

## CONSTRUCTION HAMMERED-IN DOWEL «THERMOSAVE»

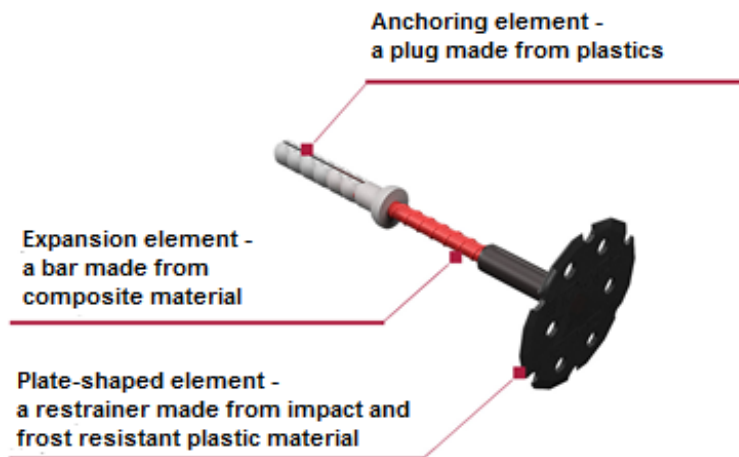
### APPLICATION

Dowel «THERMOSAVE» is designed to fix thermal insulation layer to a concrete or brick base material during installation of various facade systems, including systems with rendering.

### STRUCTURE

Dowel «THERMOSAVE» consists of the following elements:

- anchoring element – a plug made from plastics;
- expansion element – a bar made from composite material;
- plate-shaped element – a restrainer made from impact and frost resistant plastic material.



### MARKING

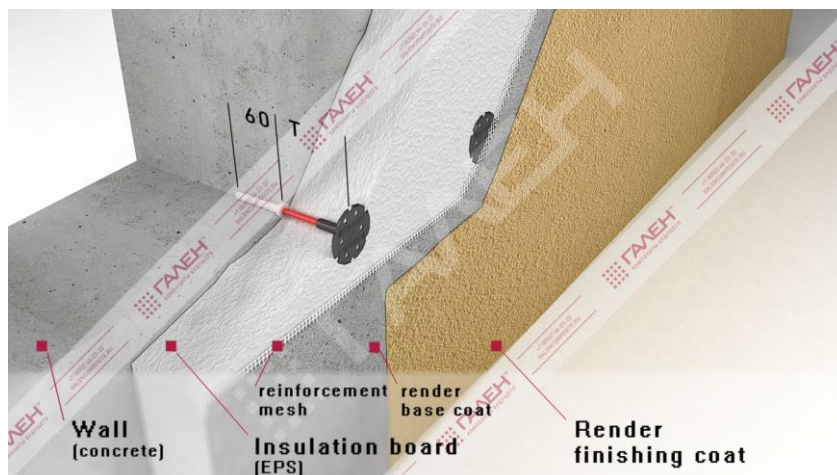
SDM 100-6-60, where:

- **SDM** – construction dowel for thermal insulation systems with rendering;
- **100** – dowel length, mm;
- **6** – bar diameter, mm;
- **60** – anchor length, mm.

### SELECTION OF DOWEL LENGTH

Dowel length, mm:  $L = 60 + T$ , where:

- **T** – thickness of insulation layer, mm;
- **60** – minimal anchorage depth in a base material, mm.



**TECHNICAL CHARACTERISTICS**

Dowel length	from 100 to 260 mm
Bar length tolerance	±2 mm
Bar diameter	6 mm
Anchoring part length	60 mm
Plate diameter	60 mm
Tensile strength, not less than	1000 MPa
Bending strength, not less than	1000 MPa
Ultimate bond strength, not less than:	
▪ Concrete B25	0.16 kN
▪ Brick	0.14 kN
▪ Aerated concrete	0.10 kN

**CHEMICAL ANCHORING**

Dowel «**THERMOSAVE**» can also be used with chemical anchors such as SORMAT ITH or Gravit GHA-P.



