

Planning documents Waterproofing system for waterproof-concrete joints Triflex JWS



Applications



The waterproof-concrete construction method has been used in a range of practical applications for decades. In addition to underground car parks, waterproof-concrete is also used to build roofs and components that are in contact with soil – often including subsequent greening. Although this construction method has proven effective, damage can still often be seen today at recurring weak points, which include the construction and settlement joints of the individual components as well as the penetrations.

Triflex JWS is a fleece-reinforced waterproofing system for concrete joints, and is used specifically in new builds and in the refurbishment of white tanks. The system design consisting of high-quality PMMA resins is resistant to hydrolysis and roots and rhizomes in accordance with FLL specifications, and can also be used in areas in contact with soil.

Triflex has more than 45 years' experience of using durable liquid-applied waterproofing and coating systems in the world of building refurbishment. Triflex JWS is a system solution specially developed for waterproofing work on white tanks, and has a General Building Supervisory Authority Test Certificate.

Advantages at a glance

Waterproof down to the smallest detail

The cured resin forms a seamless and joint-free surface. Even complicated details such as door sills and cross joints can be easily and homogeneously waterproofed using liquid application techniques.

Short processing times

The liquid-applied Triflex JWS system has particularly rapid curing times. Primer and waterproofing resin can be recoated after just 45 minutes. The system is resistant straight after the final step.

Durable system build-up

Triflex JWS has excellent mechanical and chemical stability. The system is hydrolysis-resistant and alkali-resistant. It also fully bonds to the substrate preventing the underflow of rainwater. Faulty joint tapes can be easily waterproofed from the top sides in refurbishment projects.

Secure joints for complex geometries

White tanks require that simple, monolithic constructions are chosen, and when these are not to the client's taste, then installing joint tapes correctly can often prove difficult. If further, complex construction then takes place on top of the substructure, then the water-tightness of the joints must be guaranteed in the long term.

Thanks to the liquid waterproofing application, reliable protection is ensured down to the smallest detail, allowing for the uniform waterproofing of all types of details and joints, whether in compact spaces or in unusual configurations. The full-surface substrate adhesion prevents any underflow of the waterproofing.







Suitable for use in new builds and refurbishments

waterproofing and protective layer are combined into one single system. The low build-up height of just a few millimetres means that no special structures need to be developed for the construction. The material simply adapts to the contours like a second skin.

Certified reliability

The Triflex ProDetail/ProTect waterproofing resins used in the Triflex JWS system have a General Building Supervisory Authority Test Certificate (abP). The General Building Supervisory Authority Test Certificate applies to the manufacture and use of the Triflex JWS strip-shaped waterproofing system, variants 1 and 2. The waterproofing of expansion joints complies with VV TB NRW (North Rhine-Westphalia Technical Building Regulations) of 15/06/2021 and M VV TB, consec. no. C 3.30 (joints and transitions) for waterproof concrete with a high water penetration resistance in the area in contact with soil, according to the test principles PG-ÜBB, Part 2 "Waterproofing for expansion joints". The system is also resistant to roots and rhizomes as per FLL specifications, and is suitable for use in water-exchange zones in usage class A, wear classes 1 and 2 as per the German Directive on Watertight Concrete Structures (WU Directive).





And this is how it's done...



1. The concrete substrate is ground in order to remove the cement slurry.



2. Joint areas are primed with Triflex Cryl Primer 276.



3. The fitted PE round sealing band is taped with Triflex duct tape.



4. The Triflex ProDetail waterproofing resin is filled ...



5. ... and mixed with Triflex Catalyst.



6. A sufficient amount of Triflex ProDetail is applied, ...



7. ...the Triflex Special Fleece is laid, ensuring that there are no air bubbles ...



8. ... and covered wet-on-wet with Triflex ProDetail.



9. A protective later of Triflex ProDetail is then applied.



10. After 3 hours, further construction can be carried out on a protective mat.





Compatible system components

All the Triflex products mentioned in this system are carefully coordinated on the basis of laboratory testing and years of experience. This standard of quality ensures optimum results during both application and use.

