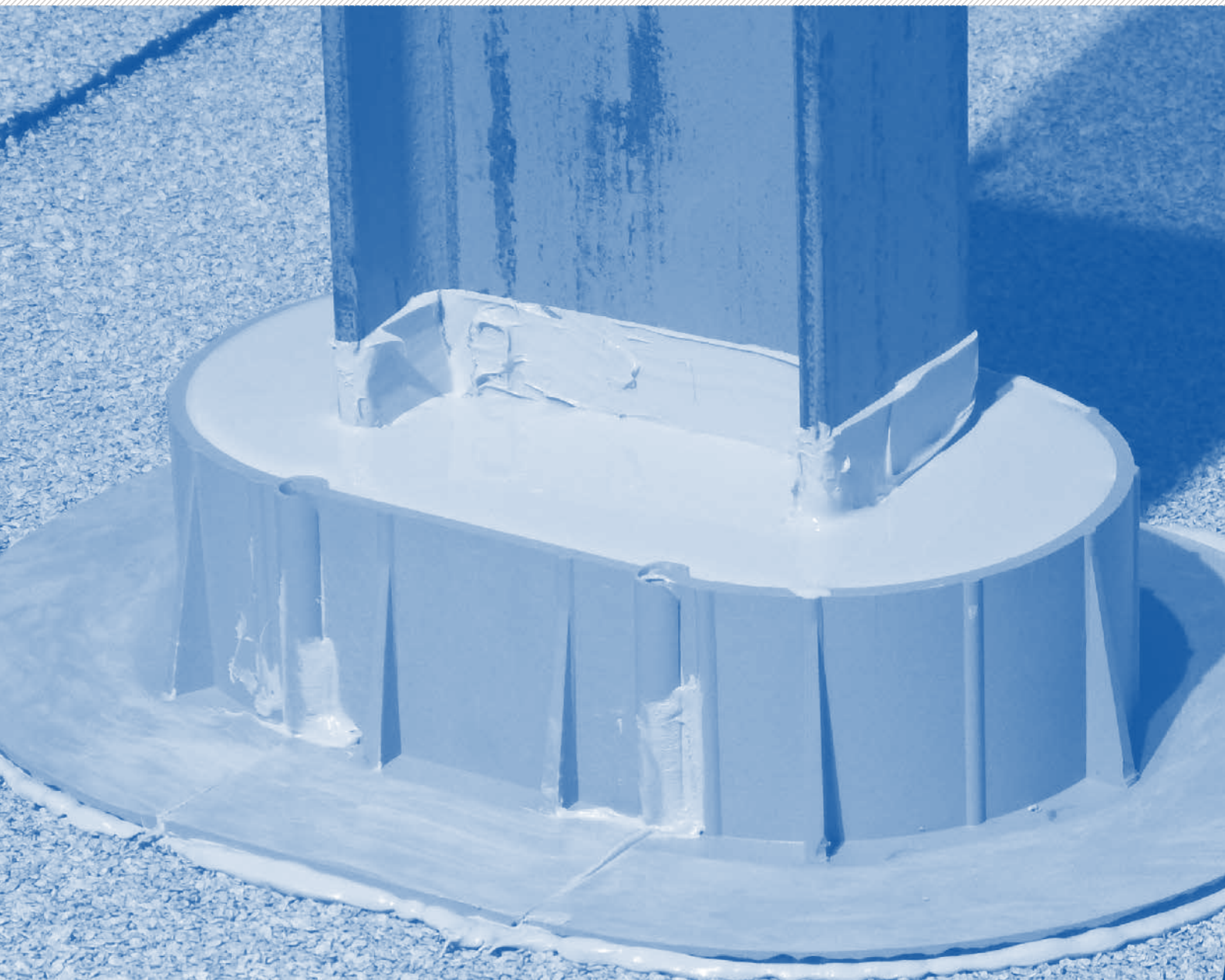


Application Manual

Polysealant System



Adds value!

