

SGR-UNI UNIVERSAL HELICOIDAL ANCHORS



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1. CODE REGISTRY

| Code | Description | Dimensions (mm) | Color | Unit | Pkg. / Pallet |
|------------|-------------------------------------|-----------------|-------|------|----------------------|
| TER11-3400 | SGR-UNI Universal Helicoidal Anchor | From 100 to 400 | Blu | pc. | 150 pc. / 4.800 pc. |
| TER11-3401 | Regulation bar | - | - | pc. | 1 pc. / - |
| TER11-3402 | Finishing plug | - | - | pc. | 150 pc. / 36.000 pc. |

- MATERIAL**
- The anchor is made of PA (polyamide)
 - Expansion body in PP and fixing screw in galvanized steel
 - The regulation bar is made of galvanized steel
 - The finishing plug in EPS (polystyrene)

2. DESCRIPTION

Anchor with 67 mm helical body with integrated expansion body \varnothing 8 mm and fixing screw (torx 30).

A single size for panels from 100mm up to 400mm thickness, applicable on various types of insulation:

- PUR boards
- Mineral fibre boards
- EPS boards
- Phenolic resin boards

The product guarantees the absence of thermal bridge (Value 0.000W / K) and can be used both on new buildings and on the renovation of existing buildings, compliant with ETAG014, and can be used on supports of classes A, B, C, D and E.

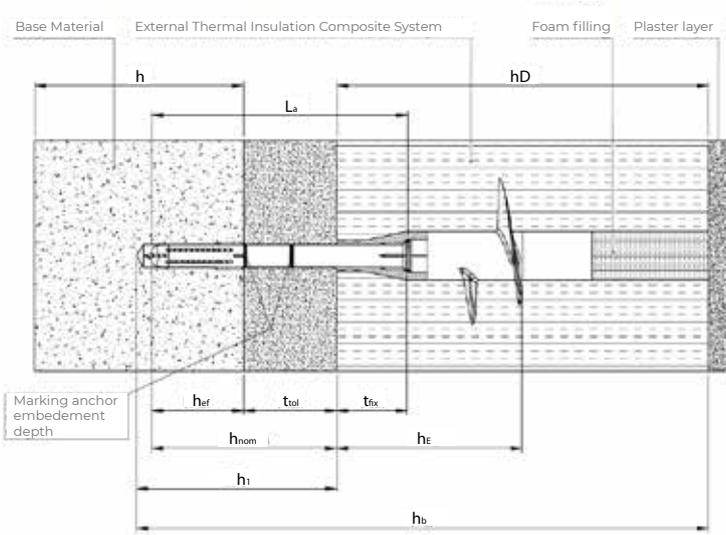
3. USE

Used for mechanical anchoring of insulating panels (although minerals, EPS, phenolic resin) and for the main types of masonry, supporting the load and stress of traction "to tear".

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4. FEATURES

Tolerance compensation $t_{tol} di \leq 40mm$



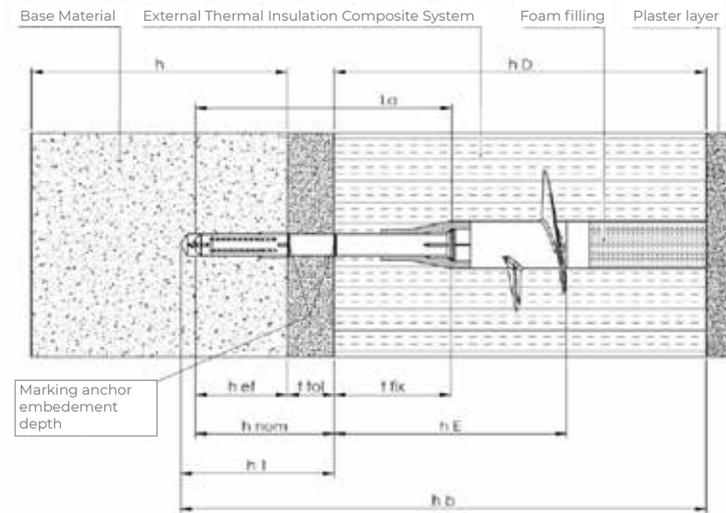
| | |
|-----------|---|
| h_{nom} | = overall plastic anchor embedment depth in the base material with non-load-bearing layer (t_{tol}) |
| h_{ef} | = effective anchorage depth |
| h_i | = depth of drilled hole to deepest point |
| h | = thickness of member (wall) |
| h_d | = thickness of insulation material |
| t_{tol} | = thickness of equalizing layer and/or non-load-bearing layer (0 - 40 mm) |
| t_{fix} | = position of screw plate |
| h_e | = embedment depth |
| h_b | = total borehole depth |
| L_a | = total length of anchor |

