

DECLARATION OF PERFORMANCE

DoP No. 16/0783-WDI1

1. Unique identification code of the product-type: Walraven Drop In Anchor WDI1



2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11 (4):

See: ETA-16/0783

Charge number: See product packaging

3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

| | |
|--------------|--|
| Generic type | Steel expansion anchors |
| For use in | cracked and non-cracked concrete C20/25 to C50/60 acc. To EN 206:2000-12 |
| Material | WDI1, WDI1L Drop In Anchors are deformation-controlled expansion anchors in sizes of M6, M8, M10, M12, M16 and M20. WDI1 SSt Anchors are deformation-controlled expansion anchors in sizes of M6, M8, M10, M12, M16. The anchors WDI1 and WDI1L are made of galvanized steel and WDI1 SSt are made of stainless steel. |
| Use category | Deformation-controlled steel expansion anchors in sizes M6, M8, M10, M12, M16 and M20, for multiple use for non-structural applications in concrete |
| Loading | Loading static or quasi-static |

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

J. van Walraven Holding B.V., Industrieweg 5, 3641 RK Mijdrecht, The Netherlands

5. Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2):

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 2+

7. In case of the declaration of performance concerning a construction product covered by a harmonized standard:

8. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Technical Assessment Body: Instytut Techniki Budowlanej
 European Technical Assessment: ETA 16/0783
 European Assessment Document: ETAG 001:06
 Notified body/ies: 1488

The notified body 1488 performed under system 1:

- (i) determination of the product type on the basis of type testing (including sampling), type calculation, tabulated values or descriptive documentation of the product;
- (ii) initial inspection of the manufacturing plant and of factory production control;
- (iii) continuous surveillance, assessment and evaluation of factory production control and issued:

Certificate of constancy of performance: 1488-CPR-0465/Z

9. Declared performance/s:

| Essential Characteristics | Performance | Harmonized Technical Specification |
|---|-----------------------|------------------------------------|
| Characteristic resistance for all load directions | ETA 13/0584, Annex C1 | ETAG 001 Part 6 |
| Edge distances and spacing | ETA 13/0584, Annex C1 | |
| Characteristic resistance under fire exposure | 13/0584, Annex C2 | |

Table C1: Characteristic resistance - WDI1 DROP IN ANCHOR and WDI1L DROP IN ANCHOR LIPPED
 (design acc. to ETAG 001, Annex C, method C)

| R-DCA and R-DCL | | | Property class | M6 | M8 | M10 | M12 | M16 | M20 |
|--|-----------------|------|----------------|------|------|------|------|-------|-------|
| All load directions (fastening screw or threaded rod property class ≥ 4.8) | | | | | | | | | |
| Characteristic resistance in cracked and non-cracked concrete C20/25 to C50/60 | F_{Rk} | [kN] | ≥ 4.8 | 1,52 | 3,01 | 4,57 | 6,43 | 13,31 | 17,38 |
| Partial safety factor (installation safety factor $\gamma_2 = 1,4$ included) | γ_M^1 | [-] | - | 2,1 | | | | | |
| Spacing | s_{cr} | [mm] | | 200 | | | | 260 | 320 |
| Edge distance | c_{cr} | [mm] | | 150 | | | | 195 | 240 |
| Shear load with lever arm | | | | | | | | | |
| Characteristic resistance | $M_{Rk,S}^0$ | [Nm] | 4.8 | 6 | 15 | 30 | 52 | 133 | 260 |
| Characteristic resistance | $M_{Rk,S}^0$ | [Nm] | 5.8 | 8 | 19 | 37 | 66 | 167 | 325 |
| Characteristic resistance | $M_{Rk,S}^0$ | [Nm] | 6.8 | 9 | 23 | 45 | 79 | 200 | 390 |
| Characteristic resistance | $M_{Rk,S}^0$ | [Nm] | 8.8 | 12 | 30 | 60 | 105 | 267 | 520 |
| Partial safety factor | γ_{Ms}^1 | [-] | - | 1,25 | | | | | |

¹ in the absence of other national regulations

² characteristic bending moment $M_{Rk,S}^0$ for the equation (5.5) in ETAG 001, Annex C

