

# Instruction sheet for PUREX NG-0808NF-B2 two-component closed-cell spray foam system

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## 1. Purpose and Scope

The polyurethane foam produced from the PUREX NG-0808NF-B2 system is recommended for use in the thermal and acoustic insulation of walls, ceilings and floors, as well as attics and lofts. Because of its open-cell structure, the insulation formed must not be exposed to long term mechanical stress, humidity, condensation and direct weather conditions. The foam should also be used in combination with an appropriate thermal, vapor and anti-ignition barrier (eg. 12 mm plasterboard) separating the insulation from the building interior and meeting fire safety requirements.

The use of PUREX NG-0808NF-B2 foam as a thermal insulation should be in accordance with the technical design plans developed for the specific application, taking into account:

- the requirements of the relevant building standards and technical regulations in force in the country of use (In Poland - Regulation of the Ministry of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location (Dz. U. No. 75 of 2002, item. 690, as amended),
- these manufacturer's instructions ,

The design plan should specify, among other things, the thickness of the insulation and the manner of inspection and acceptance of the insulation work.

**This product is subject to assessment and verification of constancy of performance according to the harmonized standard EN 14315-1: 2013. The foam installed by contractor spraying is required to be in accordance with EN 14315-2: 2013.**

## 2. General instructions for processing

The spray polyurethane system consists of two liquid components: a polyol component denoted as A (NG-0808NF PUREX-B2 / A) and an isocyanate denoted as component B (PUREX B).

The spray foam produced by the mixing of the two components of the system is carried out by specialized low pressure / high pressure dispensing units adapted to process two-component systems with the given product data range for viscosity and reactivity.

The optimal use of the two-component polyurethane system spray machine consists of a good mixing of the two components and the correct spraying of the resulting mixture. The spray machine manufacturer's instructions must be strictly followed and the parameters of the machine set according to the required mixing and spraying.

**Prior to commencing work, component A of the system should be thoroughly stirred by machine** – the stirring time for the V200 barrel is approximately 1 hour. Component A should also be continuously stirred during use. If the quality of the foam is considered to be inadequate then spraying should be interrupted and the drum of component A re-stirred.

**ATTENTION: The long-term use of an insufficiently stirred polyol component will cause the irreversible loss of its properties.**

Stirring the polyol with a suitable mechanical stirrer, assisted by recirculation will aerate and lower the viscosity of the component and have a positive effect on the quality of the resulting foam and the volume efficiency of the system being utilized.

**ATTENTION: Special care should be taken when preparing the spray unit to work with the NG-0808NF-B2 system, especially when replacing components in the machine: Do not allow the contamination of system components by the remnants of another system processed earlier in the machine or materials from cleaning and maintenance - even a small degree of contamination may inadvertently prevent the formation of foam with the correct structure and parameters. Therefore, when changing components (particularly the polyol component), it is advisable to make sure the transfer pumps are completely empty and air pockets generated before being placed in fresh component containers to restart the process.**

In order to achieve maximum efficiency and the optimal quality of the structure of the spray foam, it is recommended that processing takes place under the following conditions

- the temperature of the components in the containers (drums) for use in the spray unit should be between 28 - 30°C – and should be obtained before the commencement of spraying by the recirculated components by utilizing the heating function of the dispensing unit or by heater bands mounted on the drums
- a spray foam temperature at the entrance to the spray head (during spraying) of between 45 - 60°C, achieved by the appropriate setting on the dispensing unit heaters

It is recommended that before starting the actual spraying, a test "shot" is carried out into a bag or onto a spraying surface to evaluate the reactivity of the foam and to assess its structure. We recommend determining the response time of the system and the apparent density of the foam. It should be remembered that the temperature of the components and the ambient temperature and humidity have a crucial impact on the derived parameters of the foam.

The interior of the foam should have a uniform pale yellow color and the surface should not have dark spots and stains as this appearance would indicate an inadequate mixing quality due to a pressure drop in the constituents, too low a temperature in the dispensing unit, improper selection of the mixing module or a fault (blockage) of the spray gun.

Adhere to the required mixing ratio of 1:1 by volume for components A and B. Any deviation from this ratio will affect the mechanical parameters of the foam. Large deviations from the correct mixing may mean that the foam doesn't reach its normal structure and will not be able to cure. It is recommended that the mixing ratio is inspected each work day.

The spray pattern of the foam mixture from the spray gun should also be determined. The shape of the spray cloud from the nozzle should be in accordance with its type and should not be in the form of "droplets", which may mean a local non-mixing of components and an occurrence of defects in the foam layer in the form of delamination and blistering . In the case of improper spraying the mixture gun's nozzle should be examined and the appropriate corrective action and maintenance carried out.

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### **3. Surface preparation for spray foam**

Surfaces must be clean and free of moisture, dust, oil and other pollutants.

Porous materials stored in moist conditions must have a completely dry surface or an insulated liner.

Primers are recommended for most substrates. Primers should be used on all unprotected metal surfaces to improve adhesion and prevent corrosion. Wood and other porous substrates need to be isolated from polyurethane moisture.

It is recommended that the primer is applied in thin layers without streaks. All primer layers must be dry before foam application.

All building elements such as skylights, ventilation components, doors, windows and other joinery elements must be tightly covered with polyethylene film or other protective material to prevent spray foam contamination.

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#### 4. Optimal environmental conditions

The recommended ambient temperature for spray execution is between: +15°C and +30°C with an outdoor air temperature of between 0°C and + 35°C.

The recommended substrate temperature is from +5°C to +60°C.

Spraying is not recommended when the relative humidity is above 70%. High humidity can cause delamination of foam and detachment from the primer.

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#### 5. Thickness of the spray foam layer

Spraying should aim to achieve a layer thickness in the range of 8-15 cm. If this thickness is not achieved because of, for example, a cold substrate or a low ambient temperature, then the layer can be supplemented with another portion of the foam. The recommended thickness range indicates the optimal use of the system to give proper quality foam.

Under given temperature and humidity conditions, the thickness of the foam layer can be regulated by changing the efficiency of the dispensing unit or changing the spray speed of the gun. In practice, spray one to two layers.

Where a further layer is to be applied, the lower layer should be allowed to dry for approximately 5 minutes before application of the next layer.

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#### 6. Personal protective equipment requirements

With proper application and following the basic principles of health and safety, the PUREX NG-0808NF-B2 system does not pose a threat to human life or health.

For details regarding the safe use of system components, please refer to the Data Sheets for the two components of the system and follow the instructions contained therein.

When applying the foam, protective clothing and gloves are to be worn and, in particular, full face protection and a respiratory system should be utilized.

Any room in which foam spraying work was carried out should be well ventilated before occupation.

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#### Attention

These recommendations for working with the polyurethane system are based upon our best experience. For some applications you may require slightly different user conditions. Therefore, before using our products, please contact our technical advisor, who will help you choose the best method for using a system for a particular application.

#### Each user is obliged to check the suitability of the product for the required application.

Before commencing work with the polyurethane system, the user should please read the principles for the safe handling of the product contained in this data sheet and the product safety data sheet as available from Polychem Systems.