

BRONYA

SUPERFINE HEAT INSULATION

APPLICATION GUIDELINES BRONYA WINTER NF Superfine Heat Insulation

Bronya Winter NF is intended for use in construction, reconstruction and repair of residential, civil, and public buildings at freezing temperatures of ambient air ranging from +30 °C to -35 °C. It has low Newtonian fluidity, therefore, it practically does not slip down when applied to vertical surfaces, even if the coat is 1 mm or more thick. Besides this material has high vapor permeability and can be used for insulation of the enclosing structures of buildings and constructions. Operating temperature of **Bronya Winter NF** modification is in the range from -60 °C to +90 °C. When using **Bronya Winter NF** liquid heat insulation, pay special attention to the following conditions.

- Prior to opening a package make sure the seals are intact
- Avoid excessive agitation during preparation (refer to section 2 below)
- Avoid excessive water dilution during preparation (refer to section 2 below)

Prior to application of **Bronya Winter NF** material to building facades that require repair, perform expert evaluation of the facility state and execute capital repairs of all external members to be coated with this material.

OPERATING PROCEDURE

Bronya Winter NF belongs to water inactive systems and contains suspension of closed porous microgranules in solution of acrylic silicone-modified resin with plasticizers, biocides, fungicides and other additives. The material has good vapor permeability and moisture resistance, as well as high light resistance. **Bronya Winter NF** displays good adhesion to most substrates; it is water-proof and alkali-proof, and suitable for use on various substrates.

1. Surface preparation

Surfaces ready for material application must be dry, smooth and clean. Humidity of surfaces under painting must not exceed the following values: plastered and brick surfaces - 5%, concrete surfaces - 4%. **Bronya Winter NF** insulation must be applied at ambient humidity not greater than 80%. Never apply **Bronya Winter NF** insulation under the following conditions:

- During rainy weather, and on wet facade after rain;
- During snowfall, and on wet facade after snowfall;
- If frost and ice crust are present on the surface to be insulated.

It is not recommended to apply **Bronya Winter NF** insulation on the substrates that are previously coated with silicate paints and silicate primers. The material should not be laid on wooden and metal surfaces. Metal surfaces coated with special protective primers or corrosion resistant materials such as BRONYA ANTIRUST or BRONYA CLASSIC are the only exception to this rule since porous structure of **Bronya Winter NF** modification may cause corrosion on the metal substrates. Remember that despite the high alkali resistance of polymerized material, **Bronya Winter NF** in liquid state poorly interacts with the substrate that has high pH. Therefore the material should not be laid on concrete, cement, cement-and-sand surfaces with drying time less than 30 days. Prior to application of **Bronya Winter NF**, the surfaces under painting should be conditioned. Conditioning of facade surfaces involves mechanical removal of loose paint coats using scrapers, putty spattles, discs and other tool. Partial removal of paint coats includes removal of soot, dirt and dust from the facade surface. Cleaning during restoration is carried out with the use of such compounds as AFG with subsequent degreasing with solvent 649, 147, etc. Surface temperature and ambient air temperature shall be from +30°C to -35°C when the insulating coating is applied by airless method or using paint brush and rubber putty spatula.

2. Material preparation

Coating preparation consists of the following steps:

The material shall be stirred manually or mechanically (with mixer).

If a drill with paddle bit or a mixer is used (please consult your local **BRONYA** representative regarding the type of equipment to be used), **the maximum permissible agitating rate is 100-150 rpm. Excessive agitating rate will cause microsphere destruction and dramatic deterioration (or loss) of heat insulation efficiency.**

Use vertical travel of the paddle to immerse the stiffened part into liquid, switch on the drill and start slow rotation of the paddle to mix the solid lumps with the liquid. Keep mixing until the product becomes a creamy-like mass. Approximate time of mixing with the mixer is 3-8 minutes, for manual mixing is 7-10 minutes.

To achieve the required material consistence, prior to use, add solvents to **Bronya Winter NF** insulation. It is required to use ortho-xylene as a solvent. Other solvents are not recommended for use! 5 to 10% of solvent of **Bronya Winter NF** volume should be added (until the working consistence of the material is achieved). Once the solvent is added, the material should be used. During brushing periodically stir the material in the container, once every 5 - 7 minutes. When the material is applied by brush do not use the material from the bucket. First prepare the material for use, and then put some quantity (a couple of liters) to a smaller container which can be easily stirred with the brush during application process. During airless spraying the material should be continuously stirred in the container, in other words one person stirs the material, the other person applies the coating.

