

**Declaration of Performance**  
DoP MTH-en



1. Product type: MTH anchor

| Product code with DIN 125 washer | Product code with DIN 9021 washer | Metric | Length [mm]                   | Outer diameter [mm] | Fixture thickness [mm]    |                                      |                  |
|----------------------------------|-----------------------------------|--------|-------------------------------|---------------------|---------------------------|--------------------------------------|------------------|
|                                  |                                   |        |                               |                     | $h_{ef}$ standard DIN 125 | $h_{ef}$ standard DIN 9021 / DIN 440 | $h_{ef}$ reduced |
| AH06LLL                          | AH2106LLL                         | M6     | 3 last digits of product code | 6                   | L-58                      | L-58                                 | --               |
| AH08LLL                          | AH2108LLL                         | M8     |                               | 8                   | L-70                      | L-71                                 | L-57             |
| AH10LLL                          | AH2110LLL                         | M10    |                               | 10                  | L-80                      | L-80                                 | L-67             |
| AH12LLL                          | AH2112LLL                         | M12    |                               | 12                  | L-92                      | L-94                                 | L-77             |
| AH14LLL                          | AH2114LLL                         | M14    |                               | 14                  | L-108                     | L-108                                | --               |
| AH16LLL                          | AH2116LLL                         | M16    |                               | 16                  | L-122                     | L-124                                | L-103            |
| AH20LLL                          | AH2120LLL                         | M20    |                               | 20                  | L-147                     | L-149                                | L-121            |

3. Intended use: Generic type: Torque controlled anchor sleeve type  
 Base material: Non cracked concrete C20/25 to C50/60 according to EN 206-1.  
 Material: Made of steel, zinc plated ISO 4042 A2K  
 Durability: Internal dry conditions  
 Loading: Static, quasi static loads  
 Fire resistance: Non declared performance  
 Assumed working life: 50 years

4. Manufacturer: Index Fixing Systems. Técnicas Expansivas S.L.  
 Segador, 13  
 26006 Logroño, La Rioja, SPAIN

5. Authorised representative: No applicable

6. System of assessment of performance: 1

7. Harmonised standard: No applicable

8. European technical assessment : Tech. assessment body: IETcc; Instituto Eduardo Torroja de ciencias de la construcción. Notified body 1219.  
 issued: ETA 05/0242  
 on the basis of: EAD 33032-00-0601  
 performed: Determination of product type, initial inspection of the manufacturing plant and continuous surveillance of FPC  
 under system: 1  
 and issued: Certificate CE 1219-CPR-0006

