

## Section 1. PRODUCT DESCRIPTION

### HAMMER DRIVE PLUG – SM/SMN

Hammer drive plug SM/SMN comprises a polyethylene or polyamide sleeve and a countersunk head screw made of electroplated coatings or non-electrolytically applied zinc flake coatings steel. It is designed for fixing of wood and wood-based members. Increased head diameter ensures much better holding power of the elements being installed, and countersunk section provides reliable installation and eliminates damage to the screw when driving.

Types of substrates on which hammer drive plug SM/SMN can be installed:

- Normal concrete (use category A)
- Solid masonry (use category B)
- Hollow or perforated masonry (use category C)
- Lightweight aggregate concrete (use category D)
- Autoclaved aerated concrete (use category E)



Hammer drive plugs hold European Technical Assessment: ETA-19/0156

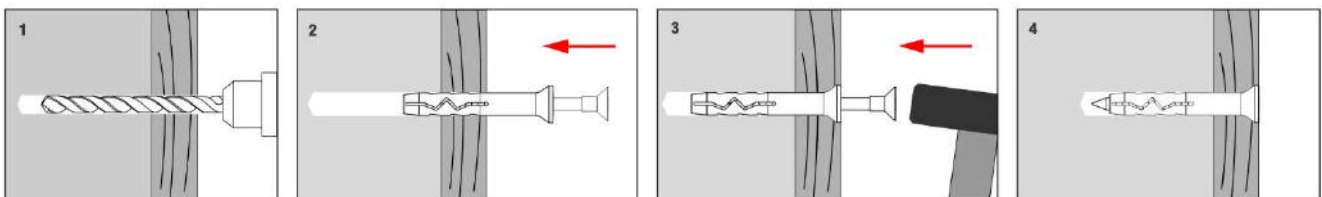


SM (PE-HD)

SMN (PA6)

## Section 2. METHOD OF INSTALLATION

1. Original hammer drive plugs delivered by the manufacturer can be used only
2. Before installation identify a substrate in which the plug will be installed and compare loads which the plug will carry to resistance values given in Product Data Sheet or European Technical Assessment
3. Select an adequate length of the plug so that expansion zone is in the construction material of the wall (thickness of member being fixed matches max. usable length of the plug –  $t_{fix}$ )
4. Use proper method of drilling according to a substrate type (holes in masonry substrate made of autoclaved aerated concrete blocks should be drilled using a drill without impact)
5. Diameter of drilled holes should match diameter of the plugs used
6. Drilled holes in substrates of solid materials should be deeper by min. 10mm compared to the plug anchorage depth
7. Clean the holes in solid materials of drillings with a back and forth motion of the drill at a reduced speed
8. Then insert the plug into a drilled hole, and drive the screw until it completely penetrates the sleeve



**PRODUCT DATA SHEET – SMø8 and SMNø8**

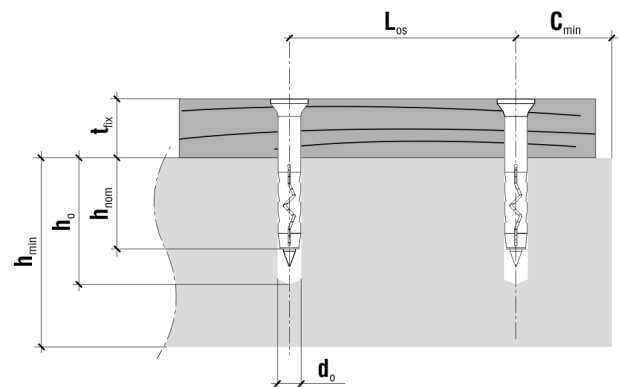
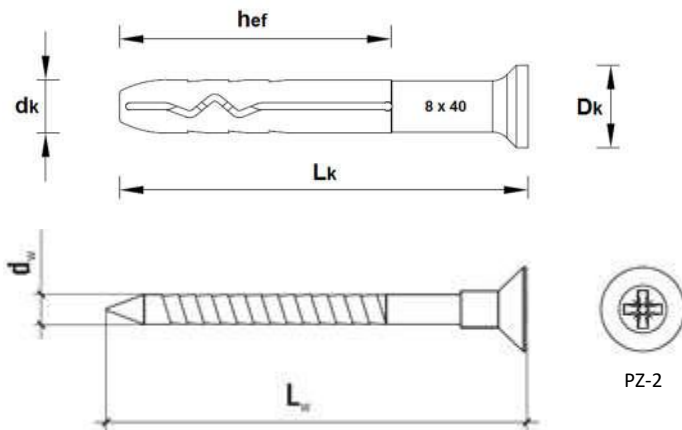
**Section 3. TECHNICAL DATA**