System description

Properties

- Fully reinforced waterproofing system with a polymethyl methacrylate (PMMA) base for waterproofing construction, controlled crack, expansion and expansion joints on waterproof-concrete components.
- Hydrolysis-resistant
- Seamless
- Cold-applied
- Fast-curing
- Flexible in low temperatures
- Excellent adhesion properties on a multitude of substrates
- Root and rhizome-resistant in accordance with FLL
- Extremely weather-resistant (UV, IR, etc.)
- Elastic and crack-bridging
- Joint waterproofing on the side facing the water
- Vapour-permeable

Determination of construction type

Resistant to all chemicals naturally present in soil and rainwater

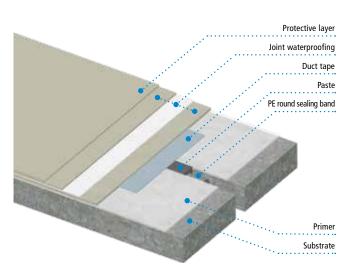
- Resistant to sparks and radiant heat (DIN 4102)
- ETA rating with CE marking
- General Building Supervisory Authority Test Certificate as per VV TB NRW of 15/06/2021 and M VV TB, consec. no. C 3.30 (joints and transitions) for waterproof concrete with a high water penetration resistance in the area in contact with soil, according to the test principles PG-ÜBB, Part 2 "Waterproofing for expansion joints".
- The waterproofing system is suitable for use in water-exchange zones in usage class A, load classes 1 and 2 in accordance with the German Directive on Watertight Concrete Structures (WU Directive).

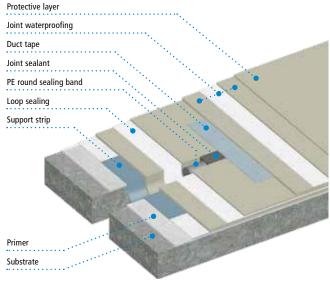
| | Triflex JWS, version 1 | Triflex JWS, version 2 |
|----------------------------|---|---------------------------------------|
| Joint type | Controlled crack joint, construction joint, expansion joint | Expansion joint |
| Joint width | < 30 mm | ≥ 25 mm |
| Max. resulting deformation | V _r = 22.4 mm * | V _r = 26.9 mm * |
| Max water process | Permissible: 0.3 bar/3 m water column | Permissible: 0.4 bar/4 m water column |
| Max. water pressure | Tested: 1.5 bar/15 m water column | Tested: 2.0 bar/20 m water column |

* With the max. resultant deformations, the test setups and their results must be observed based on the associated General Building Supervisory Authority Test Certificate (AbP). These form the basis of the values reached. Changes to the geometry, the uncoupling zones and the loop depths can cause the maximum resulting deformation values to be higher or lower.

System build-up, variant 1

System build-up, variant 2





System description

System components

Primer

Triflex Primer for sealing the substrate and ensuring substrate adhesion.

Duct tape

Triflex duct tape for defining the no-adhesion area.

Joint waterproofing

Triflex waterproofing membrane, fully reinforced with a polyester Triflex Special Fleece.

Protective layer

Waterproofing protective layer.

Substrate

The suitability of the specific substrate should always be tested on a case-bycase basis. The substrate must be clean, dry and free of cement bloom, dust, oil, grease and other adhesion-inhibiting substances.

Moisture: When carrying out coating work, the substrate moisture must not exceed 6 wt%. Ensure that structural measures are taken to prevent moisture penetration of the coating from underneath.

Dew point: During application, the surface temperature must be at least 3 °C above the dew point temperature. Below this temperature, a separating film of moisture can form on the surface.

Hardness: Mineral substrates should usually have reached the required standard strength in relation to the building project after 28 days. Adhesion: The following tensile strengths must be verified on pretreated test surfaces:

Concrete: on average, at least 1.5 $\rm N/mm^2,$ individual value not less than 1.0 $\rm N/mm^2.$