Table C2: Characteristic resistance – WDI1 SSt DROP IN ANCHOR (design acc. to ETAG 001, Annex C, method C)

| WDI1 SSt DROP IN ANCHOR | | | Property class | M6 | M8 | M10 | M12 | M16 |
|--|-----------------|------|----------------|------|------|------|------|------|
| All load directions (fastening screw or threaded rod property class A4-70) | | | | | | | | |
| Characteristic resistance in cracked and non-cracked concrete C20/25 to C50/60 | F_{Rk} | [kN] | A4-70 | 1,00 | 2,01 | 3,20 | 4,59 | 8,27 |
| Partial safety factor (installation safety factor $\gamma_2 = 1,4$ included) | γ_M^1 | [-] | - | 2,1 | | | | |
| Spacing | s_{cr} | [mm] | | 200 | | | | |
| Edge distance | c_{cr} | [mm] | | 150 | | | | |
| Shear load with lever arm | | | | | | | | |
| Characteristic resistance | $M_{Rk,S}^2$ | [Nm] | A4-70 | 11 | 26 | 52 | 92 | 233 |
| Partial safety factor | γ_{Ms}^1 | [-] | - | 1,25 | | | | |

¹ in the absence of other national regulations

² characteristic bending moment $M_{Rk,S}$ for the equation (5.5) in ETAG 001, Annex C

Table C3: Characteristic resistance under fire exposure in concrete C20/25 to C50/60 – WDI1 DROP IN ANCHOR and WDI1L DROP IN ANCHOR LIPPED (design acc. to ETAG 001, Annex C, method C)

| Fire resistance class | RWDI1 DROP IN ANCHOR and WDI1L DROP IN ANCHOR LIPPED | M8 | M10 | M12 | M16 | M20 | |
|---|--|------|--------------|-----|-----|-----|-----|
| All load directions (fastening screw or threaded ϕ property class 4.8) | | | | | | | |
| R30 | Characteristic resistance $F_{Rk,fi}^1$ | [kN] | 0,4 | 0,9 | 1,6 | 3,1 | 4,3 |
| R60 | | [kN] | 0,3 | 0,8 | 1,3 | 2,4 | 3,7 |
| R90 | | [kN] | 0,3 | 0,6 | 1,1 | 2,0 | 3,2 |
| R120 | | [kN] | 0,2 | 0,5 | 0,8 | 1,6 | 2,5 |
| Spacing | $s_{cr,fi}$ | [mm] | 4 x h_{ef} | | | | |
| Edge distance | $c_{cr,fi}$ | [mm] | 2 x h_{ef} | | | | |
| The design method covers anchors with a fire attack from one side only. In case of fire attack from more than one side, the edge distance shall be ≥ 300 mm. | | | | | | | |

¹ in the absence of other national regulations a partial safety factor $\gamma_{m,fi} = 1,0$ is recommended

Table C4: Characteristic resistance under fire exposure in concrete C20/25 to C50/60 - WDI1 SSt DROP IN ANCHOR
(design acc. to ETAG 001, Annex C, method C)

| Fire resistance class | WDI1 SSt DROP IN ANCHOR | M8 | M10 | M12 | M16 | |
|---|---|------|--------------|-----|-----|-----|
| All load directions (fastening screw or threaded rod property class A4-70) | | | | | | |
| R30 | Characteristic resistance $F_{Rk,n}^1$ | [kN] | 0,5 | 0,8 | 1,1 | 2,1 |
| R60 | | [kN] | 0,5 | 0,8 | 1,1 | 2,1 |
| R90 | | [kN] | 0,5 | 0,8 | 1,1 | 2,1 |
| R120 | | [kN] | 0,4 | 0,6 | 0,9 | 1,6 |
| Spacing | $s_{cr,n}$ | [mm] | 4 x h_{ef} | | | |
| Edge distance | $c_{cr,n}$ | [mm] | 2 x h_{ef} | | | |
| The design method covers anchors with a fire attack from one side only. In case of fire attack from more than one side, the edge distance shall be ≥ 300 mm. | | | | | | |

¹ in the absence of other national regulations a partial safety factor $\gamma_{m,n} = 1,0$ is recommended

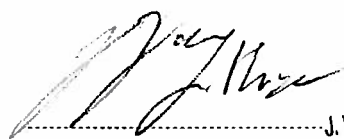
Technical Documentation and / or Specific Technical Documentation:

ETA-16/0783 of 09/26/2016

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 for and on behalf of the manufacturer by:



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