3. Coating application

It is recommended to apply **Bronya Winter NF** with an airless sprayer having pressure of 60-80 bar at the spraying tip outlet.

IMPORTANT! Not all airless sprayers can be used for application of **Bronya Winter NF** insulation!!! Please consult your local Bronya representative or the manufacturer regarding the selection, adjustment and operation of the airless sprayers. Also check the additional Operation Sheet for operation of the airless sprayers. One can use soft wide paint brush with natural bristles to lay the coating on small surfaces or areas of irregular shape. Never apply insulation coating in humid weather because moisture thins down the material thus not allowing it to dry. Since the material contains volatile and highly inflammable solvents, all fire safety regulations should be taken into account while handling the material.

Thickness of a single coat of **Bronya Winter NF** insulation is 0.5-1 mm. One 0.5 - 1 mm thick coat can dry within 24-48 hours. The next layer can be applied only after complete drying of the previous layer (interlayer drying), in other words in 24 - 48 hours. To form a coat approx. 1 mm thick three to five passes of sprayer, brush or putty spatula are required. Laying of material with thicker coats is not allowed, since this results in development of damp-proof film on its surface; the film will prevent complete polymerization, and this will lead to loss of thermo-physical properties and coating deformation. Theoretical consumption of the material: 1 liter per 1 m² at coating thickness 1 mm. For brushing, this consumption rate can increase by 5-10% due to brush losses. For application with airless sprayers, take into account 20-35% of excess consumption.

For mechanical application (airless sprayers), constant agitation of the material during spraying is required.

Be sure to obtain continuous, uniform and holiday-free coat when applying the material, without gaps and poorly coated areas. Every layer shall be applied only after complete drying of the previous layer. For operation with sprayers, observe the following rules.

- constant stirring of material in the container used as supply for spraying (one person should continuously stir the material, while the other should apply the material);
- the material shall be applied in two mutually transverse directions: apply the first coat, moving the paint sprayer in vertical direction, the second coat in horizontal direction;
- travel speed shall be uniform approx. 14 - 18 m/min;
- to obtain uniform coating, the applied coating must overlap the previously laid band of coating across 0.3 of width;
- when preparing the paint sprayers for work, pay attention to the cleanliness and alignment of the material spraying nozzle openings on the air head and to air-tightness of the equipment.

Do not tint the material by yourself. The coating can be painted with acrylic waterborne paints after complete polymerization (drying).

Properties of the insulating material become noncombustible upon expiration of 7 days after the last coat has been applied.

4. Storage and transportation conditions

Keep in tightly closed containers at -40°C to +40°C.

Shelf life: 12 months. Material delamination in containers is possible during long storage; this can be eliminated through thorough agitation prior to application.

The materials are transported using any mode of transport at temperature ranging from -40 °C to +40 °C away from direct sunlight. The materials to be transported shall be packaged in such a way to ensure proper positioning of the containers and package integrity. Loss of package integrity results in material damage.

5. Occupational health, safety, environment and fire requirements

For application of **Bronya Winter NF**, operating personnel must be provided with the following personal protective equipment:

- Safety shoes and protective clothing (see GOST 12.4.103-83);
- Rubber gloves (see GOST 20010-93);
- Cotton gloves (see TU 17 RSFSR 06-7745-84);
- Open and close type safety goggles;
- Respirators RU-60M, RU-60M-A, RU-6 ONU, RPG-67A, ShB-1, U2K, «Lepestok» (see GOST 12.4.028-76*, GOST 17269-71*), F-62Sh for respiratory tract protection.

In case of skin contact, remove the material with hand cleanser and wash with plenty of water. **Bronya Winter NF** coating and solvents must be kept in closed and ventilated fire and explosion proof rooms. Application of the material must be carried out in strict compliance with the occupational health, safety, environment and fire requirements as written in the below listed documents:

SNiP 12-03-2001. Occupational Safety in Construction. Part 1. General Requirements.

SNiP 12-04-2002. Occupational Safety in Construction. Part 2. Construction Processes.

SSBT (Occupational Safety Standard). Organization of Labor Safety Training. General Provisions.

SSBT. Fire Safety. General Requirements.

SSBT. Painting Works. General Safety Requirements.

POT RM-016-2001 Inter-Industry Occupational Safety Rules (Safety Rules) for Electrical Installations Operation.

SP 12-135-2002 Occupational Safety in Construction. Industry Standard Labor Safety Regulations.

Consult your official regional dealer or the manufacturer regarding the exact values of coat thickness, drying time, interlayer drying time, addition of solvent, etc.

In case of noncompliance with the application and storage instructions, the manufacturer shall not be liable for the quality of coating