**TEST TABLE 1.**

Base material: slotted brick.

Temperature of base material: 19 °C.

Chemical anchor: SORMAT ITH 380 P.

Nº	Anchoring element	Hole depth, mm	Anchorage depth, mm	Ultimate bond strength, kN
1	ITH 380 P + THERMOSAVE (Ø6 mm, L=400)	320	320	8,07
2	ITH 380 P + THERMOSAVE (Ø6 mm, L=400)	320	320	11,15
3	ITH 380 P + THERMOSAVE (Ø6 mm, L=400)	320	320	10,18
4	ITH 380 P + THERMOSAVE (Ø6 mm, L=400)	320	320	9,56
5	ITH 380 P + THERMOSAVE (Ø6 mm, L=400)	320	320	10,05
6	ITH 380 P + THERMOSAVE (Ø6 mm, L=400)	320	320	9,47
7	ITH 380 P + THERMOSAVE (Ø6 mm, L=400)	320	320	10,43
8	ITH 380 P + THERMOSAVE (Ø6 mm, L=400)	320	320	11,02
9	ITH 380 P + THERMOSAVE (Ø6 mm, L=400)	320	320	9,88
10	ITH 380 P + THERMOSAVE (Ø6 mm, L=400)	320	320	10,11
<b>Average ultimate bond strength</b>				<b>9,99</b>

**TEST TABLE 2.**

Base material: reinforced concrete.

Temperature of base material: 27 °C.

Chemical anchor: GRAVIT GHA-P 410.

Nº	Anchoring element	Hole depth, mm	Anchorage depth, mm	Ultimate bond strength, kN
1	GHA P 410 + THERMOSAVE (Ø6 mm, L=220)	100	100	11,08
2	GHA P 410 + THERMOSAVE (Ø6 mm, L=220)	100	100	9,50
3	GHA P 410 + THERMOSAVE (Ø6 mm, L=220)	100	100	8,73
4	GHA P 410 + THERMOSAVE (Ø6 mm, L=220)	100	100	9,92
5	GHA P 410 + THERMOSAVE (Ø6 mm, L=220)	100	100	10,22
6	GHA P 410 + THERMOSAVE (Ø6 mm, L=220)	100	100	9,31
7	GHA P 410 + THERMOSAVE (Ø6 mm, L=220)	100	100	9,67
8	GHA P 410 + THERMOSAVE (Ø6 mm, L=220)	100	100	10,14
9	GHA P 410 + THERMOSAVE (Ø6 mm, L=220)	100	100	9,47
10	GHA P 410 + THERMOSAVE (Ø6 mm, L=220)	100	100	8,21
<b>Average ultimate bond strength</b>				<b>9,63</b>

**REGULATORY DOCUMENTATION**

Technical specifications TU 2296-024-13101102-2014.

Certificate of conformity of TU 2296-024-13101102-2014 to GOST P certification system.

**ADVANTAGES**

- STRENGTH of the composite material improves reliability of the entire structure;
- Due to LOW THERMAL CONDUCTIVITY of the composite material, the dowel does not create a “thermal bridge” between a wall and external environment, maintains humidity conditions of the structure;
- FROST RESISTANCE of the plastic plate of the dowel allows for installation at low temperatures;
- RIGIDITY AND IMPACT RESISTANCE of the plastic plate reduces the risk of the “inside-out umbrella” effect and damage of external thermal insulation system; less damaged dowels;
- CONSISTENT HIGH PULL OUT STRENGTH from various base materials;
- CORROSION AND CHEMICAL RESISTANCE of the composite material eliminates the possibility of rusty stains on walls, allows the dowel to retain its physical and mechanical properties in alkali and thermal and moisture conditions.

**ABOUT**

Galen is a Russian manufacturer of modern composite materials for the civil and industrial construction, electric utility industry and road industry. The company is a developer and pioneer of basalt technologies in Russia and Europe, the leader in the Russian market for composite construction materials.



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