Product Properties
Sheet Version: D' - 01/04/2013

THC 405 BASIC COAT AND ADHESIVE FOR THERMAL INSULATING PLATES

ACCORDING TO EN13499 & ETAG 004

DESCRIPTION

The THC 405 product is a cement basis mortar, one-component modified with polymer additives. It is a specialized product recommended for bonding and plastering of thermal insulating plates like expanded polystyrene (EPS), extruded polystyrene (XPS) and rock wool, in outdoor thermal insulation systems for buildings. It consists of cement, quartz sand, limestone fillers and special additives. THC 405 presents a very strong attachment on all the usual substrates, high elasticity, resistance to frost and humidity. It is suitable to use both indoors and outdoors. It meets EN 13499 and ETAG 004 European standards.

FIELDS OF APPLICATION

It is appropriate for both interior and exterior applications

THC 405 is used as an adhesive as well as a basic layer plaster for thermal insulating plates for the outdoor thermal facade system (ETICS) of THRAKON
For strong bonding of:

- extruded polystyrene (XPS)
- expanded polystyrene (EPS)
- hard glass wool
- cork

On substrates of:

- concrete
- lightweight concrete
- bricks
- cement blocks
- aerated concrete (YTONG)
- self-levelling floors
- mortars
- level masonry with filled joints

The THC 405 adhesive can be used in combination with glass fiber mesh in order to cover the connections between different types of masonry (aerated concrete with concrete, bricks with aerated concrete, etc.), to cover the conduits on the masonry made by electricians and plumbers, to reinforce the edges of openings (in doors windows) in order to avoid future cracking a.o.

ADVANTAGES - CHARACTERISTICS

- It is produced with quartz sand
- A single material for attachment and plastering of thermal insulating plates
- Suitable for the local reinforcement of surfaces that develop high cracking tensions during plastering
- Strong resistance to elastic deformation
- Strong adhesion
- Strong resistance – Rapid application
- Resistance to humidity and frost
- Excellent workability
- It complies with EN 13499 and ETAG 004 European standards.

SUBSTRATE PREPARATION

The application substrate must be even, free from frail and foreign parts like e.g. residues of mud, plaster, color, oils, etc. and without any large cracks. Additionally the substrate must be stable and free from shrinkage and deformation tensions and it must not receive vibrations.

APPLICATION

In a clean container we add 6.0 litres of clean water and we gradually empty the content of a 25 Kg bag of the THC 405 product while mixing continuously with an electrical agitator, in order to produce a homogenous mortar mass. Allowthe produced mixture to mature for 5 minutes and we agitate it again for a little. The mixture is ready to use within the next 4 hours. After the preparation of the mixture do not add additional water to correct the workability of the mortar. This shall lead to a decrease of its resistances and to an increase of its shrinkage.

Application as adhesive

Application on level surfaces:
THC 405 is spread on the thermal insulating plate using the even side of the spatula and the adhesive layer is then combed uniformingly with its toothed side.
Application on uneven surfaces:
THC 405 is spread with a trowel around the perimeter of the thermal insulating plate and on the center point. We press the thermal insulating plate firmly on the wall in order to ensure the uniform contact of the adhesive. The final surface must be completely leveled.

The open time is 15 minutes after the adhesive is applied.
Any surplus adhesive must be removed from the joints.
If the adhesive dries before the thermal insulating plate is applied, remove it and apply a fresh layer.

Application as coating

After the adhesive has dried, we add the mechanical supports (plastic or metallic plugs) wherever it is necessary. We putty the plug holes, the plates' joints and we install the corner beads and parts of the mesh in order to reinforce the edges of the openings. Then, we spread a uniform 2-4mm thick layer of the THC 405 mortar on the thermal insulating plates using the "American type spatula", and we immediately install the glass fiber mesh, in a way that it covers the plates connections and overlaps the previous mesh by 10-15cm. We press it using the spatula in order to integrate it in the adhesive layer and using the spatula, we addanother thin layer of mortar 0.5-4mm, in a way that it completely covers the mesh and provides an even surface. During the application and also during the next 24 hours the ambient temperature and the substrate temperature must be between +5 ºC and 35 ºC. The adhesive can be cleaned with water while it is still moist. After it hardens, it is removed mechanically. After the mortar dries completely, we apply the final decorative plaster using one of the decorative coats of THRAKON.

CONSUMPTION

The consumption of THC 405 is approximately 3,5 – 4,0 kg/m^2 for application as an adhesive and 3,5 – 4,0 kg/ m^2 for application as a coat. It depends on the type of thermal insulating plates, the tools and the method of application.

PACKAGING - STORAGE

The product is packaged in 25Kg valve paper bags and is stored on wooden palettes and in a dry environment with temperature above 0ºC for 12 months from the production date.

NOT RECOMMENDED

When there is a frost forecast for the 24 hours following the application of the product. Under wet conditions (like rain). On masonries directly exposed to intense solar radiation or on warm substrates.

CLEANSING OF TOOLS AND MACHINES

With plenty of water immediately after use.

PRECAUTIONS

TCH 405 contains cement and reacts with water producing an alkaline solution. For this reason protect your eyes and skin. In case of contact rinse with plenty of water. In case of contact with the eyes seek medical advice immediately.

Read the information on the label and in the Technical Leaflet of the product before use. Wear appropriate protective clothing and gloves. The product's Safety Sheet is available to professionals upon request.

ACCORDING TO EUROPEAN STANDARDS EN 13499 & ETAG 004

TECHNICAL CHARACTERISTICS		UNITS	STANDARD	VALUE
Appearance				Dry powder
Color				Grey/white
Application thickness		(mm)		10
Temperature resistance		(ºC)		-30 to +90
Maximum grain size		(mm)		0,5
Maturing time		(min)		5
Workable time		(h)	EN 1015-9	1,5
Correction time		(min)	EN 1015-9	>15
Open time		(min)	EN 1015-9	15
Compressive strength		(N/mm^2)	EN 13494	>0,08
Resistance to the detachment of the adhesive from the EPS plate		(N/mm^2)	EN 13494	>0,08
Resistance to the detachment of the adhesive from the EPS plate (attached with adhesive only)		(N/mm^2)	EN 13494	>0,25
Resistance to the detachment of the adhesive from the substrate (attached with adhesive only)		(N/mm^2)	EN 1542	>20
Water vapor permeability of the base coat plaster		(g/ m^2d)	EN 7783-2	<0,5
Liquid-water transmission rate of the base coat plaster		($kg/ m^2*min^{0,5}$)	EN 1062-3	0,5
Resistance to impact		(2J)	EN 13497	I2
		(10J)		I10
Resistance to perforation		(>200N)	EN 13498	PE200
		(>500N)		PE500
Hydrothermal behavior		bubbles	EN 13961-2 EN 13961-4 EN 13961-5	None
		quantity of cracks		Category – 3
		size of cracks		Category – 2
		quantity of flakes		Category – 3
		size of flakes		Category – 2
Behavior in frost-heat cycles				Optimum
Ready to use	(as an adhesive)	(h)		15-20
	(as a base coat plaster)	(days)		5-7
Consumption		(Kg/ m^2)		3,5-4,0
Water demand		(ml water / 100g of dry mortar)		24-28

Note: *The measurements were taken in laboratory environment under a temperature of +23^{0}C, Relative humidity 50 % and without ventilation. It is possible for them to vary depending on the conditions prevailing at the worksite, such as temperature, humidity, ventilation, absorbability of the substrate.*