9. Declared performances:

| Essential characteristics for standard embedment depth              |   |      | Performance  |              |      |              |              |              |              | Technical specification |
|---|---|------|--------------|--------------|------|--------------|--------------|--------------|--------------|-------------------------|
|   |   |      | M6           | M8           | M10  | M12          | M14          | M16          | M20          |                         |
| <b>Installation parameters</b>                                      |   |      |              |              |      |              |              |              |              | ETA 05/0242             |
| $d_o$   | Nominal diameter of drill bit:                        | [mm] | 6            | 8            | 10   | 12           | 14           | 16           | 20           |                         |
| $h_{ef}$  | Effective standard embedment depth:                   | [mm] | 40           | 48           | 55   | 65           | 75           | 84           | 103          |                         |
| $d_f$   | Fixture clearance hole diameter:                      | [mm] | 7            | 9            | 12   | 14           | 16           | 18           | 22           |                         |
| $T_{inst}$  | Nominal installation torque:                          | [Nm] | 7            | 20           | 35   | 60           | 90           | 120          | 240          |                         |
| $h_1$   | Depth of drilled hole:                                | [mm] | 55           | 65           | 75   | 85           | 100          | 110          | 135          |                         |
| $h_{nom}$   | Minimum installation depth:                           | [mm] | 49.5         | 59.5         | 66.5 | 77           | 91           | 103.5        | 125          |                         |
| $h_{min}$   | Min. thickness of concrete member:                    | [mm] | 100          | 100          | 110  | 130          | 150          | 168          | 206          |                         |
| $s_{min}$   | Minimum spacing:                                      | [mm] | 35           | 40           | 50   | 70           | 80           | 90           | 135          |                         |
| $c_{min}$   | Minimum edge distance:                                | [mm] | 35           | 40           | 50   | 70           | 80           | 90           | 135          |                         |
| <b>Tension load: steel failure</b>                                  |   |      |              |              |      |              |              |              |              | ETA 05/0242             |
| $N_{Rk,s}$  | Tension steel character. resistance:                  | [kN] | 7.4          | 13.0         | 23.7 | 33.3         | 49.1         | 60.1         | 99.5         |                         |
| $\gamma_{Ms}$   | Partial safety factor:                                | [-]  | 1.40         | 1.40         | 1.40 | 1.40         | 1.40         | 1.40         | 1.40         |                         |
| <b>Tension load: concrete cone or splitting failure in concrete</b> |   |      |              |              |      |              |              |              |              | ETA 05/0242             |
| $N_{Rk,p}$  | Tension characteristic resistance in concrete C20/25: | [kN] | Not decisive | Not decisive | 19   | Not decisive | Not decisive | Not decisive | Not decisive |                         |
| $\gamma_{Mp}$   | Partial safety factor: <sup>1)</sup>                  | [-]  | 1.5          | 1.5          | 1.5  | 1.5          | 1.5          | 1.5          | 1.5          |                         |
| $\psi_c$  | C30/37  | [-]  | 1.22         | 1.22         | 1.22 | 1.22         | 1.22         | 1.22         | 1.22         |                         |
| $\psi_c$  | C40/50  | [-]  | 1.41         | 1.41         | 1.41 | 1.41         | 1.41         | 1.41         | 1.41         |                         |
| $\psi_c$  | C50/60  | [-]  | 1.55         | 1.55         | 1.55 | 1.55         | 1.55         | 1.55         | 1.55         |                         |
| <b>Tension load: concrete cone or splitting failure in concrete</b> |   |      |              |              |      |              |              |              |              | ETA 05/0242             |
| $s_{cr,N}$  | Critical spacing:                                     | [mm] | 120          | 144          | 165  | 195          | 225          | 252          | 309          |                         |