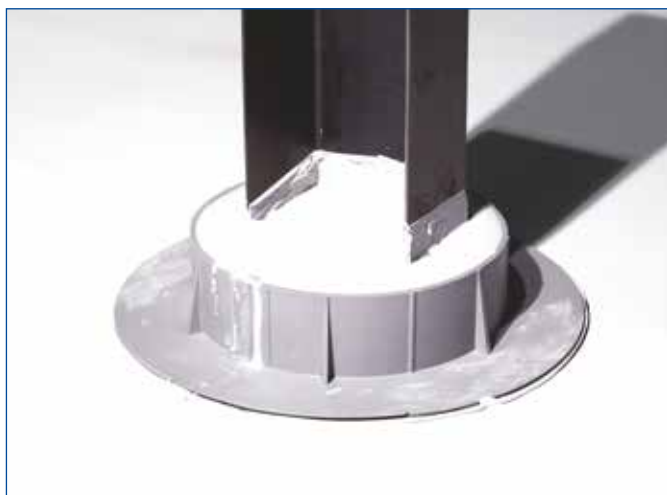


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POLYSEALANT SYSTEM

POLYSEALANT SYSTEM is an innovative complementary system for use on roofs comprising polymer bitumen membranes or PVC-P and FPO/TPO synthetic membranes, for sealing the connections of penetrations such as aerals, cables, pipes, poles, bases, fastenings for solar/photovoltaic panels, support structures, etc. of all shapes and sizes.



POLYSEALANT SYSTEM comprises various functional elements that make it a complete system:

- POLYSEALANT CARTRIDGE adhesive for sealing the base of penetrations and formworks;
- The flexible and self-levelling POLYSEALANT 1K, used for filling and sealing formworks;
- The POLYSEALANT MOULD formwork made of plastic material;
- The primer PRIMER P, to be used for application on FPO/TPO synthetic membranes.



COMPATIBLE SUBSTRATES

POLYSEALANT SYSTEM is suitable for application on the following waterproof coverings:

- Mineral surfaced BPP (APP) polymer bitumen membranes;
- BPP (APP) and BPE (SBS) polymer bitumen membranes, smooth or sand surfaced (subject to preparation as indicated in Figure 7);
- BPE (SBS) mineral surfaced bitumen membranes;
- PVC-P plastic-coated polyvinyl chloride membranes;
- FPO/TPO flexible polyolefin membranes (subject to application of PRIMER P as indicated in Figure 8).

POLYSEALANT SYSTEM is suitable for application on penetrations comprising the following materials:

- Metals (steel, galvanized steel, copper, aluminium);
- Plastic (excluding pure HDPE and polypropylene);
- Concrete;
- Seasoned timber.

For compatibility on different substrates or in case of doubt, please contact Polyglass technical service.

POLYSEALANT CARTRIDGE

POLYSEALANT CARTRIDGE is a one-component high power adhesive sealant in cartridge form based on polyether and free from solvents and isocyanates. The product is thixotropic, has 100% dry residue, does not shrink and is resistant to UV rays and easy to apply. Because of the adhesive and elastic elastomer component, POLYSEALANT CARTRIDGE is used to anchor and seal POLYSEALANT MOULD formworks and to seal the base of penetrations, in order to allow subsequent filling with POLYSEALANT 1K.

TECHNICAL CHARACTERISTICS	
Viscosity Brookfield RVF TF Spindle, 4 RPM, 23 °C (73 °F)	1,200,000 (±400,000) cP
Density ASTM D 1475	1.41 (±0.2) kg/l
Tack free time 45 ±5% R.H.	35 (±10) min
Ultimate elongation ASTM D-412	525%
Shore hardness A ASTM C-661	45
Tensile strength ASTM D-412	370 psi
Shear strength ASTM D-1002	390 psi
Tear strength ASTM D-624	111 psi
Flow at low temperature ASTM D-816	Pass -23 °C (-10°F) ¼ every spindle
Leak	No leak after 14 days
Operating temperature	From -40 to +93.3 °C

Packaging: 300 ml cartridges in box with 24 items.

Storage: Store the product in its original closed packaging in dry, cool areas. Protect open packs from water, heat, sun and frost. High temperatures reduce the product's life.

Shelf-life: 12 months from the production date if stored correctly. High temperatures and humidity levels reduce the shelf-life by about 3 months.

Cleaning: The wet adhesive can be removed using a solvent such as alcohol. The dry adhesive POLYSEALANT CARTRIDGE can be removed through abrasion or by scraping the surface.

Precautions: Avoid prolonged contact with skin. Wet adhesive irritates the eyes. In the event of contact with eyes, wash with plenty of water. Refer to the safety data sheet.

