BRONYA
SUPERFINE HEAT INSULATION

PROEAST

BRONYA ANTIKOR and ANTIKOR INCOMBUSTIBLE

Ultrathin thermal insulation Bronya Antikor is a special composition with increased adhesive and anticorrosive characteristics, resistant to UV radiation and chemicals (solutions of salts, acids, alkalis, some types of petroleum products). The coating increases the service life of the insulated surface and protects against corrosion. Ultrathin liquid thermal insulator Bronya Antikor is used for thermal insulation of building metal structures, metal products, pipelines, industrial equipment for various purposes, operated in conditions of high humidity or exposed to aggressive environments. Operating temperature from - 60 °C to + 150 °C.

The use of Bronya Antikor heat insulator for the thermal insulation of existing structures and pipelines significantly reduces labor costs, since it does not require special preparation of the working surface. Bronya Antikor insulation can be applied as the first layer, and for subsequent layers (in order to save money), "classic" Armor insulation can be used.

THE USE OF BRONYA ANTIKOR COATING ALLOWS:

- reduce or completely eliminate the formation of condensate on cold water pipes and air ducts; isolate equipment without stopping technological processes
- reduce repair costs in case of emergency situations by reducing the time of leak detection and dismantling of old insulation; prevent temperature deformations of metal surfaces;
- is the basis for applying other modifications.

For example, the estimated thickness of ultrathin thermal insulation on a ferrous metal tank is 2.5 mm. Materials from competing manufacturers (mainly American and Canadian), as well as our "Bronya Classic" material, must be applied at least 6 layers (1st layer primer + 5 layers of 0.5 mm with interlayer drying 24 hours. Our solution is just three layers:

- 1st layer 0.5 mm Bronya Antikor (Not only corrosion fixation, but also converter, adhesive and waterproofing (Due to the high film formation rate).
- 2nd layer, after 24 hours - 1 mm Bronya Facade
- 3rd layer, after 24 hours - 1 mm Bronya Facade

Modification Bronya Antikor Incombustible, identical in form of release and packaging, with a low-burning (basic) modification.

TABLE OF CHARACTERISTICS OF BRONYA ANTIKOR

THE NAME OF THE INDICATOR	UNIT OF MEASUREMENT	VALUE
Appearance of the coating	Smooth, homogeneous, matte film of gray (beige) color	
Resistance of the coating to the effects of temperature differences from -40 °C to +60 °C	appearance of the coating	without changes
Durability for concrete and metal surfaces in a moderately cold climatic region (Moscow)	years	at least 15
Coefficient of thermal conductivity of the material	W/m °C	0,0012
The coefficient of vapor permeability of the material	mg/m h Pa	0,003
Surface temperature when applying the material	°C	from +7 to +150
Operating temperature	°C	from -60 to +150
The density of the material at a temperature of 20 °C, kg/m3	kg/m3	600±10%
Mass fraction of volatile substances, no more than	%	43
The hydrogen index of the material	pH	7,5-11,0
Drying time and film formation at a temperature of (20±2) °C, not less than	h	24
Adhesion of the coating by the separation force, not less than • to concrete and brick surfaces • to steel	MPa	 1,3 2,2
Resistance of the coating to static effects at a temperature of (20±2) °C, not less than: • Water • 5% NaOH solution	 appearance of the coating	 without changes without changes

MANUAL

BRONYA ANTIKOR is specially made to cover poorly prepared metal surfaces: surfaces cleaned of rust by hand; for application to a poorly degreased surface. BRONYA ANTIKOR fits well on all types of surfaces: metals, plastics, etc. Insulation work can be carried out **on surfaces with temperatures from +7 ° C to +150 ° C**. The operating temperature of BRONYA ANTIKOR modification ranges **from -60 ° C to +150 ° C.**

When working with the liquid thermal insulation coating BRONYA ANTIKOR, special attention should be paid to the following conditions:

- The thermal insulation of the armor can not be frozen.
- When preparing the material, do not mix excessively (see paragraph 2 of this instruction)
- Before opening the container, it is necessary to verify the integrity of the seals.
- When preparing the material, it should not be excessively diluted with water (see paragraph 2 of this instruction)

1.Surface preparation

The insulated surface must be **cleaned of dirt**, "plate" rust, dust, old paint, etc. To clean the metal surface from rust, use metal brushes or abrasive wheels with the removal of a loose layer of rust. The finished surface must not contain crumbling elements, **must be dry** (including not condense), **must not contain oily and greasy elements**, must not be excessively plastic and glossy. If there are oily and greasy spots on the surface, they must be removed with a solvent. Areas with a glossy surface **must be treated to a matte state.**

