


 1. Identification of the product: **FM744**

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

| d <sup>1)</sup> | L <sup>2)</sup><br>[mm] | t <sub>fix</sub><br>[mm] | Marking         | Cod.<br>(only anchor) |
|-----------------|-------------------------|--------------------------|-----------------|-----------------------|
| M6              | 40                      | <sup>3)</sup>            | FM-744  M6 Ø10  | 74400b10040           |
| M8              | 50                      | <sup>3)</sup>            | FM-744  M8 Ø14  | 74400b14050           |
| M10             | 60                      | <sup>3)</sup>            | FM-744  M10 Ø16 | 74400b16060           |
| M12             | 80                      | <sup>3)</sup>            | FM-744  M12 Ø20 | 74400b20080           |

| d <sup>1)</sup> | L <sup>2)</sup><br>[mm] | t <sub>fix</sub><br>[mm] | Marking         | Cod.        |
|-----------------|-------------------------|--------------------------|-----------------|-------------|
| M6              | 40                      | 12 <sup>4)</sup>         | FM-744  M6 Ø10  | 74411b10040 |
| M8              | 50                      | 15 <sup>4)</sup>         | FM-744  M8 Ø14  | 74411b14050 |
| M10             | 60                      | 20 <sup>4)</sup>         | FM-744  M10 Ø16 | 74411b16060 |
| M12             | 80                      | 15 <sup>4)</sup>         | FM-744  M12 Ø20 | 74411b20080 |

<sup>1)</sup> Nominal diameter of thread; <sup>2)</sup> Length of anchor; <sup>3)</sup> Thickness fixture max depending on screw length using  $t_{fix} = L_{screw8.8} - L$ ;

<sup>4)</sup> Thickness fixture max of screw in use.

3. Intended use:

|                 |                                                                           |
|-----------------|---------------------------------------------------------------------------|
| Generic type    | Torque controlled expansion anchor sleeve type                            |
| Base material   | Un-cracked concrete C20/25 to C50/60 acc. to EN 206                       |
| Material        | Steel zinc coated acc. to EN ISO 4042, screw cl. 8.8 acc. to EN ISO 898-1 |
| Durability      | Internal dry conditions                                                   |
| Loading         | Static and quasi-static                                                   |
| Fire Resistance | NPD                                                                       |
| Fire Reaction   | A1 according to EN 13501-1                                                |

 4. Manufacturer (art. 11.5): **Friulsider SpA via Trieste, 1 - 33048 San Giovanni al Natisone (Udine) - Italy**

 5. Authorised Representative (art. 12.2): **Not Relevant**

 6. System of Assessment AVCP (annex V): **System 1**

7/8. Harmonised Specification &amp; Notified Body:

|                                  | Name of Body                | System of Assessment | Reference     | EAD / hEN Document |
|----------------------------------|-----------------------------|----------------------|---------------|--------------------|
| Technical Specification Document | CSTB <sub>[TAB]</sub>       | 1                    | ETA-05/0169   | ETAG001 p.1-2      |
| Constancy of Performance & FPC   | ZAG nr.1404 <sub>[NB]</sub> | 1                    | 1404-CPR-3585 | ETAG001 p.1        |

 9. Declared Performance: **See Annex**

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 Friulsider 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, 03-01-2023 |