Limits / warnings:

- Apply the product to timber that has been seasoned/aged for at least 6 months.
- Do not use in operating conditions in continuous immersion.
- Do not store at high temperatures, max. 30°C.
- Remove all coatings and sealants prior to application.
- Do not apply at temperatures below +5°C.
- Test any protective paints prior to application.
- Do not use on FPO/TPO membranes without using PRIMER P.
- Do not use bitumen primers

SPECIFIC APPLICATION INFORMATION

Surfaces must be clean, dry and free from dirt, oil, grease, wax, rust and any other substance that could compromise adhesion. For cleaning, do not use oil or xylene-based solvents but denatured alcohol. Store POLYSEALANT CARTRIDGE inside the building and take it onto the roof prior to application. Test and evaluate the product to check its adhesion.

PREPARING SURFACES

Metal: Prepare metal surfaces to guarantee maximum adhesion. Remove rust, incrustations and residue by brushing until the metal is shiny. Remove films, detached coatings and oils using denatured alcohol.

Concrete: Prior to application remove all residues through mechanical abrasion, sandblasting or high pressure washing. Remove all elements that are loose and not intact. Remove stagnant and visible water prior to applying POLYSEALANT CARTRIDGE.

Timber: The timber must be clean, healthy, dry and aged for at least 6 months prior to application of the sealant. Do not use on flameproof or cracked wood.

Applying primer: It is recommended to use PRIMER P on FPO/TPO synthetic membranes.

It is recommended to test the adhesion of the support prior to application. Contact Polyglass technical service for any specific requests.

POLYSEALANT 1 K

POLYSEALANT 1K is a one-component self-levelling sealing filler based on polyether and free from solvents and isocyanates. The product is easy to apply, has 100% dry residue, does not shrink and is resistant to UV rays. Because of the adhesive and elastic elastomer component, and its self-levelling property which prevents the formation of bubbles, POLYSEALANT 1K guarantees a waterproof and long-lasting seal around the penetration.

TECHNICAL CHARACTERISTICS

Viscosity	30,000 (±15,000) cP
Specific weight	1.03 kg/l
Operating temperature	From -40 °C to +93 °C

Packaging: 1890 ml pack, box of 4 packs.

Storage: Store original, closed packs in a dry area; protect closed packs from water, heat and direct sunlight. POLYSEALANT 1K does not freeze.

Shelf-life: 12 months from the production date, if stored at 21°C with 50% R.H. High temperatures and high levels of humidity can significantly reduce the product's life.

Cleaning: Wet/still tacky POLYSEALANT 1K can be removed through abrasion or by scraping the surface.

Limits / warnings:

- Do not store the product at temperatures over + 30 °C.
- Do not apply at temperatures below + 5 °C.
- Do not apply if rain is forecast within the next 24 hours.
- Do not use the system on HYPALON membranes or different membranes from those specified. On FPO/TPO synthetic membranes use PRIMER P.
- Do not use bitumen primer.
- Penetrations must be sealed at the base exclusively with POLYSEALANT CARTRIDGE. Prior to application, remove gypsum, mastic, cement, asphalt and other contaminated parts from the penetration through mechanical abrasion. Brush away any gravel or dissolved grit.
- Remove the cap from the pack and pour out the product; after pouring, let the air out of the bag before closing it again with the cap to prevent any polymerization of the product inside the pack.

Contact the technical service for any advice/tips.

SPECIFIC APPLICATION INFORMATION

Application: All surfaces must be clean, free from mastic, cement, asphalt and other contaminants. Also remove gravel and dissolved grit. Seal the base of the penetration and the POLYSEALANT MOULD formwork with POLYSEALANT CARTRIDGE. Make sure that the formwork to be filled is completely filled to the top with POLYSEALANT 1 K up to a max. thickness of 5 cm with a minimum distance from the penetration of 2.5 cm. Do not mix POLYSEALANT 1 K with other materials or with other liquids. Do not apply if rain is forecast or in temperatures of less than +5 °C. It takes 1 week at 22 °C and R.H. of 50% for complete drying for a thickness of 6 mm. The minimum application temperature is +5°C; low temperatures and humidity slow down drying; thicknesses over 5 cm require 2 or 3 months for complete drying. Once open and used, the product can be closed again with the cap, taking care to let the air out of the bag and to prevent the polymerization of the product inside the pack.

Do not use on FPO/TPO membranes without first applying PRIMER P. Smooth polymer bitumen membranes require a granulated surface.

Do not use oil-derived solvents such as xylene. Store POLYSEALANT 1K inside the building and take it onto the roof prior to application. Test and evaluate the product to check its adhesion.

