

TECHNICAL DESCRIPTION

EXY 34 HFO® is a two-component, medium-hard, closed-cell polyurethane foam system that is applied by spraying. **EXY 34 HFO®** meets the requirements of EN 14 315-1:2013 for residential and commercial buildings. It is used as thermal insulation, an air barrier, a vapor barrier, and a waterproof barrier. It can be used for interior and exterior applications. It can also be used as underfloor or above-floor insulation.

EXY 34 HFO®

RECOMMENDED PRODUCT APPLICATION

- walls • reconstruction of the attic • floors • roofs • vaulted ceilings • foundations • tanks – swimming pools • perimeter walls
- freezer boxes • air-conditioned warehouses • metal sheet halls

INTENDED USE

It is intended for use as insulation for interior and exterior walls of residential and commercial buildings. **EXY 34 HFO®** provides excellent insulation and thermal properties, effectively reduces heat loss thanks to its continuous insulation layer, and creates an air barrier. **EXY 34 HFO®** creates a vapor barrier from 5 cm, shifting the dew point outside the building structure. It creates fast and effective insulation. It does not require mechanical anchoring.

ATTENTION: Exceeding 25°C for component B (polyol) reduces shelf life. If component B (polyol) is exposed to temperatures below 5°C, it must be stored at room temperature (20-25°C) before processing to warm up again. Never use barrel heaters or recirculate the material! Increased fabric temperature releases the blowing agent (gas) contained in the polyol.

PROCESSING CONDITIONS EXY 34 HFO®

The maximum thickness of a single spray-layer shall not exceed more than 5 cm of expanded foam. After the application of one spray-layer, the foam should be allowed to cool below 35°C before proceeding further, or until the surface temperature of the foam has dropped to ambient temperature. If the foam is applied over a thickness of 5 cm or the cooling time is not observed, it may result in temperature overshoot and subsequent fire or release of aggressive odors that dissipate over time. The substrate temperature shall be at least -5°C.

Recommended technology settings

Pressure (dynamic)	1000-1300 psi
Main heater	40-46° C
Hose temperature	40-46° C
Optimal material temperature in drums	15-25° C

Recommended pressure for mixing chambers

00 (2929)	700-900 psi	48-62 bar
01 (4242)	900-1200 psi	62-85 bar
02 (5252)	1200-1400 psi	85-95 bar
03 (6060)	1400-2000 psi	95-137 bar

APPLICATION PROCEDURE

The optimal pressure and temperature in the hose may vary significantly depending on the environment, equipment type, and the substrate's moisture content. It is the application technician's responsibility to set and adjust the temperature and pressure to maintain the correct cell structure, adhesion, cohesion, and overall foam quality. PUR foam application technology must maintain a 1:1 mixing ratio at a given pressure and temperature. The substrate must not be greasy, wet, frozen, or icy. The substrate must be solid, must not crumble, and a substrate adhesion test must be performed. The applicator is solely responsible for processing and applying this product in accordance with the specifications.

Recommended spraying technique at a 90-degree angle to the substrate. Application distance 40-60 cm from the substrate. Spraying should overlap by 60-80%. Apply by spraying into the gelling material (wet line) as it rises. If the temperature or pressure is set too high, spraying will be uneven, and the application nozzle will clog. The wet line will be less pronounced, and the surface will be rough. A lower temperature will affect material mixing, resulting in a non-uniform spray cone. Apply the foam perpendicular to the surface, 2.5-5cm deep. Maximum thickness 5cm per layer (after expansion) to prevent fire hazard (including spontaneous combustion) due to excessive heat generation. A second 5cm layer can be applied immediately after the first layer has fully risen. If another layer is applied, wait until the foam temperature drops below 35°C. We can then apply further layers. Applying too thick a layer too quickly can cause the foam to burn or, in extreme conditions, catch fire. Thin foam layers often result in poor physical properties and poor chemical performance due to the low exothermic heat generated by the reaction, which is necessary to create the correct closed-cell structure. Moisture content of substrate ≤18%. Application on concrete after 30 days. Must be cured, dry, and dust-free.

ATTENTION: Special care must be taken when replacing new drums, reinstalling feed pumps to avoid mixing or contamination of the "A" and "B" components. Always use pumps from "A" again to the "A" drum and from the "B" to the "B" drum. **Do not add other materials from other manufacturers to the "A" and "B" components.**

WARNING: The information presented in this document is not intended for use by non-professional applicators or persons who do not purchase or use this product for business. The potential user must perform all tests to determine the product's behavior and fitness for the use, as the final determination of the product's suitability for a specific application is the responsibility of the purchaser. HONTER® Company makes only those warranties and guarantees expressed in writing by the manufacturer.

