical spacing | [mm] | | 200 | 200 | 200 | 280 | | |
| c_{cr} | Critical edge distance | [mm] | | 100 | 130 | 150 | 210 | | |
| Shear load with lever arm | | | | | | | | | |
| M⁰_{Rk,s} | Bending Moment characteristic failure (cl. 8.8) | [Nm] | | 12 | 30 | 60 | 105 | | |
| γ_{ms}¹⁾ | Partial safety factor | [-] | | 1,55 | | | | | |
| Fire Resistance (All load direction) | | | | | | | | | |
| F_{Rk,s,fi,30} | For fire resistance duration = 30 minutes | [kN] | | 0,2 | 0,4 | 0,9 | 1,7 | | |
| F_{Rk,s,fi,60} | For fire resistance duration = 60 minutes | [kN] | | 0,2 | 0,3 | 0,8 | 1,3 | | |
| F_{Rk,s,fi,90} | For fire resistance duration = 90 minutes | [kN] | | 0,1 | 0,3 | 0,6 | 1,1 | | |
| F_{Rk,s,fi,120} | For fire resistance duration = 120 minutes | [kN] | | 0,1 | 0,2 | 0,5 | 0,8 | | |
| γ_{M,fi}²⁾ | Partial safety factor under fire exposure | [-] | | 1,0 | | | | | |
| s_{cr,fi} | Critical spacing under fire exposure | [mm] | | ≥200mm e 4xh _{ef} | | | | | |
| s_{min,fi} | Minimum spacing | [mm] | | 35 | 45 | 50 | 75 | | |
| c_{cr,fi}³⁾ | Critical edge distance under fire exposure | [mm] | | ≥200mm e 4xh _{ef} | | | | | |
| c_{min}³⁾ | Critical edge distance | [mm] | | 35 | 45 | 50 | 75 | | |

¹⁾ In absence of other national regulations;

²⁾ In absence of other national regulations, under fire exposure is recommended the safety factor $\gamma_{M,fi} = 1,0$;

³⁾ If fire attack from more than one side, the edge distance of the anchor has to be $C \geq 300$ mm.