Remove stagnant water prior to application of POLYSEALANT 1K.

It is recommended to fully fill the formwork, POLYSEALANT MOULD, and to maintain a distance of 2.5 cm between the penetration and the inside of the formwork to create a suitable rubbery seal.

Drying times: POLYSEALANT 1K is a sealant that polymerizes with moisture. Drying depends on the atmospheric conditions. Drying happens at a rate of 6 mm per week at the temperature of 22°C and 50% R.H. Low temperatures and low levels of humidity increase the drying times whereas high temperatures and high levels of humidity speed up the drying times. Thicknesses over 5 cm dry in 2-3 months.

Precautions: Avoid prolonged contact with skin. Adhesive that has not dried yet irritates the eyes. In the event of contact with eyes, wash with plenty of water and seek medical advice.

Refer to the safety data sheet.

POLYSEALANT MOULD

The POLYSEALANT MOULD formworks are made of resin. Round, rectangular and linear extensions of formwork are available, which can be combined to create square or rectangular shapes. Each formwork has a height of 5 cm. The POLYSEALANT MOULD formworks are resistant to UV rays and corrosion-proof.

TECHNICAL CHARACTERISTICS

POLYSEALANT MOULD Ø 7,5 cm - 24 items per box

POLYSEALANT MOULD Ø 10 cm - 12 items per box

POLYSEALANT MOULD Ø 15 cm - 6 items per box

POLYSEALANT MOULD Ø 22,5 cm - 5 items per box



POLYSEALANT MOULD RECTANGULAR 11,5 X 9 cm - 12 items per box



POLYSEALANT MOULD CORNER 5 cm - 16 items per box



POLYSEALANT MOULD EXTENSION 20 cm - 8 items per box



POLYSEALANT MOULD EXTENSION 7,5 cm - 16 items per box



POLYSEALANT SYSTEM

POSSIBLE POLYSEALANT MOULD COMBINATIONS



4 x POLYSEALANT MOULD CORNER 5 cm +
8 x POLYSEALANT MOULD EXTENSION 20 cm



2 x POLYSEALANT MOULD Ø 15 cm +
2 x POLYSEALANT MOULD EXTENSION 20 cm

PRIMER P

PRIMER P is a transparent solvent-based one-component adhesion promoter, suitable for the adhesion and functionality of the POLYSEALANT SYSTEM on FPO/TPO synthetic waterproofing membranes; it is made according to an exclusive formula developed in the MAPEI research laboratories.

TECHNICAL CHARACTERISTICS

Appearance	Transparent liquid
Colour	Straw coloured
Density (g/cm ³)	0.87
Dry residue (%)	5
Brookfield viscosity at +23 °C - 50% RH (mPa s)	17 (rotor 1 - RPM 50)
Shelf life	12 months in original unopened packaging
Hazard classification according to directive 1999/45/EC	Harmful, flammable. Before use, refer to the paragraph "Safety instructions for preparation and application" and the instructions provided on the packaging and on the safety data sheet.
Customs code	3909 5090
Permitted application temperature	From +5 °C to +35 °C
Dust dry at +23 °C	20 minutes

SPECIFIC APPLICATION INFORMATION

All the surfaces to be treated/sealed must be dry, solid, free from dust and loose parts, free from oil, grease, wax, old paint and rust. Do not apply PRIMER P at temperatures lower than +5 °C or higher than +35 °C.

Do not apply on wet or damp surfaces.

Not suitable for application in contact with bitumen surfaces.

SAFETY INSTRUCTIONS FOR PREPARATION AND APPLICATION

PRIMER P is harmful if inhaled and in contact with the skin and can also cause irritation and allergies in sensitive subjects.

During the preparation and application of the product, it is recommended to use protective clothing, gloves, safety goggles and to protect the respiratory tracts.