For an average tolerance compensation of $t_{tol} \leq 40$ mm (adhesive and old render), the stop washer must be positioned on the setting tool so that the user can see the label "Old building / Old Render" during installation.

| | |
|--|--|
| Maximum tolerance compensation t_{tol} | ≤ 20 mm (adhesive and old render) |
| Effective anchoring depth h_{ef} | ≥ 50 mm (in the supporting substrate) |
| Dowel load class | ≥ 0.20 kN / dowel (in concrete, solid brick and hollow brick, lightweight aggregate concrete and autoclaved aerated concrete) |



Tolerance compensation $t_{tol} di \leq 20mm$



| | |
|-----------|---|
| h_{nom} | = overall plastic anchor embedment depth in the base material with non-load-bearing layer (t_{tol}) |
| h_{ef} | = effective anchorage depth |
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| h | = thickness of member (wall) |
| h_d | = thickness of insulation material |
| t_{tol} | = thickness of equalizing layer and/or non-load-bearing layer (0 - 40 mm) |
| t_{fix} | = position of screw plate |
| h_e | = embedment depth |
| h_b | = total borehole depth |
| L_a | = total length of anchor |

For an average tolerance compensation of $t_{tol} \leq 20$ mm (adhesive and old render), the stop washer must be positioned on the setting tool so that the label "new building" is visible to the user during installation. This increases the effective anchoring depth to $h_{ef} \geq 50$ mm and the dowel load class ≥ 0.20 kN / dowel.

| | |
|--|--|
| Maximum tolerance compensation t_{tol} | ≤ 20 mm (adhesive and old render) |
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- USAGE** Screwed-in anchor for fixing external thermal insulation composite systems for insulation thicknesses of 100-400 mm with plaster layer in concrete, solid brick, hollow bricks, lightweight aggregate concrete and autoclaved aerated concrete
- CHARACTERISTICS**
- Recessed installation in the insulation material to avoid dowel plates.
 - Only one dowel length for all insulation materials and all substrates.
 - Clean cutting of the screwdriver into the insulation panel.
 - Secure anchoring of the screw dowel in the substrate.
 - No reduction of the U-value at CHI value 0.000 W / K.
- THERMAL BRIDGE EFFECT** Point-shaped heat loss coefficient (Chi value) according to EOTA Technical Report TR025
Chi value 0.000 W / K from 100 mm (foam filling)
Chi value 0.000 W / K from 150 mm (Styrofoam insulation plug)
- SUBSOIL** The substrate must have a sufficient load bearing capacity for the anchoring of the screw dowels. In the case of undefined subsoils, the characteristic load bearing capacity of the dowels may be determined by building site tests according to ETAG 014.
- APPLICATION** The dowel may only be used to transfer wind loads and not to transfer the inherent loads of the thermal insulation composite system.
- ACCESSORIES** Setting tool SW 14 with Torx Bit T30 made of steel, blue chromated.
Stop washer ø 60 mm made of polypropylene PP.
Insulation plug ø 23/21 mm made of polystyrene.

| TENSION LOAD N_{RK} FOR EACH SINGLE ANCHOR ACCORDING TO ETA-15/0305 | | | | | |
|---|---|-----------------|-----------------|---------------|----------------------------|
| Category | Base material* | Drill method | h_{ef} (mm)** | N_{RK} (kN) | Tension load N_{rd} (kN) |
| A | Concrete C12/15 | Hammer drilling | 30 | 1,50 | 0,50 |
| A | Concrete, C16/20 - C50/60 | | | 1,50 | 0,50 |
| B | Sand-lime solid brick, KS | | | 1,50 | 0,50 |
| B | Clay bricks, Mz | | | 1,50 | 0,50 |
| B | Lightweight concrete block, Vbl 2 | | | 0,75 | 0,25 |
| B | Lightweight concrete block, Vbl 4 | | | 1,20 | 0,40 |
| C | Vertically perforated clay brick, Hlz | Rotary drilling | | 0,90 | 0,30 |
| C | Vertically perforated sand-lime bricks, KSL | | | 1,50 | 0,50 |
| C | Lightweight concrete hollow block, 4K Hbl | | | 0,75 | 0,25 |
| C | Lightweight concrete hollow block, 1K Hbl | | | 0,90 | 0,30 |
| C | Vertically perforated clay brick, Hlz | | | 0,50 | 0,167 |
| D | Lightweight aggregate concrete LAC 4 | Hammer drilling | | 0,40 | 0,10 |
| D | Lightweight aggregate concrete LAC 6 | | 0,50 | 0,167 | |
| E | Autoclaved aerated concrete, PP4-05 | Rotary drilling | 0,30 | 0,10 | |
| D | Lightweight aggregate concrete LAC 4 | Hammer drilling | 50 | 0,90 | 0,30 |
| D | Lightweight aggregate concrete LAC 6 | | | 1,20 | 0,40 |
| E | Autoclaved aerated concrete, PP4-05 | Rotary drilling | | 0,75 | 0,25 |