Substrate pre-treatment

| Substrate | Pre-treatment | Primer |
|---|---|-------------------------------------|
| Aluminium ^(A) | Abrade with Triflex Cleaner | Triflex Metal Primer ^(B) |
| Asphalt | Grinding, scarifying or dust-free shotblasting | Triflex Cryl Primer 222 |
| Composite thermal insulation systems ^(A) | Remove any loose material | Triflex Pox R 100 |
| Concrete | Grinding, scarifying or dust-free shotblasting | Triflex Cryl Primer 276 |
| Copper ^(A) | Abrade with Triflex Cleaner | Triflex Metal Primer ^(B) |
| EPDM waterproofing sheeting | Roughen surface and test adhesive strength and compatibility | Triflex Primer 610 |
| Epoxy resin coating | Roughen surface and test adhesive strength and compatibility | No primer |
| FRP light shaft | Abrade with Triflex Cleaner | No primer |
| Glass ^(A) | Abrade with Triflex Glass Cleaner, adhesive strength test | Triflex Glass Primer |
| Hot bitumen coating | Adhesive strength test | Triflex Cryl Primer 222 |
| Mortar, resin-modified | Grinding or dust-free shot-blasting; adhesive strength and compatibility test | Triflex Pox R 100 |
| Paint | Completely grind off | See substrate |
| Plaster/masonry ^(A) | Remove any loose material | Triflex Cryl Primer 276 |
| Polymer bitumen sheeting (PYE) mod. (SBS) | Remove any loose material | No primer |
| Polymer bitumen sheeting (PYP) mod. (APP) | Remove any loose material, adhesive strength test | Triflex Cryl Primer 222 |
| PU coating | Roughen surface and test adhesive strength and compatibility | No primer |
| PVC mouldings, rigid ^(A) | Abrade with Triflex Cleaner, roughen surface | No primer |
| Screeds | Grinding or dust-free shot-blasting | Triflex Cryl Primer 276 |
| Stainless steel ^(A) | Abrade with Triflex Cleaner | Triflex Metal Primer ^(B) |
| Steel, galvanised | Abrade with Triflex Cleaner | Triflex Metal Primer ^(B) |
| Tiles | Completely remove | Triflex Cryl Primer 276 |
| Wood ^(A) | Remove any paint | Triflex Cryl Primer 276 |
| Zinc ^(A) | Abrade with Triflex Cleaner | Triflex Metal Primer ^(B) |

 (A) Only areas not subject to high mechanical stress, e.g., details and joints.
 (B) Alternative to priming: Abrade with Triflex Cleaner and roughen surface. Information on other substrates is available on request (technik@triflex.de).

Important:

Adhesion must always be tested on the specific substrate!

System description

Priming

Triflex Cryl Primer 222

Apply evenly and cross-coat using a Triflex Universal Roller. Consumption: at least 0.40 kg/m². Can be recoated after approx. 45 mins.

Triflex Cryl Primer 276

Apply evenly and cross-coat using a Triflex Universal Roller. Consumption: at least 0.40 kg/m². Can be recoated after approx. 45 mins.

Triflex Glass Primer

Wipe on GP evenly with a cleaning cloth. Consumption: approx. 0.05 l/m² Can be recoated after approx. 15 mins. to max. 3 hrs.

Triflex Metal Primer

Apply a film with a short-pile roller (e.g. MP roller) or alternatively, apply a film with a spray can. Consumption: approx. 0.15 l/m².

Can be recoated after approx. 60 mins.

Triflex Pox R 100

Apply evenly and cross-coat using a Triflex Universal Roller. Dress the fresh primer with a surplus of quartz sand. Consumption of Triflex Pox R 100: at least 0.30 kg/m², Consumption of quartz sand 0.2–0.6 mm: at least 2.00 kg/m². Can be recoated after approx. 12 hr.

Triflex Primer 610

Apply evenly with a brush or roller. Volume: approx. 40 to 80 g/m². Can be recoated after approx. 20 mins.

Important:

The primer must be applied approximately 2 cm above each area being waterproofed in order to prevent moisture from running behind in the transition area. This means that the primer is visible on both sides along the entire length.

Repairing

Triflex Cryl Paste

Paste for filling in shrinkage cracks, smaller areas of damage and for levelling out uneven areas. Consumption: at least 1.40 kg/m² per mm layer thickness Can be recoated after approx. 1 hr.

In case of surface roughness $R_t > 10$ mm:

Triflex Cryl RS 240

Mortar for repairing mineral substrates. Consumption: at least 2.20 kg/m² per mm layer thickness. Can be recoated after approx. 45 mins.