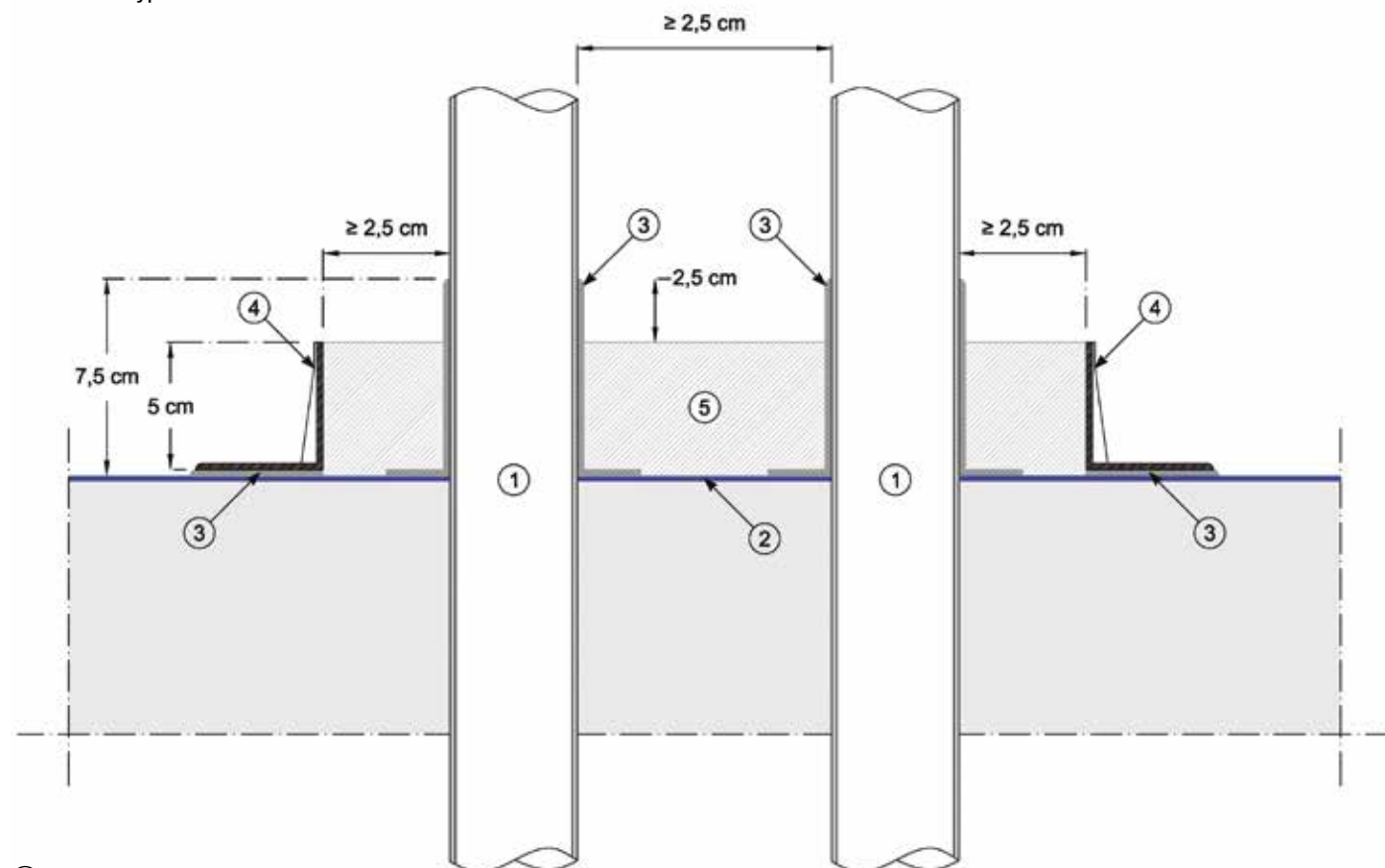
Work in a ventilated environment. PRIMER P is flammable: keep it away from flames and sparks; do not smoke.

In the event of accidents seek medical advice.

For further and complete information on the safe use of products, it is recommended to refer to the latest version of the Safety Data Sheet available on the website: www.mapei.it.

APPLICATION INSTRUCTIONS

FIGURE 1 - Typical



- ① Penetrations
- ② Waterproof roof system
- ③ POLYSEALANT CARTRIDGE adhesive
- ④ POLYSEALANT MOULD formwork
- ⑤ Self-levelling POLYSEALANT 1K

FIGURE 2 - Preparing the surfaces



To guarantee correct adhesion, remove all products previously applied and contaminants or release agents such as sealants, mastics, asphalts, painted, cement residues, gravel, dirt, dust, excess grit etc. from the penetrations and from the waterproofing membrane using a metal brush or another method suitable for the purpose.