* Minimum compressive strength [N/mm²] and bulk density class [kg/dm³]

** h_{ef} [mm] = effective anchorage depth in the load-bearing substrate without t_{tol}

t_{tol} = thickness of equalizing layer and/or non-load-bearing layer

N_{RK} in [kN] = Characteristic resistance to tension loads according to ETA-15/0305

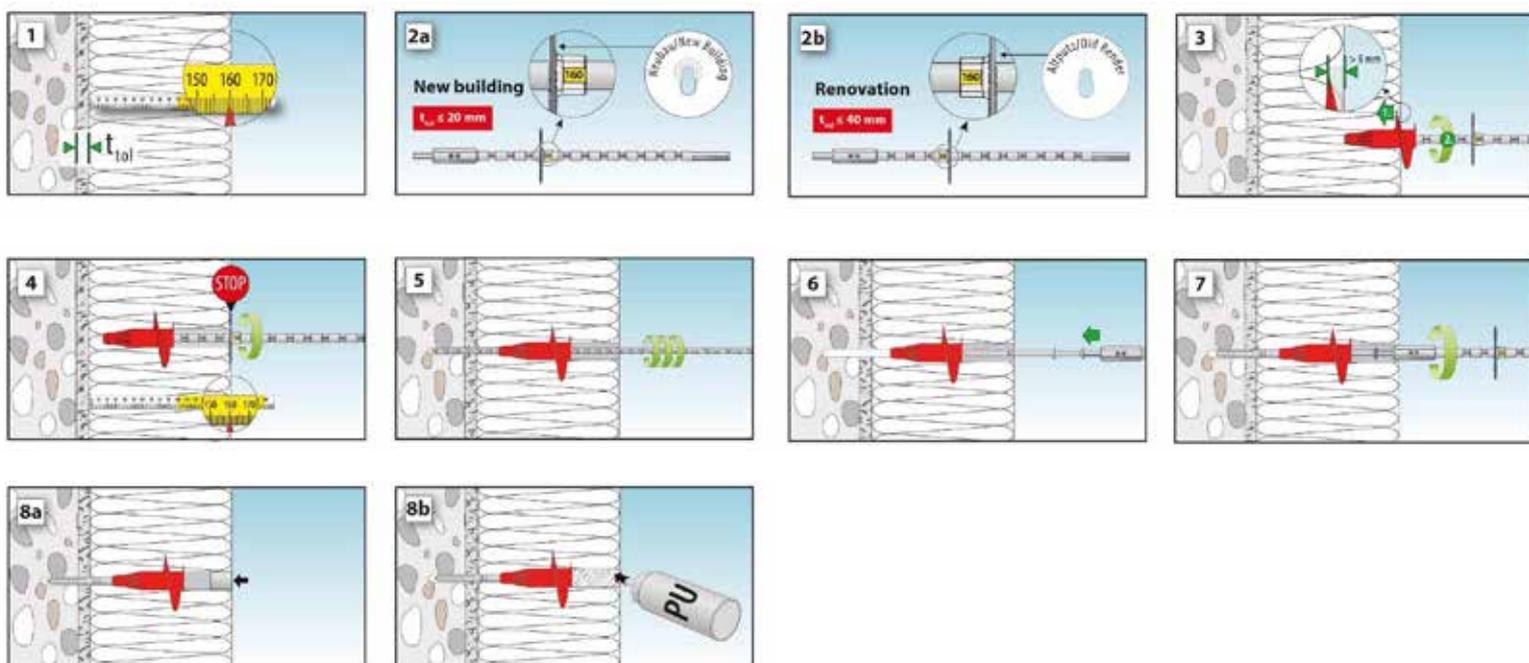
$N_{rd} = N_{RK} / (\gamma_M * \gamma_F)$

γ_M = material safety factor for the anchor base according to ETAG 014 ($\gamma_M = 2.0$)

γ_F = safety factor for the impact (wind loads $\gamma_F = 1.5$)

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| | |
|-------------------------------|--|
| Setting temperature | da 0° C a +40°C |
| TStorage temperature | da 0° C a +24°C (maximum long-term temperature) |
| UV exposure | ≤ 6 weeks for rendered façade |
| Setting tool with stop washer | Setting tool for screwing the sprial into the insulation panel and for screwing the screw dowel into the substrate. |
| MInimum drill hole depth | Insulation thickness + 60 mm for stop washer 'New Building / New Building' Insulation thickness + 80 mm for stop washer 'Old Render / Old Render' |
| Cordless screwdriver | For assembly, use an 18V or 22V cordless screwdriver. When screwing the spiral into the insulation material, set the maximum torque (drilling) and maximum speed (stage 2 or 3). When screwing the dowel screw into hollow and perforated blocks, gradually reduce the tightening torque until the slip clutch is activated. |
| Hammer drills | Drill hole diameter: \varnothing 8 mm Cutting diameter of drills: 8.45 mm Drill holes through the sprial perpendicular to the surface of the insulation into the substrate. |
| Drilling method | Drill the drill holes in hollow and perforated blocks as well as in aerated concrete only without turning the drill (without drilling). If the load-bearing behaviour of the screw-on dowels is assessed on-site by pull-out tests, the hammer or hammer drilling method may also be used for perforated blocks and aerated concrete. |