2.Preparation of the insulation coating BRONYA ANTIKOR

BRONYA ANTIKOR is ready for use, it must be mixed, if necessary, by adding a little distilled water, immediately before applying to a pre-prepared surface. The amount of water depends on the temperature of the application base, the temperature and humidity of the surrounding air, subsequent operation and other factors. When applied to a surface with **a temperature from +7 °C to +80 °C,** the amount of water added to the material can be no more than **5% when applied with a brush and no more than 3% when applied with equipment** (airless spray apparatus). When applied to a surface with **a temperature above +80 °C,** it is necessary to first bring down the temperature by applying several primer layers of Bronya material diluted with 20-50% distilled water according to the scheme specified in paragraph 3 "Coating". For detailed recommendations, contact the nearest representative office or the manufacturer*. With a long shelf life inside the container, stratification into fractions is allowed. When using a drill with a bladed nozzle or a mixer (check with a representative of Bronya in your region for recommendations on the choice of equipment) - **the maximum permissible mixing speed is 150 rpm**. Exceeding the rotation speed will lead to the destruction of the microsphere and a radical decrease (or cancellation) of the effectiveness of the thermal insulation coating. Using vertical movements of the blade so as to immerse the thickened part in the liquid, turn on the drill and slowly start rotating the blade, mixing the clots with the liquid. Stir until the product becomes a homogeneous thick mass. The **approximate mixing time is 3-8 minutes** with a mixer, **manual mixing is 7-10 minutes**. If the task is to eliminate condensation, "fur coats" of frost - the material is applied with minimal addition of water, and the maximum period of interlayer drying.

3.Coating application

It is recommended to work with a soft brush with long natural bristles or an airless sprayer (check the recommended brands and models of airless sprayers, as well as recommendations for setting them up with a representative in your region). You can apply the coating on small surfaces or areas with a complex configuration using a soft brush. Surfaces with an area **of 100 m2** or more can be treated with an airless sprayer with a working pressure of **no more than 60-80 bar (IMPORTANT!!! Not all airless sprayers are suitable for working with Armor coating!!!)**. For recommendations on the selection, configuration and operation of airless sprayers, check with the manufacturer or the nearest representative of Bronya. Also see additional technical card for working with airless sprayers). An insulating coating can be applied to a surface with **a temperature from +7 °C to +150 °C with and relative humidity not higher than 80%**. For better adhesion of the material to the treated surface, it is recommended to apply a primer layer on the prepared surface with a liquid (like milk) composition of the material diluted **with 20-50% distilled water**. The period of complete drying of one layer of the coating with a thickness of **0.4-0.5 mm is at least 24 hours** at ambient **temperature above +7 °C and humidity not higher than 80% throughout the drying time, i.e. within 24 hours**. The next layer can be applied only after the previous layer has completely dried - after 24 hours under the specified conditions. A layer of the order of **0.4-0.5 mm (optical density thickness) is obtained with three "passes" of the sprayer, brush**. Applying the material with a thicker layer is unacceptable, as this leads to the formation of a moisture-proof film on its surface, which in turn prevents the complete evaporation of moisture, which will lead to the cancellation of the thermal properties and deformation of the coating. When applying the material to a surface with **a temperature above +80 °C, the material boils and "seizes" very quickly**, so the material must be diluted with water. It is recommended to pre-prime the surface with a 20-50% aqueous solution of the material. important! When applying BRONYA ANTIKOR on a surface with **a temperature above +80 °C**, the thickness of the maximum layer in 24 hours should not exceed 0.5 mm. The hotter the application surface, the more the material is diluted. The diluted material is applied with quick short movements, with such application the layer will be very thin. The drying time of each such layer is at least 1 hour. Such layers are applied until the applied material ceases to boil on the surface, but not thicker than 0.5 mm. After that, let it dry for 24 hours. Then the material is applied according to the usual scheme – **with the addition of 3% to 5% distilled water in layers up to 0.5 mm with interlayer drying for 24 hours**. The thickness of the layer of 0.5 mm can be determined by a thickness gauge of the "paint comb" type, the material consumption of 0.55 liters per 1 m2 (approximate consumption when applying a brush coating on a flat surface) or the thickness of the "optical density" of the material (so that the substrate does not shine through the material). The material consumption is affected by the type of surface and the method of application. **The total thickness of the coating and the number of layers is determined by the thermal calculation or recommendations of certified regional representative offices of the production.**

4.Safety precautions when working with BRONYA

4.1 Individual protection.
Under normal conditions, the product is safe. If the room is well ventilated or work is carried out outdoors - respirators are not required. In a room without **ventilation** - **use standard respirators**. To protect the eyes, use chemical safety glasses. There must be access to running water for eye washing. To protect the skin, use chemical gloves and protective clothing.
4.2 Critical situations.
If the product gets into the eyes, immediately rinse the eyes in running water for 15 minutes. If irritation persists, consult a doctor. In case of contact with the skin, rinse with soap and water. Dirty clothes should be washed during repeated use. In case of contact with the respiratory system, get out into fresh air. The product in the liquid state does not ignite. In case of fire of structures or structures on which the coating is applied, use water, foam, dry chemicals and carbon dioxide during extinguishing. In case of spillage of the product, use any absorbent material such as sand, soil, etc. or rinse with plenty of water.

5.Storage and transportation conditions BRONYA ANTIKOR

Storage of BRONYA ANTIKOR material is carried out in **a tightly closed container at a temperature from +5 ° C to +30 ° C**, air humidity no more than 80%, away from direct sunlight. Transportation is carried out by any type of transport at **a temperature above + 5 °C away from direct sunlight**. The packaging of the cargo for transportation must ensure the correct installation of containers and the safety of containers. It is not recommended to install more than 3 buckets in a 20-liter container or 5 buckets in a 10-liter container in height on top of each other without additional packaging during transportation! **Violation of the integrity of the container leads to damage to the material.**