| $s_{cr,sp}$   | Critical spacing (splitting):                         | [mm] | 160          | 192          | 220  | 260          | 300          | 336          | 412          |                         |
| $c_{cr,N}$  | Critical edge distance:                               | [mm] | 60           | 72           | 83   | 98           | 113          | 126          | 155          |                         |
| $c_{cr,sp}$   | Critical edge distance (splitting):                   | [mm] | 80           | 95           | 110  | 130          | 150          | 168          | 206          |                         |
| $\gamma_{Mc}$   | Partial safety factor: <sup>1)</sup>                  | [-]  | 1.5          | 1.5          | 1.8  | 1.8          | 1.8          | 1.8          | 1.8          |                         |
| <b>Displacements under tension loads</b>                            |   |      |              |              |      |              |              |              |              | ETA 05/0242             |
| $N$   | Tension service load                                  | [kN] | 3.8          | 6.6          | 9.0  | 12.6         | 15.6         | 18.5         | 25.1         |                         |
| $\delta_{N0}$   | Displacements under tension loads                     | [mm] | 0.4          | 0.7          | 1.0  | 1.2          | 1.3          | 1.9          | 2.2          |                         |
| $\delta_{N\infty}$  | Displacements under tension loads                     | [mm] | 1.8          | 2.1          | 2.4  | 2.6          | 2.7          | 3.3          | 3.8          |                         |
| <b>Shear load: steel failure</b>                                    |   |      |              |              |      |              |              |              |              | ETA 05/0242             |
| $V_{Rk,s}$  | Shear steel characteristic resistance:                | [kN] | 5.1          | 9.3          | 14.7 | 20.6         | 28.1         | 38.4         | 56.3         |                         |
| $M_{Rk,s}^0$  | Characteristic bending moment::                       | [Nm] | 7.7          | 19.1         | 38.1 | 64.1         | 102.2        | 163.1        | 298.5        |                         |
| $\gamma_{Ms}$   | Partial safety factor:                                | [-]  | 1.25         | 1.25         | 1.25 | 1.25         | 1.25         | 1.25         | 1.25         |                         |
| <b>Shear load: concrete pryout failure</b>                          |   |      |              |              |      |              |              |              |              | ETA 05/0242             |
| $K$   | K factor:   | [-]  | 1            | 1            | 1    | 2            | 2            | 2            | 2            |                         |
| $\gamma_{Mpr}$  | Partial safety factor:                                | [-]  | 1.5          | 1.5          | 1.5  | 1.5          | 1.5          | 1.5          | 1.5          |                         |
| <b>Shear load: concrete edge failure</b>                            |   |      |              |              |      |              |              |              |              | ETA 05/0242             |
| $l_f$   | Effective anchorage depth under shear loads:          | [mm] | 40           | 48           | 55   | 65           | 75           | 84           | 103          |                         |
| $d_{nom}$   | Outside anchor diameter:                              | [mm] | 6            | 8            | 10   | 12           | 14           | 16           | 20           |                         |
| $\gamma_{Mc}$   | Partial safety factor:                                | [-]  | 1.5          | 1.5          | 1.5  | 1.5          | 1.5          | 1.5          | 1.5          |                         |
| <b>Displacements under shear loads</b>                              |   |      |              |              |      |              |              |              |              | ETA 05/0242             |
| $V$   | Service shear load:                                   | [kN] | 2.9          | 5.3          | 8.4  | 11.8         | 16.0         | 21.9         | 32.1         |                         |
| $\delta_{V0}$   | Short term displacement under shear loads:            | [mm] | 0.65         | 2.80         | 1.75 | 2.45         | 2.78         | 3.53         | 4.13         |                         |
| $\delta_{V\infty}$  | Long term displacement under shear loads:             | [mm] | 0.98         | 4.20         | 2.63 | 3.68         | 4.16         | 5.29         | 6.19         |                         |