TECHNICAL PARAMETERS EXY 34 HFO®

Harmonised standard: EN 14315-1:2013

Thickness	± 5 %
Initial value of thermal conductivity at 10°C*	$\lambda_{Di} = 0.023 \text{ W/m.K}$
Declared coefficient of thermal conductivity after aging (λ_D)* according to Annex J of the EN 14315-1:2013 standard and at a temperature of 10°C	Thickness $\geq 120 \text{ mm}$ 0,025 W/m.K
Reaction to fire	Class E
Reaction profile at 21°	NPD
Core free-rise density**	33 - 38 kg/m³
Stability of reaction to fire during aging/degradation	The reaction to fire does not decrease with time according to Cl. 4.2.5.2 EN 14315-1
Stability of thermal resistance during aging/degradation	see Table 2 of Declaration of performance
Compressive strength stability during aging/degradation	NPD
Closed cell content	CCC4 ($\geq 90 \%$)
Water vapor diffusion -water vapor diffusion factor	$\mu \leq 83$
Short-term water absorption by partial immersion	$W_p \leq 0,2 \text{ kg/m}^2$
Compression strength (10% deformation)	CS(10\Y)200
Compressive creep	NPD
Sound absorption - weighted sound absorption coefficient	NPD
Dangerous substances – emission VOC (EN ISO 16000-10)	Meets the requirement for the emission of VOC
Adhesion to the substrate perpendicular to the surfaces	NPD
Reaction to fire in standard assemblies simulating end use	NPD
Deformation under specified compressive load and temperature conditions Loading: 20 kPa; Temperature: (80±1)°C Time: (48±1)h	NPD
Dimensional stability (70±2)°C a RH (90±5)°C	NPD
Dimensional stability (-20±3)°C	NPD
EN ISO 846:	
Biological resistance	Method A: Fungal growth – intensity of growth 0 Method C: Bacterial growth – no growth

Note: NPD = No performance determined. Designation code: PU EN 14315-1- CCC4-CS(10\Y)150-MU64-W0,2 Note: *Declared values were determined on the basis of measurements carried out by the Notified Body and internal measurements - on samples prepared under standard laboratory conditions. Parameters may vary depending on the substrate and application technique. **The bulk density varies depending on the number of applied layers.

STORAGE, TEMPERATURE, PACKAGING

Component A has a shelf life of 9 months at storage temperatures of 15–35°C, while Component B has a shelf life of 6 months at 15–20°C. It is important to prevent the components from being exposed to temperatures outside the specified ranges. The recommended temperature of the material in the application drum is 22°–25°C. The drums must be stored on pallets.

Component Type of packaging and Weight

Component “B” drum 225 kg / IBC 1000 kg

Component “A” drum 250 kg / IBC 1000 kg

Note: IBC = intermediate bulk container

Reactivity profile

Cream Time = 1 seconds

Gel Time = 3 seconds

Tack Free Time = 3-5 seconds

End of Rise = 3-4 seconds

HANDLING AND SAFETY

Respiratory protection is mandatory! HONTER® requires the use of protective equipment, a full face mask with air supply during any foam application and for two hours after completion. Active ventilation is also required to ensure proper air exchange. **Component “A” contains reactive group of isocyanate, ventilation must be provided in the workplace during handling.** Avoid inhalation of vapors and exposure to substances. Open drums slowly so that any pressure is slowly and safely released. Always wear protective equipment and follow safety instructions when handling or working with these materials. During, after application, the area must be actively ventilated to ensure proper ventilation of vapors from the PUR foam application! During application the area must not be occupied by other persons, only by a trained application technician. Air conditioning and ventilation for at least 24 hours after application is important and must not be neglected. For this PUR foam system avoid incorrect application

procedure. This includes: excessive thickness of the sprayed growing foam, disproportionate mixing of the material, incorrect processing temperature of the substances. Improperly applied materials can cause excessive temperature rise where a fire can occur or an aggressive odor that may not dissipate over time – air out. The foam sprayed in this way may have poor properties due to improper processing of chemicals or a large thickness of material applied at the same time! Excess masses that are generated should be removed from the area, cut into small pieces and allowed to cool before disposal. Failure to follow this recommendation may cause a fire. The applicator must ensure workplace safety at the application site. All construction personnel should be made aware that PUR foam application is taking place by appropriate markers and that all work such as welding, soldering, cutting etc. should take place at least 15 m away from where the PUR foam is being applied.

To the best of our knowledge, the technical data contained herein is true and accurate as of the date of publication and is subject to change without notice. The application company is responsible for the correct procedure and use of the product. No warranty is given or implied. We guarantee that our products pass the quality control of HONTER® Company. We assume no responsibility for insurance, performance or damage caused by use.