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# PRODUCT DATA SHEET – WDBLS 8

## Section 1. PRODUCT DESCRIPTION

**CONCRETE SCREW WITH HEX WASHER HEAD – WDBLS 8**






**Concrete screw with a hexagonal washer head WDBLS 8 with a threaded pin for the installation of permanent and temporary fixings. It is made of carbon steel and covered with a layer of galvanic zinc, which provides anti-corrosion protection. The screw is intended for the installation of temporary fixings at the construction site, serial fixings (barriers, handrails, storage racks, brackets), and the installation of light and medium steel structures.**

**Recommended for substrates:**

- **cracked and non-cracked, reinforced and non-reinforced concrete C20/25 ÷ C50/60**

**Advantages:**

- **no stresses characteristic of mechanical anchors**
- **quick and easy assembly by direct screwing into a hole in the concrete**
- **without the use of expansion sleeves or other anchoring mortars**
- **immediate load ability**
- **multiple use**
- **fire resistance R30 – R120**

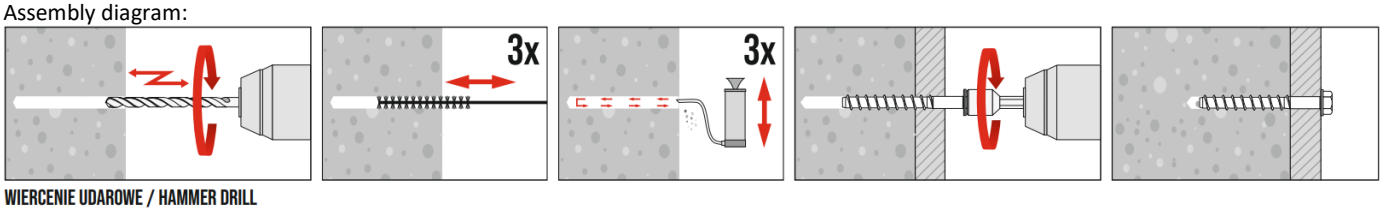



**Concrete screws hold European Technical Assessment: ETA-20/0768**

## Section 2. METHOD OF INSTALLATION

1. Original mechanical screws delivered by the manufacturer can be used only
2. Before installation check whether parameters of the substrate (where screws are to be installed) conform to parameters of the substrate used in testing, based on which characteristic loading resistances of connections were determined
3. Install screws so that reinforcement of the substrate is not damaged
4. Before installation, indicate the drilling points where screws are to be installed in accordance with installation guidelines
5. Then drill the holes in accordance with the parameters selected (diameter and depth of the hole), perpendicularly to the substrate
6. Clean holes with SCF brush (min. 3x) and blow out clean with PCF pump (min. 3x)
7. The screws should be screwed into the prepared hole and subsequently tightened with the appropriate tightening torque ($T_{inst}$) using a torque wrench
8. Make sure that the washer part of the head is pressed against the fastened element after the screw is fastened

Assembly diagram:

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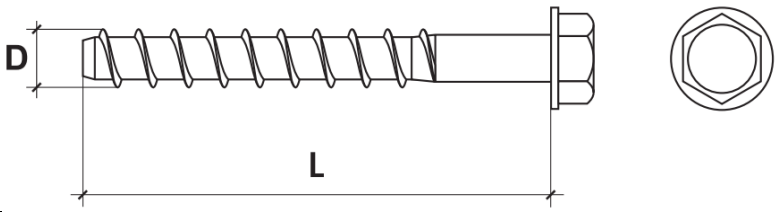
## Section 3. TECHNICAL DATA




| TABLE 1. INSTALLATION PARAMETERS | | | |
|---|---|---|---|
| **Anchor size** | | **[mm]** | **8** |
| Hole diameter | $D_0$ | [mm] | 8 |
| Nominal embedment depth | $h_{nom}$ | [mm] | 65 |
| Effective embedment depth | $h_{ef}$ | [mm] | 50,6 |
| Drilled hole depth | $h_0 \geq$ | [mm] | 75 |
| Fixed member hole diameter | $d_f \leq$ | [mm] | 11 |
| Torque | $T_{inst}$ | [Nm] | 40 |
| Wrench size | SW | [mm] | 13 |
| Minimum substrate thickness | $h_{min}$ | [mm] | 110 |
| Minimum spacing | $s_{min}$ | [mm] | 50 |
| Minimum clearance from edge | $c_{min}$ | [mm] | 50 |
| Spacing which ensures transfer of characteristic resistance for tension of a single fastener without any impact from the edge and spacing in case of concrete cone failure | $s_{cr,N}$ | [mm] | 151,8 |
| Clearance from the edge which ensures transfer of characteristic resistance for tension of a single fastener without any impact from the edge and spacing in case of concrete cone failure | $c_{cr,N}$ | [mm] | 75,9 |
| Spacing which ensures transfer of characteristic resistance for tension of a single fastener without any impact from the edge and spacing in case of pry-out failure | $s_{cr,sp}$ | [mm] | 151,8 |
| Clearance from the edge which ensures transfer of characteristic resistance for tension of a single fastener without any impact from the edge and spacing in case of pry-out failure | $c_{cr,sp}$ | [mm] | 75,9 |