FIGURE 3 - Positioning of the formwork



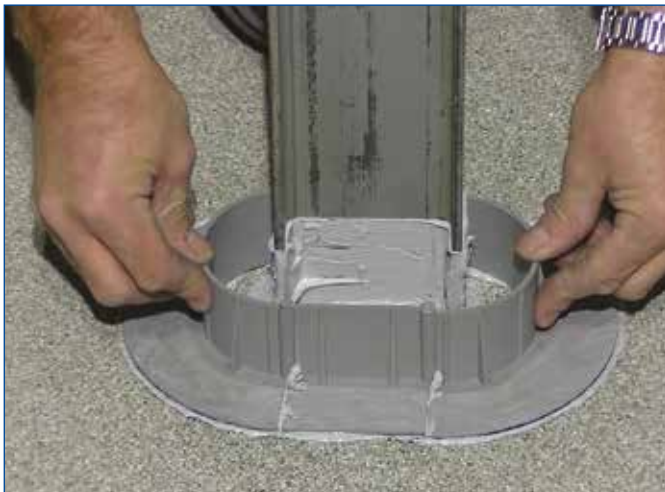
Position the POLYSEALANT MOULD formwork around the penetration in the suitable shape. Use a pen/pencil/felt tip to draw around the perimeter of the POLYSEALANT MOULD, then remove it to allow the application of the adhesive sealant POLYSEALANT CARTRIDGE. Take care to ensure that the formwork has the suitable measurements to guarantee the correct filling spaces and distances of at least 2.5 cm, as indicated in figure 1 TYPICAL SECTION.

FIGURE 4 - Application of the POLYSEALANT CARTRIDGE adhesive sealant



Seal the base of each penetration with the POLYSEALANT CARTRIDGE, apply the product to the surface of the penetration up to a height of 7.5 cm, i.e. 2.5 cm above the top of the formwork (formwork h 5 cm). Distribute the adhesive sealant POLYSEALANT CARTRIDGE uniformly with a spatula and/or a paintbrush until the penetration is completely covered. Apply the adhesive sealant POLYSEALANT CARTRIDGE under the POLYSEALANT MOULD formwork with 2 parallel strips across the whole surface. Refer to the indications of figure 1 TYPICAL SECTION.

FIGURE 5 - Gluing the POLYSEALANT MOULD formwork



Position the POLYSEALANT MOULD formwork on the surface of the roof as indicated in figure 3, then join the pieces until they are completely positioned and closed. Press until the POLYSEALANT CARTRIDGE adhesive sealant seeps out from the edge of the formwork and the related joints. If necessary, smooth the seam of mastic.

POLYSEALANT SYSTEM

FIGURE 6 - Filling the POLYSEALANT MOULD formwork with POLYSEALANT 1K



Pour the POLYSEALANT 1K sealant until it totally fills the formwork, POLYSEALANT MOULD, as indicated in figure 1 TYPICAL SECTION.

APPLICATIONS ON SMOOTH OR SAND SURFACED BITUMEN MEMBRANES

FIGURE 7 - Application of patch of mineral membrane



To apply the POLYSEALANT SYSTEM on smooth polymer bitumen membranes (not mineral finished), a suitable support for adhesion must be provided by applying a patch of mineral finished polymer bitumen membrane onto the surface. Apply the patch of membrane to a surface that is 10 cm larger than the dimensions of the POLYSEALANT MOULD formwork, in order to adhere well to the penetration. Then follow the application procedures indicated by figure 2 to figure 6 of the application instructions.

APPLICATIONS ON FLEXIBLE POLYOLEFIN FPO/TPO MEMBRANES

FIGURE 8 - Application of PRIMER



For the application of the POLYSEALANT SYSTEM on flexible polyolefin FPO/TPO waterproofing membranes, a suitable support for adhesion must be provided by preparing the surface of FPO/TPO membrane with the specific primer PRIMER P.

Apply PRIMER P to an area 2.5 cm larger than the size of the POLYSEALANT MOULD formwork. After the primer has dried, follow the application procedures indicated by figure 2 to figure 6 of the application instructions.

FURTHER APPLICATION INSTRUCTIONS

Storage

The components of the POLYSEALANT SYSTEM must be stored in a dry place, protected from atmospheric agents and temperature changes, at a temperature comprised between +5 °C and +20 °C.

Store the system inside the building and take it onto the roof prior to application.