Variation 1: Controlled crack joint, construction joint, expansion joint

1. PE round sealing band

Fit a closed-cell PE round sealing band (d = joint width +25 %) if necessary in order to seal the joint.

2. Triflex Cryl Paste

Insert correctly into the joint. Consumption: approx. 1.40 kg/m² per mm layer thickness. Can be recoated after approx. 1 hr.

3. Triflex duct tape

Attach to the centre of the joint to define the no-adhesion area. Width 10 cm.

Application is wet-on-wet: 4. Triflex ProTect/Triflex ProDetail

Apply a width of 35 cm with a radiator roller. Consumption: at least 0.70 kg/m.

5. Triflex Special Fleece

Insert a 35 cm wide strip, making sure there are no air bubbles. Overlap the ends of the fleece by at least 5 cm.

6. Triflex ProTect/Triflex ProDetail

Apply until the Triflex Special Fleece is fully saturated. Consumption: at least 0.35 kg/m.

Can be recoated after approx. 45 mins.

Joint waterproofing protective layer:

7. Triflex ProTect/Triflex ProDetail

Apply as a protective layer.

Consumption: at least 0.55 kg/m. Total consumption of Triflex ProTect / Triflex ProDetail: at least 1.60 kg/m. Resistant after approx. 3 hrs.

For dimensions, see JWS system drawings.

Important:

- When working in a vertical area, it is recommended to apply Triflex ProDetail. Otherwise, Triflex Liquid Thixo should be added to Triflex ProTect at a maximum of 1 wt. % in order to make the finish thixotropic.
- 2. The fleece widths should be determined based on requirements. A fleece reinforcement junction of at least 10 cm should be used on the components. It may be necessary to work with two different fleece widths.

System description

Variation 2: Expansion joint

1. Triflex Cryl Paste

Apply a width of approx. 4 cm to both sides of the joint to bond the Triflex Support Strip.

Triflex Support Strip Lay in the joint as a loop. There must be a loop depth of at least 2 cm.

Can be recoated after approx. 1 hr. The subsequent application is wet-on-wet.

3. Triflex ProTect/Triflex ProDetail

Apply to both sides of the joint and on the support strip using a radiator roller.

Consumption: at least 0.70 kg/m.

4. Triflex Special Fleece

Lay a 35 cm wide strip as the loop, making sure there are no air bubbles. There must be a connection width of at least 10 cm. In corner areas, the Triflex Special Fleece for inner and outer corners must be used.

5. Triflex ProTect/Triflex ProDetail

Apply until the Triflex Special Fleece is fully saturated. Consumption: at least 0.40 kg/m.

Total consumption of Triflex ProTect / Triflex ProDetail: at least 1.10 kg/m. Can be recoated after approx. 45 mins.

6. PE round sealing band, closed-cell

Place in the joint; see system drawing.

7. Triflex ProTect / Triflex ProDetail / Triflex Cryl Paste Fill or seal the joint so it is flush with the surface. Consumption: approx. 2.20 kg/m per mm layer thickness.

Can be recoated after approx. 45 mins. 8. Triflex duct tape

Attach on the centre of the joint to define the no-adhesion area. Joint width (1 x 10 cm or 2 x 5 cm duct tape)

The subsequent application is wet-on-wet: 9. Triflex ProTect/Triflex ProDetail

Apply a width of 36 cm with a radiator roller. Consumption: at least 0.70 kg/m.

10.Triflex Special Fleece

Insert a 35 cm wide strip, making sure there are no air bubbles. Overlap the ends of the fleece by at least 5 cm.

11.Triflex ProTect / Triflex ProDetail

Apply until the Triflex Special Fleece is fully saturated. Consumption: at least 0.40 kg/m. Joint waterproofing protective layer:

12.Triflex ProTect / Triflex ProDetail

Apply with a radiator roller. Consumption: at least 0.55 kg/m. Total volume of Triflex ProTect / Triflex ProDetail: at least 1.65 kg/m (without joint filling). Resistant after approx. 3 hrs. For dimensions, see JWS system drawings.

Important:

When working in a vertical area, it is recommended to apply Triflex ProDetail. Otherwise, Triflex Liquid Thixo should be added to Triflex ProTect at a maximum of 1 wt. % in order to make the finish thixotropic.