| TABLE 2. TENSILE STRENGTH | | | | |
|---|---|---|---|---|
| Characteristic resistance for tension for steel | | $N_{Rk,s}$ | [kN] | 35,9 |
| Design loading resistance for tension for steel | | $N_{Rd,s}$ | [kN] | 25,6 |
| Characteristic pull-out strength | non-cracked concrete | $N_{Rk,p}$ | [kN] | 9,0 |
| | cracked concrete | $N_{Rk,p}$ | [kN] | 4,5 |
| Design pull-out strength | non-cracked concrete | $N_{Rd,p}$ | [kN] | 4,29 |
| | cracked concrete | $N_{Rd,p}$ | [kN] | 2,14 |
| Characteristic resistance for concrete cone failure | non-cracked concrete | $N_{Rk,c}$ | [kN] | 17,7 |
| | cracked concrete | $N_{Rk,c}$ | [kN] | 12,4 |
| Design resistance for concrete cone failure | non-cracked concrete | $N_{Rd,c}$ | [kN] | 8,4 |
| | cracked concrete | $N_{Rd,c}$ | [kN] | 5,9 |

| TABLE 3. SHEAR STRENGTH | | | | |
|---|---|---|---|---|
| Characteristic resistance for shear for steel | | $V_{Rk,s}$ | [kN] | 16,9 |
| Design resistance for shear for steel | | $V_{Rd,s}$ | [kN] | 11,3 |
| Characteristic resistance for bend for steel | | $M^0_{Rk,s}$ | [Nm] | 39,1 |
| Design resistance for bend for steel | | $M^0_{Rk,s}$ | [Nm] | 26,1 |
| Characteristic resistance for pry-out failure | non-cracked concrete | $V_{Rk,cp}$ | [kN] | 17,7 |
| | cracked concrete | $V_{Rk,cp}$ | [kN] | 12,4 |
| Design resistance for pry-out failure for steel | non-cracked concrete | $V_{Rd,cp}$ | [kN] | 11,8 |
| | cracked concrete | $V_{Rd,cp}$ | [kN] | 8,3 |

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| TABLE 4. SELECTION TABLE | | | | | | |
|---|---|---|---|---|---|---|
| Product code | Hole diameter | Screw length | Thread outer diameter | Max. thickness of element installed | Head type | Number of pieces in a box |
| | $D_0$ [mm] | L [mm] | D [mm] | $t_{fix}$ [mm] | [-] | [pcs.] |
| **WDBLS-8** | | | | | | |
| **WDBLS-08050**[1)] | 8 | 50 | 9,9 | 1 | SW13 | 50 |
| **WDBLS-08060**[1)] | 8 | 60 | 9,9 | 1 | SW13 | 50 |
| **WDBLS-08070** | 8 | 70 | 9,9 | 5 | SW13 | 50 |
| **WDBLS-08080** | 8 | 80 | 9,9 | 15 | SW13 | 50 |
| **WDBLS-08100**[2)] | 8 | 100 | 9,9 | 35 | SW13 | 50 |
| **WDBLS-08130**[2)] | 8 | 130 | 9,9 | 65 | SW13 | 50 |
| **WDBLS-08150**[2)] | 8 | 150 | 9,9 | 85 | SW13 | 50 |

[1)] not covered by ETA
[2)] new products - please contact with sales representative

## Section 4. REMARKS

1. All previous versions of this Product Data Sheet shall cease to be valid
2. Data given in this Product Data Sheet is in accordance with current knowledge and published in good faith.
   Klimas Wkręt-met Sp. z o.o. is not responsible for correctness and quality of the fixing if recommendations regarding method of use and installation are not followed.

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