1) In absence of other national regulations

| Essential characteristics for reduced embedment depth               |   |      | Performance |                  |              |              |     |              |              | Technical specification |
|---|---|------|-------------|------------------|--------------|--------------|-----|--------------|--------------|-------------------------|
|   |   |      | M6          | M8 <sup>2)</sup> | M10          | M12          | M14 | M16          | M20          |                         |
| <b>Installation parameters</b>                                      |   |      |             |                  |              |              |     |              |              | ETA 05/0242             |
| $d_o$   | Nominal diameter of drill bit:                        | [mm] | ---         | 8                | 10           | 12           | --  | 16           | 20           |                         |
| $h_{ef}$  | Effective reduced embedment depth:                    | [mm] | --          | 35               | 42           | 50           | --  | 65           | 78           |                         |
| $d_f$   | Fixture clearance hole diameter:                      | [mm] | --          | 9                | 12           | 14           | --  | 18           | 22           |                         |
| $T_{inst}$  | Nominal installation torque:                          | [Nm] | --          | 20               | 35           | 60           | --  | 120          | 240          |                         |
| $h_1$   | Depth of drilled hole:                                | [mm] | --          | 50               | 60           | 70           | --  | 90           | 107          |                         |
| $h_{nom}$   | Minimum installation depth:                           | [mm] | --          | 46.5             | 53.5         | 62           | --  | 84.5         | 97           |                         |
| $h_{min}$   | Min. thickness of concrete member:                    | [mm] | --          | 100              | 100          | 100          | --  | 130          | 450          |                         |
| $s_{min}$   | Minimum spacing:                                      | [mm] | --          | 40               | 50           | 70           | --  | 90           | 135          |                         |
| $c_{min}$   | Minimum edge distance:                                | [mm] | --          | 40               | 50           | 70           | --  | 90           | 135          |                         |
| <b>Tension load: steel failure</b>                                  |   |      |             |                  |              |              |     |              |              | ETA 05/0242             |
| $N_{Rk,s}$  | Tension steel character. resistance:                  | [kN] | --          | 13.0             | 23.7         | 33.3         | --  | 60.1         | 99.5         |                         |
| $\gamma_{Ms}$   | Partial safety factor:                                | [-]  | --          | 1.40             | 1.40         | 1.40         | --  | 1.40         | 1.40         |                         |
| <b>Tension load: concrete cone or splitting failure in concrete</b> |   |      |             |                  |              |              |     |              |              | ETA 05/0242             |
| $N_{Rk,p}$  | Tension characteristic resistance in concrete C20/25: | [kN] | --          | 10               | Not decisive | Not decisive | --  | Not decisive | Not decisive |                         |
| $\gamma_{Mp}$   | Partial safety factor: <sup>1)</sup>                  | [-]  | --          | 1.5              | 1.5          | 1.5          | --  | 1.5          | 1.5          |                         |
| $\psi_c$  | C30/37  | [-]  | --          | 1.22             | 1.22         | 1.22         | --  | 1.22         | 1.22         |                         |
| $\psi_c$  | C40/50  | [-]  | --          | 1.41             | 1.41         | 1.41         | --  | 1.41         | 1.41         |                         |
| $\psi_c$  | C50/60  | [-]  | --          | 1.55             | 1.55         | 1.55         | --  | 1.55         | 1.55         |                         |
| <b>Tension load: concrete cone or splitting failure in concrete</b> |   |      |             |                  |              |              |     |              |              | ETA 05/0242             |
| $s_{cr,N}$  | Critical spacing:                                     | [mm] | --          | 105              | 126          | 150          | --  | 195          | 225          |                         |
| $s_{cr,sp}$   | Critical spacing (splitting):                         | [mm] | --          | 140              | 168          | 200          | --  | 260          | 300          |                         |
| $c_{cr,N}$  | Critical edge distance:                               | [mm] | --          | 53               | 63           | 75           | --  | 98           | 113          |                         |
| $c_{cr,sp}$   | Critical edge distance (splitting):                   | [mm] | --          | 70               | 84           | 100          | --  | 130          | 150          |                         |
| $\gamma_{Mc}$   | Partial safety factor: <sup>1)</sup>                  | [-]  | --          | 1.5              | 1.5          | 1.5          | --  | 1.5          | 1.5          |                         |
| <b>Displacements under tension loads</b>                            |   |      |             |                  |              |              |     |              |              | ETA 05/0242             |
| $N$   | Tension service load                                  | [kN] | --          | 4.8              | 6.5          | 8.5          | --  | 12.6         | 15.6         |                         |
| $\delta_{N0}$   | Displacements under tension loads                     | [mm] | --          | 0.3              | 0.6          | 1.0          | --  | 1.6          | 1.9          |                         |
| $\delta_{N\infty}$  | Displacements under tension loads                     | [mm] | --          | 1.4              | 1.7          | 2.1          | --  | 2.7          | 3.0          |                         |
| <b>Shear load: steel failure</b>                                    |   |      |             |                  |              |              |     |              |              | ETA 05/0242             |
| $V_{Rk,s}$  | Shear steel characteristic resistance:                | [kN] | --          | 9.3              | 14.7         | 20.6         | --  | 38.4         | 56.3         |                         |
| $M_{Rk,s}^{\wedge}$   | Characteristic bending moment:                        | [Nm] | --          | 19.1             | 38.1         | 64.1         | --  | 163.1        | 298.5        |                         |
| $\gamma_{Ms}$   | Partial safety factor:                                | [-]  | --          | 1.25             | 1.25         | 1.25         | --  | 1.25         | 1.25         |                         |
| <b>Shear load: concrete pryout failure</b>                          |   |      |             |                  |              |              |     |              |              | ETA 05/0242             |
| $K$   | K factor:   | [-]  | --          | 1                | 1            | 1            | --  | 2            | 2            |                         |
| $\gamma_{Mpr}$  | Partial safety factor:                                | [-]  | --          | 1.5              | 1.5          | 1.5          | --  | 1.5          | 1.5          |                         |
| <b>Shear load: concrete edge failure</b>                            |   |      |             |                  |              |              |     |              |              | ETA 05/0242             |
| $l_f$   | Effective anchorage depth under shear loads:          | [mm] | --          | 35               | 42           | 50           | --  | 65           | 75           |                         |
| $d_{nom}$   | Outside anchor diameter:                              | [mm] | --          | 8                | 10           | 12           | --  | 16           | 20           |                         |
| $\gamma_{Mc}$   | Partial safety factor:                                | [-]  | --          | 1.5              | 1.5          | 1.5          | --  | 1.5          | 1.5          |                         |
| <b>Displacements under shear loads</b>                              |   |      |             |                  |              |              |     |              |              | ETA 05/0242             |
| $V$   | Service shear load:                                   | [kN] | --          | 5.3              | 8.4          | 11.8         | --  | 21.9         | 32.1         |                         |
| $\delta_{V0}$   | Short term displacement under shear loads:            | [mm] | --          | 0.59             | 1.22         | 1.10         | --  | 3.10         | 3.40         |                         |
| $\delta_{V\infty}$  | Long term displacement under shear loads:             | [mm] | --          | 0.89             | 1.83         | 1.65         | --  | 4.60         | 5.10         |                         |


1) In absence of other national regulations

2) Use restricted to anchoring of structural components which are statically indeterminate

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9.

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed on behalf of the manufacturer by:



Santiago Reig. Technical manager  
Logroño, 01.07.2018