Protective measures

It is recommended that the waterproofing be protected from mechanical damage in the event of subsequent work or build-ups. This can be achieved with a protective fleece or a loosely laid protective mat.

Finishings

The system does not require finishing. Details can be finished for aesthetic purposes.

Triflex Cryl Finish 205

Cross-coat evenly using a Triflex Universal Roller. Consumption: at least 0.50 kg/m². Rainproof after approx. 30 min.

Work interruptions

If work is interrupted for more than 12 hrs., or if soiled by rain etc., the intersection must be activated with Triflex Cleaner. Airing time at least 20 mins. Transitions to subsequent waterproofing must overlap (including Triflex Special Fleece) by a minimum of 10 cm. This also applies to junctions, transitions and detail solutions with Triflex ProDetail. The finish must be applied within 24 hrs. If this application is delayed for any reason, the surface to be finished must be pre-treated with Triflex Cleaner.

Product information

For information on applications, conditions for use and instructions for mixing, see product information (request if necessary):

Triflex Cleaner Triflex Cryl Finish 205 Triflex Cryl Primer 222 Triflex Cryl Primer 276 Triflex Cryl RS 240 Triflex Cryl Paste Triflex Glass Primer Triflex Glass Primer Triflex Liquid Thixo Triflex Metal Primer Triflex Pox R 100 Triflex Primer 610 Triflex ProDetail Triflex ProDetail Triflex ProTect Triflex Special Fleece Triflex Support Strip X

System description

Quality standard

All Triflex products are manufactured in accordance with the standards defined in ISO 9001. To ensure quality of workmanship, Triflex products are only installed by fully trained and qualified specialist contractors.

Gradient / Evenness

Before applying the pattern or decoration, and during application, always ensure the correct gradient and evenness of the substrate. Any corrections required must be taken into account during this work.

Dimensional tolerances

When carrying out the work, always ensure compliance with the permissible tolerances for building construction (DIN 18202, Table 3, line 4).

Safety tips / Accident prevention

Read the safety data sheets before using the products.

Required consumptions / Waiting times

The volumes required apply only to smooth, even substrates with a maximum roughness of $R_t\,=\,0.5\,$ mm.

Special allowance must be made for unevenness, roughness and porosity. Specified flash times and waiting times apply to a substrate and ambient temperature of +20 °C.

Information about tools

The Triflex tools mentioned in the system description are a guideline for correct application of the individual functional layers with the respective volumes of product. The use of Triflex tools is not mandatory as long as correct application of the Triflex products is assured.

General notes

The system descriptions, system drawings and product information sheets form the basis for using Triflex products, and it is essential to follow these when planning and carrying out your building project. Any deviation from the technical information provided by Triflex GmbH & Co. KG that is current at the time the work is carried out may invalidate the warranty. Any project-related deviations require written approval from Triflex.

All the information is based on general regulations, directives and other technical rules. The general regulations applicable in the particular country of use must be respected.

Since the parameters can vary from case to case, the contractor is required to test the suitability, e.g. of the substrate.

Non-Triflex products must not be used in combination with Triflex systems. Triflex reserves the right to make modifications in the interest of technical enhancement or optimisation of Triflex products.

