

# The Guide to



# Selection and Use of Polyurethane Foams and Silicons



# Polyurethane Foams



**The polyurethane foam (PU foam) is an insulation material designed for low to medium and high output applications. PU foam is expelled from pressurised can as a sticky liquid, which quickly expands and form the rigid foam. The PU foam is designed to fill small linear gaps or voids. It is advised to use only carefully selected PU foams to fill larger openings due to foam's fire-stopping properties.**

The Local Authority Building Control (LABC) advise to check PU foam properties with regards to the fire safety and confirm its suitability for the particular application. Most of the PU foams will keep the fire resistant properties only in small voids or gaps. However, there are some fire-resistant foams specifically designed and tested to

fill larger gaps. Always read the instructions and labels to select the proper product. Fire foams are usually in pink colour. PU foams can be used to fill voids that are 10-30mm wide, for instance small voids in blockwork walls or concrete floors or joints to lintels. According to LABC the use of foams in timber structures is not likely to achieve satisfactory fire-resistant results. Always use the foam in accordance with the Building Regulations.

One of the most common usages of polyurethane foam is for mounting windows or doors. The polyurethane foam provides thermal as well as acoustic insulation of the joint between the window and the wall. The use of good quality and durable foam reduces problems arising during use of windows or doors. EXPERT LINE ® polyurethane foams are top quality products which have perfect thermal insulation and soundproofing parameters, natural texture and excellent adhesion to standard building materials. The EXPERT LINE ® line of high-quality products fulfil requirements of international technical and building standards. They are designed for both

individual users doing small repair and finishing works as well as professional contractors providing all kind of renovation and building services.

#### PU Foams can be used for:

- mounting, sealing and bonding of window and door frames
- thermal insulation of water, sewage and central heating systems
- bonding and insulating of wall panels, corrugated sheet, roof tiles and the like
- thermal insulation of roofs and ceiling-rafters
- filling cracks in thermal insulation of buildings and frame constructions
- bonding of stairs, window sills and other finishing elements

**IMPORTANT**

EXPERT LINE ® polyurethane foams features include high mechanical strength and perfect adhesion to typical construction materials such as brick, concrete, plaster, wood, metals, foamed polystyrene, hard PVC and rigid PUR foams. perfect thermal insulation and soundproofing parameters, resistant to mould and fungi.

## Polyurethane gun foams

### EXPERT LINE Gun Foam

specifically recommended for professional mounting windows and doors, thermal insulation of water, sewage and central heating systems, crack filling in building thermal insulation.

### EXPERT LINE Winter Gun Foam

same usage as Gun Foam but may be also applied at temperatures below zero (down to -10°C)

### EXPERT LINE Professional Gun Foam 65

can be used for mounting, sealing and bonding window and door frames, thermal insulation of water, sewage and central heating systems, fastening and insulating wall panels, corrugated sheet, roof tiles, etc., thermal insulation of roofs and roof-ceilings, crack filling in building thermal insulation and frame constructions, fastening stairs, window sills and other finishing materials

### EXPERT LINE Professional Winter Gun Foam 65

same features as Gun foam 65 but for low temperatures

### EXPERT LINE

#### Low Expansion Gun Foam

Low expansion polyurethane foam designed for mounting and sealing applications for professional installation teams

### EXPERT LINE 65 PVC Gun Foam

especially recommended to mount PVC and aluminum windows and doors as well as interior doors with a MDF or chipboard doorframe prone to deformation, fastening window sills and stairs, owing to low pressure properties it is, recommended for mounting applications in new buildings

### EXPERT LINE B1 Professional Gun Foam

Fire resistant (DIN 4102-B1) one component polyurethane foam designed for mounting and sealing applications. Used for fire rating applications. Can also be used for all other foam applications.

- fresh foam exhibits good adhesion to all building materials
- cured foam is semi-rigid and in most parts it maintains closed cell structure
- cured foam is resistant to high and low temperatures

### PARTNER FIX Gun Foam

Good quality cost-efficient gun foam designed for mounting, insulating and soundproofing applications. Usage: window and door mounting, thermal insulation of water, sewage and central heating systems, crack filling in building thermal insulation

### PARTNER FIX Winter Gun Foam

Same features as FIX Winter Gun Foam but in the winter version down to -10°C.



## Polyurethane expanding foams



### **EXPERT LINE Expanding Foam**

One component polyurethane foam with a straw applicator designed for mounting, sealing and soundproofing applications. Usages include mounting windows and doors, thermal insulation of water, sewage and central heating systems, motor vehicle cockpit sealing and soundproofing, crack filling in building thermal insulation. Also available as EXPERT LINE Winter Expanding Foam for winter temperatures.

### **Partner Fix Expanding Foam**

Polyurethane mounting and sealing foam recommended for amateurs. With the winter edition Partner Fix Winter Expanding Foam.



### **PU foam application**

The optimal temperature conditions for PU foam applications is 20°C and humidity of 65% (standard for indoors). Regardless the type of the substrate the foam will be applied on, it has to be clean and free from dust or oils. Before application it is recommended to wet the surface slightly (only in plus temperatures) as slightly wet condition improves adhesion. Same applies when the void to fill is larger and more layers of PU foam have to be applied. When first layer (maximum 3cm before expansion) is applied it can be moisture with water before the application of the next layer. Standard PU foam should increase the volume from 100% to 120%. The low expansion foam could increase the volume in 50%. After the application is finished, the dirt from the foam should be removed with a special agent. After the curing of the foam is complete, cut the overparts and protect the foams against UV and moisture by application of paint, render or silicone. Generally from a 1000ml can we can obtain from 45-65 liters of foam, depending on the foam type.

### **How to use PU Foams?**

- Clean and degrease the working substrate.
- Before use, make sure that the can temperature is above zero (optimum temperature +20°C).
- Shake the can well (for about 30 sec.) in order to mix all the components thoroughly.
- Attach the applicator to the can and when applying hold the can upside down.
- Apply the foam from the bottom to the top of the gap.
- The crack should be filled up to 60% of its depth, maximum 5cm per layer. If the depth of the layer exceeds 5 cm a few layers should be applied.
- After application each layer should be dampened with water by means of e.g. a sprayer.
- After curing, remove excess mechanically (e.g. with a knife).
- After foam is fully cured, protect it against UV radiation using e.g. plaster or paint.

