

# MANUFACTURER INSTRUCTION

# PURIOS 500

## Open-Cell Spray Polyurethane Foam Insulation Systems

### GENERAL INFORMATION

Purios 500 Open – Cell Systems is a two-component polyurethane system for producing of semi-rigid polyurethane foam with open cell structure, applied "in – situ" as spray thermal and acoustic insulation.

Components Purios 500 Systems do not contain blowing agents that deplete the ozone layer of the Earth.

### DESCRIPTION OF THE COMPONENTS

**Component B:** a mixture of polyols containing catalysts, flame retardants, and blowing agents.

**Component A:** Purios A (polymeric diphenylmethane 4, 4' diisocyanate).

### APPLICATION AND ADVANTAGES OF PURIOS 500 SYSTEMS

Components **Purios 500 Systems** are applied by spraying using a dedicated spray equipment in relation metering 1: 1 by volume. The main purpose of the system is thermal and acoustic insulation inside the building.

#### Advantages of the systems:

- Very good adhesion to the surface - it does not require additional adhesives and connectors
- Acoustic and thermal insulation in a single application process obtained by the open-cell foam structure
- Speed applications not requiring the storage of dealing with large storage space, as in the case of mineral wool or polystyrene (EPS, XPS)

### GENERAL RULES AND RECOMMENDED APPLICATION CONDITIONS

The foam quality is dependent on the following factors:

- Exact preparation of component B before use (mixing and preheating of materials in barrels to the recommended temperature)
- Weather conditions: temperature and humidity of environment and spray surface
- Setting the machine parameters of spray - the correct mixing ratio, pressure, temperature components, and hoses
- The proper application - the behavior of the recommended thickness of the layers ensures optimum parameters foams
- Behavior intervals between successive layers of spray, to obtain the correct temperature of the substrate

### SURFACE PREPARATION AND APPLICATION SYSTEM

The surface which will be applied polyurethane Purios 500 System must be clean, dry, stable surface free of dust, oil to ensure adequate adhesion to the substrate. In the case of metal surfaces, they should be free from metal oxides and rust.

Purios 500 System can be applied to any type of substrate, except for substrates with a thermoplastic material, galvanized sheet (unprepared), glass and painted surfaces before they are matt by chemical or mechanical. In the case of internal systems, secure windows and movable and immovable property which may become dirty during application.

**Note: Regardless of the type of substrate is encouraged to try adhesion of polyurethane foam to the surface.**

**Note:** Before starting the application is recommended to check the accuracy of the machine and system parameters by performing spray foam panel (e.g. OSB, gypsum - cardboard, cardboard), excision samples with dimensions 5,9 x 5,9 x 5,9 in to measure apparent density foam and comparison the results with the values declared in the Technical Information.

### THE THICKNESS OF THE SPRAY

The recommended thickness of the spray layer is controlled by choosing a suitable nozzle and the speed of the application and **should be in the range between 2,4 – 3,9 in.** Keep in mind that the quality of the insulation is better if the layers are applied comparable thickness. **One layer should not exceed the upper range of thickness** due to problems of heat release during the foaming reaction.

Too thick a layer may cause problems with heat generation during the foaming reaction, while too thin a layer may result in a higher density foam.

### THE IMPACT OF WEATHER CONDITIONS ON THE SYSTEM AND APPLICATION

Keep in mind that the temperature of the components has a big impact on response times.

On the cold surface of the first layer react longer and the foam usually not reaches 100% of the thickness.

Accordingly, the surface of the first layer is heated surface so that the next layer has increased accordingly. Too hot surface will appear problems with the adhesion of foam to the substrate.

Therefore, it is important to pay attention to the recommended surface temperature applications.

#### RECOMMENDED IN THE APPLICATION

Temperature components to the application (in barrels)	77 °F – 86 °F
The minimum surface temperature	59 °F
The maximum surface temperature	104 °F
The recommended range of surface temperature	59 °F – 77 °F
Minimum ambient temperature (where is an application)	59 °F
Recommended ambient temperature range (where is an application)	68 °F – 86 °F
Relative humidity of air	max. 60 %
Relative humidity surface:	
Cardboard - gypsum plate	4,5 – 7,0 %
Semipermeable membrane *	0 – 0,5 %
Corrugated cardboard	4 – 7 %
Wood	11 %
Concrete (after aging for 28 days)	5 – 6 %

\* Semipermeable membrane - refer to the manufacturer's instructions

#### RECOMMENDED PARAMETERS SPRAY

TEMPERATURE HEATING BLOCKS	104 °F – 131 °F
TEMPERATURE HOSE	104 °F – 131 °F
PRESSURE	1200 – 1600 psi

**Please note that these are theoretical values and parameters depend on the outside conditions.**

**During the execution of the application should be corrected according to the changing external conditions.**

Note also the relative humidity of the air (max. 60%), especially for applications in confined spaces. Too high humidity adversely affects foam quality and adhesion to the surface.

After the end of the application is required period seasoning foam 48 h and time of airing investments 48 h in the conditions of carrying out the application. During this time, it is forbidden to cutting, grinding foam.

During the seasoning, foam should provide conditions like the conditions under which conducted the application (temperature and humidity of the application).

#### MIXING RATIO

Preserve the stability of the mixing ratio during operation is very important for the quality and stability of the resulting foam.

**Note:** Before start working, it is recommended to check the correct operation of the machine by performing the spray test while observing the correct operation of the machine. A large pressure differential component (over 10% between the components) during spraying may indicate problems with the machine spray - is required the intervention of service - in this case, it is prohibited to continue the work until the removal of the cause.

**Note:** Due to the possibility of delamination of component B in a barrel, in order to achieve optimum parameters of foam is necessary to the thorough mixing just before the start of spraying. The polyol should be stirred in the container provided, mechanical stirring until a homogeneous throughout the volume of liquid in the barrel. Heating the raw materials in the barrel greatly improves the quality of mixing of the ingredients.

#### SAFETY RULES

Purios 500 Systems for correct use does not pose a threat to human life and health.

Avoid contact of components with skin and eyes. During the application used clothing and gloves, use face protection and breathing apparatus.

Before working with the Purios 500 System refer to the content and adhere to the recommendations contained in the Material Safety Data Sheet, Declaration of Performance and Information Technology.

**In case of doubt, or when disturbing adverse events during application, discontinue use and contact the manufacturer of the system.**

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