

THERMAL INSULATING PLASTER **CLIMATE SYSTEM 450**

- ✓ Ecological
- ✓ Thermal insulating
- ✓ Soundproof
- ✓ Hydrophobic
- ✓ Frost-resistnat
- ✓ White
- ✓ Incombustible
- ✓ Wapor permeable
- ✓ Does not require reinforcement

Technical description

Scope of application: Climate System® 450 is a lightweight insulating plaster for silicate and hollow ceramic bases. Designed for visual thin-layer plastering of facades, interiors, slopes, balconies, basements and cellars. The recommended thickness of the layer is 5-7 mm, has a finished look "curly/ lambskin". Does not require reinforcement. Provides heat, hydro and acoustic insulation walling.

Composition: Mineral binding (cement, lime), light mineral aggregates, polymer modifying additives.

Technical characteristics	
Consistency of the fresh mixture, mm	130±4
The amount of water for dry mix	5,8 – 6,4 l per 10 kg bag
Density of fresh mortar, kg/m ³	720±20
Air content in fresh solution, %	19±2,2
Time of use of the dissolved mixture, min	400
Density of the solution in the dry state, kg/m ³	520
Ultimate strength the solution on the tensile bending, N/mm ²	2,0±0,14
Compression strength, N/mm ²	4,6±0,2
The strength of adhesion of the solution with the base (concrete) in air- dry conditions, N/mm ²	0,8±0,4 FP:B
Coefficient of water absorption of the solution, kg/(m ² ·min 0,5)	0,10±0,05
Permeability of the solution, μ	16,2±1,5
The thermal conductivity of the solution in dry state W/(m·K)	0,12
Class of thermal conductivity	A1
Frost resistance of the solution	Frost resistant

Application instruction

Preparation of foundation

Clean the foundation from old paint, dirt, dust and fragile fragments, if necessary wash and clean the concrete from residues of mold release. Remove the joggles; protect the metal elements against corrosion. It is recommended to roughen the smooth concrete foundations mechanically or using the contact priming. Apply the priming of deep penetration to the plaster foundations in advance.

Note: When applying Insulation mortar Climate System® 450, façade reinforcing is not required. It is recommended only to reinforce sections of the facade, which are additionally protected by extruded polystyrene, foam plastic, wood (including OSB, QSB and plywood), wool and similar materials. Easy-erected construction of "Canadian house" using OSB, besides reinforcing, is recommended process with the contact primer.

General recommendations for application

The works shall be carried out at temperature of foundation from +5°C up to +30°C. All recommendations, provided in this Technical Description, are efficient at temperature of +20°C and atmospheric moisture capacity 60%. The workability time for mortar mixture can change under other conditions.

Important! During summer period do not perform the works at direct sunlight to the mortar mixture and foundation! Also avoid the direct effect of atmospheric precipitations on the mortar mixture.

Note: Thermal insulating plaster mix Climate System® 450 contains cement and lime, which can cause to the alkaline reaction while interacting with the water, thus, while working it is necessary to take care of the eyes and skin. If the mortar mixture hits the eyes, immediately wash them out and consult with doctor.

Fulfillment of works

Thermal insulating thin-layer plaster mix Climate System® 450 may be applied manually and using the plastering machines of M-Tech Duo - Mix, PFT type or analogous ones. When masonry of the walls is perfectly smooth the mixture can be applied in a thin layer of 5-7 mm without beacons. When the thickness of the layer is bigger it is recommended to use plaster beacons or string.

Manual mode

Preparation of mortar mixture

Pour the clean water 5,8-6,4 l per bag (10 kg) into the large reservoir with flat bottom (with capacity of 40 l – at batch of 1 bag of dry mixture and 60 l – at batch of 2 bags of dry mixture). Add the thermal insulating plaster mix Climate System® 450 to the water.

IMPORTANT! In order to provide uniformity of mortar mixture while batching it is necessary to apply the full content of the bag. The partial application of the bag's content is not allowed.

Thoroughly stir the mortar mixture using manual high speed (not less 600 rpm) construction mixer until uniform consistence without lumps and clots during 4-5 minutes. It is recommended to apply the mixer with 2 nozzles. Sustain the mortar during 5 minutes and again stir thoroughly. The indication for correct prepared mortar mixture is its uniform thickness without flakes and its ability to be kept on overturned metal putty knife.

Installation of screeds

Apply the mortar mixture by modeling to the surface of the foundation within the interval of approximately 30 cm; press the screed profiles into it, aligning them in the plane. The profile pitch shall be 20 cm less the length of the rod.