Application conditions

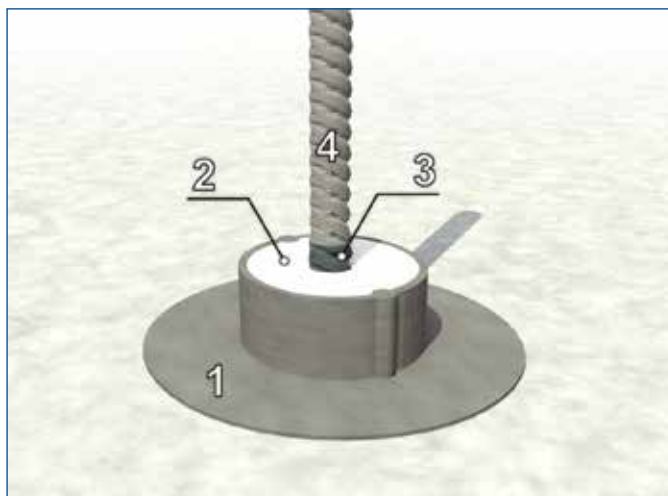
The POLYSEALANT SYSTEM must be applied in compliance with the instructions and recommendations provided in this manual, using all the specified products.

POLYSEALANT SYSTEM adheres and seals all clean, intact and dry surfaces, therefore prior to application all materials and contaminants and release agents must be removed, such as dust, dirt, grease, oil, sealants, mastics, asphalts, paints, cement residues, gravel, excess grit, etc., with a metal brush or another suitable method.

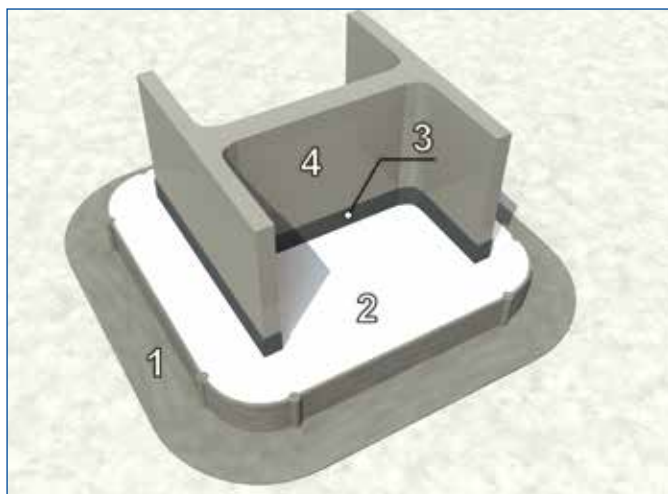
The preparation surface of the penetration must extend to a height of 7.5 cm, i.e. 2.5 cm above the top of the formwork (formwork h 5 cm).

Do not apply POLYSEALANT SYSTEM on damp or wet surfaces. Do not apply if rain or frost is forecast or if there is a risk of condensation. Do not apply at temperatures lower than +5 °C or higher than +30 °C.