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Minimum number of anchors/m2 depending on wind load we according to national technical approval Z-21.2-2052

EPS e PUR boards with ≥ 100 kPa (see national technical approval z-21.2-2052)

| Cat. | h_{ef}^{**} (mm) | Tension load [kN] | Wind load w_e up to kN/m ² | | | | |
|-------|--------------------|-------------------|---|-------|-------|------|-------|
| | | | -0,80 | -1,20 | -1,50 | 1,80 | -2,10 |
| A,B,C | 30 | $\geq 0,20$ | 4 | 6 | 8 | 10 | 12 |
| D | 30 | $\geq 0,167$ | 6 | 8 | 10 | 12 | 12 |
| E | 30 | $\geq 0,10$ | 8 | 12 | - | - | - |
| E | 50 | $\geq 0,20$ | 4 | 6 | 8 | 10 | 12 |

Phenolic resin rigid foam boards with ≥ 60 kPa (see national technical approval z-21.2-2052)

| Cat. | h_{ef}^{**} (mm) | Tension load | Wind load w_e up to a kN/m ² | | | | |
|-------|--------------------|--------------|---|-------|-------|------|-------|
| | | | -0,70 | -1,10 | -1,40 | 1,70 | -1,90 |
| A,B,C | 30 | $\geq 0,20$ | 4 | 6 | 8 | 10 | 12 |
| D | 30 | $\geq 0,167$ | 4 | 6 | 8 | 10 | 12 |
| D,E | 30 | $\geq 0,20$ | 4 | 6 | 8 | 10 | 12 |

Mineral fibre boards with ≥ 5 kPa (approval in preparation)

| Cat. | h_{ef}^{**} (mm) | Tension load | Wind load w_e up to a kN/m ² | | | | |
|---------|--------------------|--------------|---|-------|-------|------|-------|
| | | | -0,48 | -0,72 | -0,96 | 1,20 | -1,44 |
| A,B,C,D | 30 | $\geq 0,12$ | 4 | 6 | 8 | 10 | 12 |
| D,E | 50 | $\geq 0,12$ | | | | | |

** h_{ef} (mm) = effective anchorage depth in the load-bearing substrate without t_{ol}

T_{ol} = thickness of equalizing layer and/or non-load-bearing layer (adhesive and old render)

| Number of dowels per m ² | Dowel arrangement | Number of dowels per m ² | Dowel arrangement |
|-------------------------------------|-------------------|---|-------------------|
| 4 | | 10 | |
| 6 | | 12 | |
| 8 | | <p>Plate size: 100 x 50 cm Minimum edge distance: ≥ 10 cm</p> <p>Before using the SGR-UNI anchor, the insulation panel type must be tested for its basic suitability for this dowel type. The surface of the insulating material may only be damaged to a small extent when the spiral is being screwed in.</p> | |

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Nominal values of the point thermal transmittance ϵ according to EOTA Technical report TR 025

Point thermal transmittance χ [W/K]

Thickness of insulating layer
 $100 \leq h < 150$ mm

0.001

Thickness of insulating layer
 $150 \leq h \leq 460$ mm

0

Nominal values of the point thermal transmittance ϵ according to EOTA Technical report TR 025

Point thermal transmittance χ [W/K]

Thickness of insulating layer
 $100 \leq h \leq 460$ mm

0

5. TECHNICAL SPECIFICATION

| Specification | Description | Unity | Price |
|-------------------------|--|-------|-------|
| Dak.B.TER11.34xx | Supply and installation of anchor with 67 mm helical body with integrated expansion body \varnothing 8 mm and fixing screw (torx 30). Used for mechanical anchoring of insulating panels (although minerals, EPS, phenolic resin) and for the main types of masonry, supporting the load and stress of traction "to tear". Material: - The anchor is made of PA (polyamide) - Expansion body in PP and fixing screw in galvanized steel - The regulation bar is made of galvanized steel - The finishing plug in EPS (polystyrene) | - | - |
| Dak.B.TER11.3400 | Universal helicoidal anchor | pc. | - |
| Dak.B.TER11.3401 | Regulation bar | pc. | - |
| Dak.B.TER11.3402 | Finishing plug..... | pc. | - |