## ANNEX

Declared Performances acc. to ETA-05/0169 - ETAG001 p.1 e 2

Design method ETAG001-Annex C or EN 1992-4:2018

| ESSENTIAL CHARACTERISTICS                                   |                                                           |      | PERFORMANCE      |      |                    |                    |
|-------------------------------------------------------------|-----------------------------------------------------------|------|------------------|------|--------------------|--------------------|
| Installation parameters                                     |                                                           |      | M6 <sup>2)</sup> | M8   | M10                | M12                |
| d <sub>0</sub>                                              | Nominal diameter of drill bit                             | [mm] | 10               | 14   | 16                 | 20                 |
| h <sub>nom</sub>                                            | Minimum installation depth                                | [mm] | 40               | 50   | 60                 | 80                 |
| h <sub>ef</sub>                                             | Effective anchorage depth                                 | [mm] | 34 <sup>2)</sup> | 41   | 50                 | 67                 |
| h <sub>min</sub>                                            | Minimum thickness of the concrete member                  | [mm] | 100              | 100  | 100                | 135                |
| T <sub>inst</sub>                                           | Nominal torque moment                                     | [Nm] | 6                | 15   | 30                 | 50                 |
| s <sub>min</sub>                                            | Minimum spacing                                           | [mm] | 35               | 40   | 50                 | 70                 |
| c <sub>min</sub>                                            | Minimum edge distance                                     | [mm] | 35               | 40   | 50                 | 70                 |
| TENSION Steel failure                                       |                                                           |      |                  |      |                    |                    |
| N <sub>Rk,s</sub>                                           | Tension Steel characteristic failure                      | [kN] | 16               | 29   | 46                 | 67                 |
| γ <sub>ms,N</sub> <sup>1)</sup>                             | Partial safety factor for tension steel failure           | [-]  | 1,5              |      |                    |                    |
| Pull-out failure                                            |                                                           |      | M6 <sup>2)</sup> | M8   | M10                | M12                |
| N <sub>Rk,p,ucr</sub>                                       | Tension characteristic load in un-cracked concrete C20/25 | [kN] | 6 <sup>2)</sup>  | 12   | 17,8 <sup>3)</sup> | 27,3 <sup>3)</sup> |
| γ <sub>inst</sub>                                           | Partial safety factor                                     | [-]  | 1,0              |      |                    |                    |
| γ <sub>mc</sub> <sup>1)</sup>                               | Partial safety factor                                     | [-]  | 1,5              |      |                    |                    |
| Ψ <sub>c C30/37</sub>                                       | Increasing factor for concrete C30/37                     | [-]  | 1,22             |      |                    |                    |
| Ψ <sub>c C40/50</sub>                                       | Increasing factor for concrete C40/50                     | [-]  | 1,41             |      |                    |                    |
| Ψ <sub>c C50/60</sub>                                       | Increasing factor for concrete C50/60                     | [-]  | 1,55             |      |                    |                    |
| Concrete cone failure and Splitting failure                 |                                                           |      |                  |      |                    |                    |
| K <sub>ucr,N</sub>                                          | Factor for un-cracked concrete rif. EN 1992-4 § 7.2.1.4   | [-]  | 11,0             |      |                    |                    |
| s <sub>cr,N</sub>                                           | Critical spacing                                          | [mm] | 100              | 125  | 150                | 200                |
| c <sub>cr,N</sub>                                           | Critical edge distance                                    | [mm] | 50               | 62   | 75                 | 100                |
| s <sub>cr,sp</sub>                                          | Critical spacing (splitting)                              | [mm] | 200              | 250  | 300                | 400                |
| c <sub>cr,sp</sub>                                          | Critical edge distance(splitting)                         | [mm] | 100              | 125  | 150                | 200                |
| γ <sub>mc</sub> = γ <sub>m<sub>sp</sub></sub> <sup>1)</sup> | Partial safety factor                                     | [-]  | 1,5              |      |                    |                    |
| Displacement on Tension Load                                |                                                           |      | M6               | M8   | M10                | M12                |
| N <sub>ucr</sub>                                            | Service tension load in un-cracked concrete               | [kN] | 2,9              | 5,7  | 8,5                | 13,0               |
| δ <sub>N0,ucr</sub>                                         | Short term displacement under tension load                | [mm] | 0,5              | 0,6  | 0,8                | 1,2                |
| δ <sub>N∞,ucr</sub>                                         | Long term displacement under tension load                 | [mm] | 0,6              | 0,6  | 0,8                | 1,2                |
| SHEAR Steel failure                                         |                                                           |      | M6               | M8   | M10                | M12                |
| V <sub>Rk,s</sub>                                           | Shear Steel characteristic failure                        | [kN] | 7,4              | 14,6 | 21,5               | 32,0               |
| k <sub>7</sub>                                              | Ductility factor acc.to EN 1992-4 § 7.2.2.3.1             |      | 0,8              |      |                    |                    |
| M <sup>0</sup> <sub>Rk,s</sub>                              | Bending Moment characteristic failure                     | [Nm] | 12               | 30   | 60                 | 105                |
| γ <sub>ms,V</sub> <sup>1)</sup>                             | Partial safety factor for shear steel failure             | [-]  | 1,25             |      |                    |                    |
| Shear Concrete Pry-out failure                              |                                                           |      |                  |      |                    |                    |
| K <sub>8</sub>                                              | Factor acc. to EN 1992-4 § 7.2.2.4                        | [-]  | 1,0              |      |                    | 2,0                |
| γ <sub>mc</sub> <sup>1)</sup>                               | Partial safety factor                                     | [-]  | 1,5              |      |                    |                    |
| Shear Concrete Edge failure                                 |                                                           |      |                  |      |                    |                    |
| l <sub>ef</sub>                                             | Effective anchorage length                                | [mm] | 34               | 41   | 50                 | 67                 |
| d <sub>nom</sub>                                            | Nominal diameter of anchor                                | [mm] | 10               | 14   | 16                 | 20                 |
| γ <sub>mc</sub> <sup>1)</sup>                               | Partial safety factor                                     | [-]  | 1,5              |      |                    |                    |
| Displacement on Shear Load                                  |                                                           |      | M6               | M8   | M10                | M12                |
| V                                                           | Service shear load in concrete                            | [kN] | 4,2              | 8,3  | 12,3               | 18,3               |
| δ <sub>V0</sub>                                             | Short term displacement under shear load                  | [mm] | 2,5              | 3,3  | 2,9                | 3,5                |
| δ <sub>V∞</sub>                                             | Long term displacement under shear load                   | [mm] | 4,5              | 6,4  | 5,6                | 6,8                |

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