| Characteristic resistance [kN] / Design resistance [kN] |                                     |  |                                    |  |  |   |  |  |
|---|-------------------------------------|--|------------------------------------|--|--|---|--|--|
| Substrate type  | Concrete C12/15<br>(use category A) | Concrete C16/20 ÷ C50/60<br>(use category A) | Clay bricks MZ<br>(use category B) | Calcium silicate bricks KS<br>(use category B) | Calcium silicate hollow blocks<br>KSL (use category C) | Lightweight concrete blocks LAC<br>(use category D) | Autoclaved concrete blocks<br>AAC 2 (use category E) | Autoclaved concrete blocks<br>AAC 7 (use category E) |
| <b>SMø8</b>   | 0,40/0,20                           | 0,60/0,30                                    | 0,60/0,30                          | 0,60/0,30                                      | 0,40/0,20  | 0,35/0,17   | 0,10/0,05  | 0,25/0,12  |
| <b>SMNø8</b>  | 0,75/0,37                           | 1,00/0,50                                    | 1,00/0,50                          | 1,00/0,50                                      | 1,00/0,50  | 0,60/0,30   | 0,50/0,25  | 0,70/0,35  |

Partial safety factor for anchor resistance  $\gamma_M = 2,0$

| TECHNICAL PARAMETERS          |                |   |        |
|-------------------------------|----------------|---|--------|
| Parameter                     | Unit           | Value   |        |
|                               |                | SM ø8   | SMN ø8 |
| Plug diameter                 | $d_k$ [mm]     | 8   |        |
| Hole/drill diameter           | $d_o$ [mm]     | 8   |        |
| Effective anchorage depth     | $h_{eff}$ [mm] | 40  |        |
| Drilled hole depth            | $h_o$ [mm]     | 50  |        |
| Drive type                    | [-]            | PZ-2  |        |
| Sleeve material               | [-]            | PE-HD   | PA6    |
| Screw material                | [-]            | steel with electroplated coatings<br>or<br>non-electrolytically applied zinc flake coatings |        |
| European Technical Assessment | [-]            | ETA-19/0156   |        |

| INSTALLATION PARAMETERS |                          |                         |                     |
|-------------------------|--------------------------|-------------------------|---------------------|
| Plug type               | Min. substrate thickness | Min. distance from edge | Min. axial distance |
|                         | $h_{min}$ [mm]           | $c_{min}$ [mm]          | $L_{os}$ [mm]       |
| SM/SMN ø8               | 100                      | 100                     | 100                 |



**PRODUCT DATA SHEET – SMø8 and SMNø8**

| Anchor index<br><i>electroplated coatings</i> |           | Anchor sleeve           |                |                |                | Expansion nail |                |                | t <sub>fix</sub> |
|---|-----------|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
|   |           | h <sub>ef</sub> (ABCDE) | L <sub>k</sub> | d <sub>k</sub> | D <sub>k</sub> | L <sub>w</sub> | d <sub>w</sub> | D <sub>s</sub> | -                |
|   |           | [mm]                    | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]             |
| SM-08045                                      | SMN-08045 | 40                      | 45             | 8              | 11,5           | 50             | 4,9            | 11             | 5                |
| SM-08050                                      | SMN-08050 |                         | 50             |                |                | 55             |                |                | 10               |
| SM-08060                                      | SMN-08060 |                         | 60             |                |                | 65             |                |                | 20               |
| SM-08080                                      | SMN-08080 |                         | 80             |                |                | 85             |                |                | 40               |
| SM-08100                                      | SMN-08100 |                         | 100            |                |                | 105            |                |                | 60               |
| SM-08120                                      | SMN-08120 |                         | 120            |                |                | 125            |                |                | 80               |
| SM-08140                                      | SMN-08140 |                         | 140            |                |                | 145            |                |                | 100              |
| SM-08160                                      | SMN-08160 |                         | 160            |                |                | 165            |                |                | 120              |

| Anchor index<br><i>zinc flake</i> |             | Anchor sleeve           |                |                |                | Expansion nail |                |                | t <sub>fix</sub> |
|-----------------------------------|-------------|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|------------------|
|                                   |             | h <sub>ef</sub> (ABCDE) | L <sub>k</sub> | d <sub>k</sub> | D <sub>k</sub> | L <sub>w</sub> | d <sub>w</sub> | D <sub>s</sub> | -                |
|                                   |             | [mm]                    | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]           | [mm]             |
| SM-08045-D                        | SMN-08045-D | 40                      | 45             | 8              | 11,5           | 50             | 4,9            | 11             | 5                |
| SM-08050-D                        | SMN-08050-D |                         | 50             |                |                | 55             |                |                | 10               |
| SM-08060-D                        | SMN-08060-D |                         | 60             |                |                | 65             |                |                | 20               |
| SM-08080-D                        | SMN-08080-D |                         | 80             |                |                | 85             |                |                | 40               |
| SM-08100-D                        | SMN-08100-D |                         | 100            |                |                | 105            |                |                | 60               |
| SM-08120-D                        | SMN-08120-D |                         | 120            |                |                | 125            |                |                | 80               |
| SM-08140-D                        | SMN-08140-D |                         | 140            |                |                | 145            |                |                | 100              |
| SM-08160-D                        | SMN-08160-D |                         | 160            |                |                | 165            |                |                | 120              |

**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 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.