Plaster application

Wall surface must be pre-process with primer of high penetration.

With screeds

Using the putty knife and stainless smoothing board, apply the mortar mixture to the wall between the screeds with thin layer. In 3-5 minutes apply the basic layer of plaster along the screeds. Remove the excessive mortar mixture using the rod. After 4-8 hours (depending on the ambient temperature) carefully pull out the screeds. At air temperature of below +15°C the drying time of the basic layer is increased up to 12-14 hours. Fill in the places, where the screeds were located, with the mortar of thermal insulating thin-layer plaster mix Climate System® 450 and smooth down using the metal smoothing board.

Without screeds

In thin-layer application without beacons plaster layer should be aligned with a plane and in 20-30 minutes after application - wipe the plaster using a plastic float. Plaster should be rubbed in circular motion, creating a uniform surface structure.

For more economical use of the material it is recommended to put the clean polyethylene film at the foundation of the wall, and the mortar, which has fallen from the tool, can be used during 10-15 minutes, having previously been stirred with the rest of the mortar mixture. Hereby avoid penetrating of the rubbish into the mortar mixture.

Mechanical mode

Preparation for the work

The works on mechanical plastering are as a rule held by the plasterers' team. Prepare the plastering machine for operation according to the "Operation manual".

***Attention!** Plaster stations must be dual mixing. Auger pair must be at fraction of 2-3mm (D3).*

Preparation of mortar mixture

Pour the thermal insulating thin-layer plaster mix Climate System® 450 into the bin of the machine. Set up the water consumption according to required consistence of the mortar. The recommended mark for water consumption is about 350 l/h (depending on type of the machine, being used). The exact selection of water consumption depends on the material of the wall and ambient temperature.

Plaster application

- Wall surface must be pre-process with primer of high penetration. Until applying the mortar mixture soak the wall in the sufficient amount of water.
- Apply the mortar mixture to the surface, taking into consideration the following rules:
- Keep the mortar gun perpendicularly to the working surface, being treated, at the distance of about 30 cm (up to the nozzle).
- Adjust the thickness of the layer by the traverse speed of the gun (the slower movement, the thicker plaster layer and vice versa).

- Plaster the walls FROM LEFT TO RIGHT and DOWNRIGHT (starting from the left top corner), forming the bays of about 70 cm wide. Hereby take the gun in such way that at reciprocating motion the center of plaster base is at the bottom edge of the mortar, being applied.
- Make each further bay, covering the previous one within 5-10 cm from the left side.
- Apply the mortar to the surface of the ceiling, starting from the side opposite to the windows. Smooth down the plaster layer, being applied, using the rod along the screeds.

It is not recommended to apply the plaster layer by 5-6 mm more than the level of the screeds – it will result in rolling the mixture while it is smoothed by the rod.

After the mortar is applied to the whole surface, close the air valve at the mortar gun (the mortar will not be supplied).

ATTENTION! *The mortar in the hoses and mixers shall not stay at rest for more than 15 minutes.*

If the works are held without installing the screeds, check the deviation of the surface across and down using the level tube, cord or smoothing board. If necessary, apply the additional layer of the mortar where it is necessary.

ATTENTION! *The additional layer can be applied if not more than 30 minutes passed since application of the previous layer; otherwise the second layer shall be applied after stiffening of the first one.*

Wash the equipment and the tools with water immediately after operation. The contaminated reservoirs and tools worsen the quality of the plaster. Wash out the mortar mixing pump with water.

Final finishing

In order to make the uniform texture of plastered surface after 1-2 days (depending on ambient temperature), apply and the finish layer of 2-5 mm thick. It is recommended to apply the finish mortar in manual mode.

In order to make the smooth surface as the finish layer it is recommended to use the thermal insulating finishing plaster mix Climate System 550.

Attention! *Before preparation of finish mortar the reservoir and metal smoothing boards shall thoroughly be cleaned.*

It is recommended to apply penetrating priming to the surface after 48 hours. In a day after this, the surface can be painted with water-dispersion silicone or silicate based façade paints.

Warranties of manufacturer

The manufacturer guarantees the conformity of the thermal insulating thin-layer plaster mix Climate System® 450 to the characteristics, provided in this Technical Description while the implementation of the rules for its transportation, storage, preparation and application. The manufacturer is not responsible for improper use of the mixture, as well as for its application with other purposes and under other conditions, not anticipated by this Technical Description.

The warranty storage period of the thermal insulating thin-layer plaster mix Climate System® 450 in original factory packaging under dry conditions is 12 months.