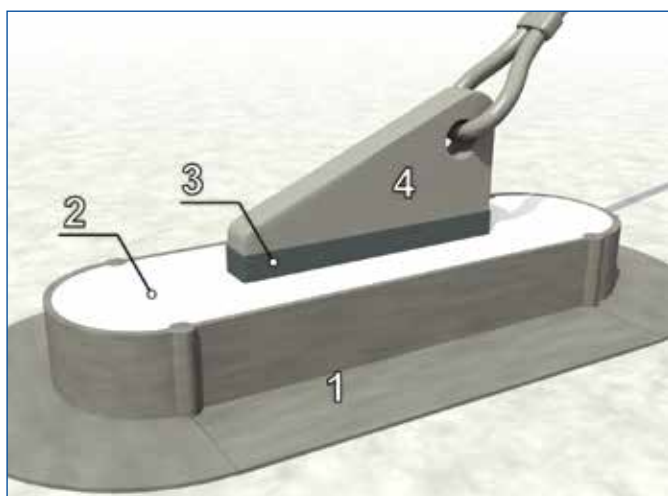
APPLICATION EXAMPLES



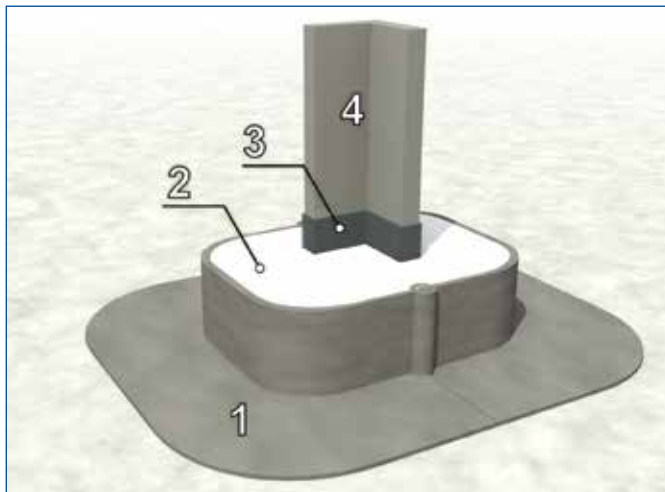
- ① Formwork - POLYSEALANT MOULD
- ② Sealant - POLYSEALANT 1K
- ③ Adhesive - POLYSEALANT CARTRIDGE
- ④ Penetration - e.g. threaded bar



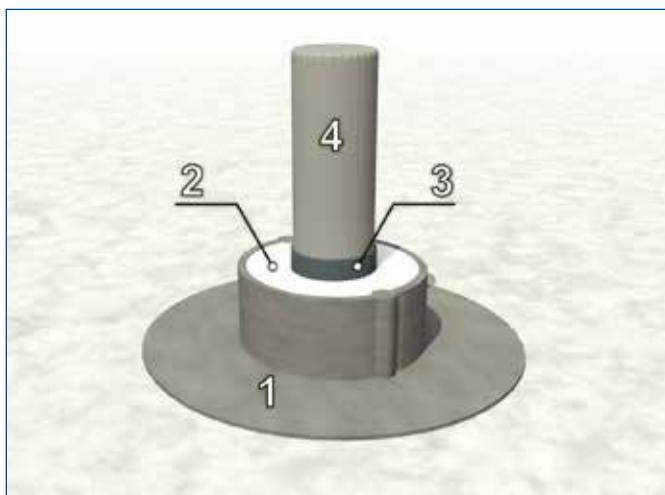
- ① Formwork - POLYSEALANT MOULD
- ② Sealant - POLYSEALANT 1K
- ③ Adhesive - POLYSEALANT CARTRIDGE
- ④ Penetration - e.g. steel post



- ① Formwork - POLYSEALANT MOULD
- ② Sealant - POLYSEALANT 1K
- ③ Adhesive - POLYSEALANT CARTRIDGE
- ④ Penetration - e.g. tie rod anchorage



- ① Formwork - POLYSEALANT MOULD
- ② Sealant - POLYSEALANT 1K
- ③ Adhesive - POLYSEALANT CARTRIDGE
- ④ Penetration - e.g. support for services, poles



- ① Formwork - POLYSEALANT MOULD
- ② Sealant - POLYSEALANT 1K
- ③ Adhesive - POLYSEALANT CARTRIDGE
- ④ Penetration - e.g. lifeline anchorage, pipe connections

SAFETY REGULATIONS

See safety data sheet

The information and instructions provided above are based on our best experience but are still to be considered purely indicative and must be confirmed by numerous practical applications; therefore, before using the product, it is essential to establish whether it is suitable or not for the intended use and, however, the user accepts all liability deriving from its use.

Anyone intending to use POLYSEALANT SYSTEM must ensure that it is suitable for the correct use and application. The installer has sole liability for the installation of the product and any consequence deriving therefrom. Always refer to the latest updated version of the technical data sheet available on www.polyglass.com.

The POLYSEALANT SYSTEM warranty relates to the compliance of the system to the technical requirements specified in the manual. The guarantee relating to the waterproofing and durability of the product, considering the numerous variables at stake, remains the exclusive liability of the designer or installer.

If you have any queries, please contact Polyglass SpA technical service.

In line with the continuous product development policy, POLYGLASS SPA reserves the right to make any required changes without prior notice.

PRODUCT FOR PROFESSIONAL USE

The instructions and technical details contained in this technical data sheet are based on our best knowledge and experience. Anyone intending to use POLYSEALANT SYSTEM must ensure that it is suitable for the correct use and application.

The installer has sole liability for the installation of the product and any consequence deriving therefrom. Always refer to the latest updated version of the technical data sheet available on the website: www.polyglass.com

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POLYGLASS SPA
Registered Office: Viale Jenner, 4 - 20159 Milan - Italy
Head Office: Via Giorgio Squinzi, 2 - 31047 Ponte di Piave (TV) - Italy
Tel. +39 04227547 - Fax +39 0422854118
www.polyglass.com - info@polyglass.it

