

Compatibility of EPS and XPS insulating materials

Sealing materials of expanded polystyrene (EPS) and extruded polystyrene (XPS) install either mechanically or by bonding. The adhesive is a useful mounting aid (since it adheres immediately) and helps to improve the U-value further (i.e. it stops air from travelling between adjacent components and the sealant). However, not every adhesive is compatible with EPS or XPS and incompatible adhesives should not be applied to these sealants. We tested the compatibility at 50°C and 80°C, as may occur on a dark window ledge exposed to the sun.



*Adhesive compatible with EPS
after storage at 80°C*

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Adhesives

The adhesives below have been found to be compatible with EPS and XPS:

Adhesive	Typical application
Merbenit HT50	High initial tack while extruding easily and smoothly, providing a tight seal and excellent resistance to weathering and ageing
Merbenit SF50	High strength that develops particularly quickly even at low temperatures
Merbenit PC200	Briefly highly resistant to temperature, cures quickly, strength develops particularly rapidly
Merbenit ST40	Sprayable, excellent sealing characteristics, bonds large surfaces, long tooling time
Merbenit TS40	Transparent, adheres to many different indoor materials and surfaces
Merbenit 2K10	Two-component adhesive, high strength irrespective of humidity levels. Tooling time: max. 30 min.

How to use as an adhesive

- Best practice is to apply the adhesive in several parallel lines. Applying in circles, loops or large dots is not ideal.
- Single-component adhesives cure in humid atmospheres only. EPS and XPS allow hardly any moisture to pass through. Moisture may fully penetrate porous materials such as concrete or bricks down to the adhesive. To allow air to reach the adhesive, leave a 2 mm gap between non-porous materials glued to the same type of material (e.g. metal, plastic or insulant).
- Pre-testing is recommended.

Sealants

The sealants below have been found to be compatible with EPS and XPS:

Sealant	Typical application
Gomastit 2060	All-rounder for façades, sanitation, indoor finishing, glazing, floors, etc.
Gomastit 2040	Generally applicable, particularly on floors
Gomastit VG30	Elastic sealant for glazings and joints on and around windows and doors
Gomastit 400	Silicone, mould-resistant, high UV and weather resistance, use for sanitation, plumbing and construction
Gomastit 407	Silicone for natural stone, parquets and bonding various construction materials

How to use as a sealant

- Whereas these sealants may be applied in contact with EPS or XPS, they are not strong enough to serve as a substrate for joints.
- Excerpt from SIA 274: 3.1.1.10 Joint faces must have an adhesive tensile strength of not less than 0.6 N/mm². In case the bond with plaster proves to be less stable or not detectable, install a suitable plaster profile to reinforce the joint faces, particularly when insulating outer walls.
- Pre-testing is recommended.

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