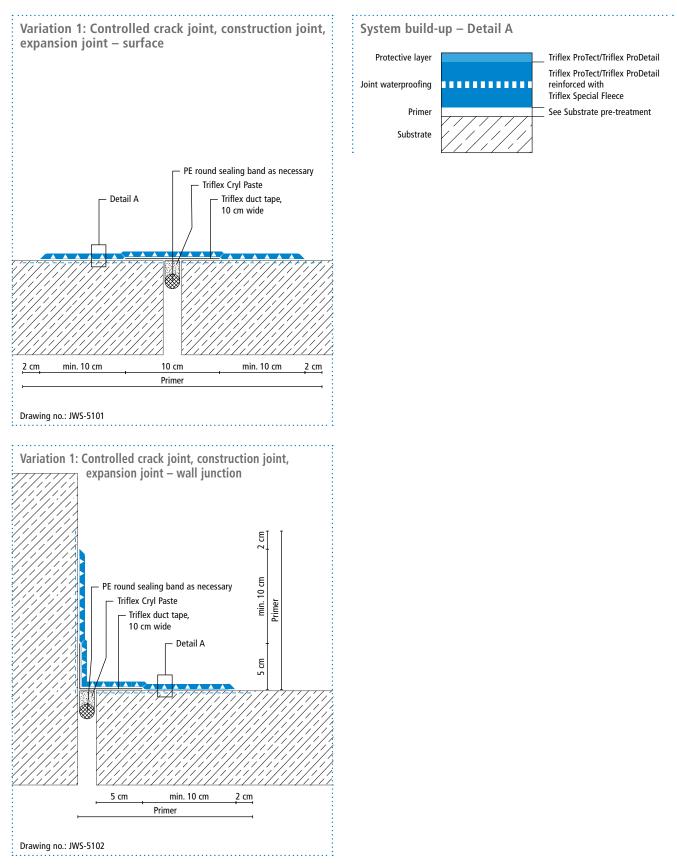
Tender texts

Please visit the Download section of the Triflex website at www.triflex.com to obtain the current standard specifications, which are available in a range of different file formats. Alternatively, visit the website www.ausschreiben.de or www.heinze.de.

CAD drawings

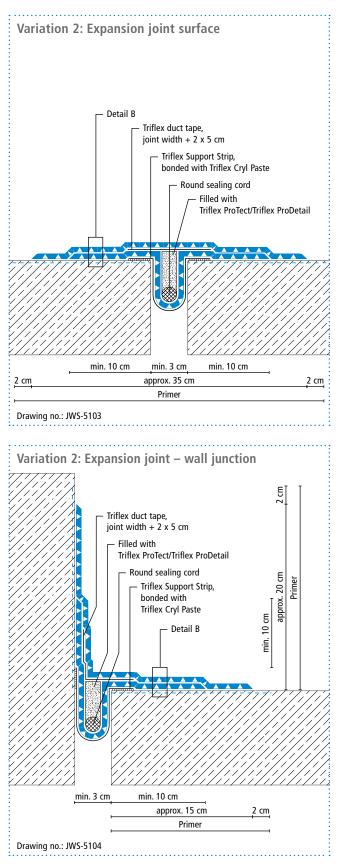
All CAD system drawings can be downloaded free of charge from the Download section of the Triflex website www.triflex.com. Contact us at technik@triflex.de to request further true-to-scale CAD drawings.

System drawings



Height differences where the fleece overlaps are exaggerated.

System drawings



System build-up - Detail B Protective layer Triflex ProTect/Triflex ProDetail Triflex ProTect/Triflex ProDetail, Joint waterproofing reinforced with Triflex Special Fleece Triflex ProTect/Triflex ProDetail Loop sealing reinforced with **Triflex Special Fleece** See Substrate pre-treatment Primer Substrate

Height differences where the fleece overlaps are exaggerated.

Triflex JWS



Certifications and test data

| | Ausstelldatum: Seltungsdauer: | 12. September 2023 25. August 2028 | Allgemeines ba | uaufsichtliches Prüfzeugnis | MFPA Leipzig GmbH Generator Di Mannalazzing unt Polispaneta Ila |
|----|--------------------------------------|--|--|-----------------------------|--|
| | | Karlstraße 59 32423 Minden | | | and the local division of the local division |
| | ntsprechend: Intragsteller: | Verwaltungsvorschrift Technische Baubestimmung NRW (VV TB NRW) vom 15. Juni 2021 (MBL NF 2021 Nr. 18 vom 30.6.2021, S.444) und di Teil C 3, lfd. Nr. C 3.30 Triflex GmbH & Co. KG Karlstraße 59 | | | MFPA |
| Ge | legenstand: | Außenliegende streifenförmige Abdichtung für Bewegungsfugen 7//flex JWS, Variante 1 – für Fugen und Übergänge in bzw. auf wasserdicht Bautelien u.s. aus Beton mit hohem Wassereindni widerstand im erüberührten Bereich, die nicht o Produkten C 2:10.2 und C 2:10.3 in Abschnitt C 2: geordnet werden können, | | | |
| | Illgemeines bau Ir. P-SAC 02 / 5. | iaufsichtliches Prüfzeugnis 1 / 23 − 082-1 | Geneticchell für Astansvelle und Hendwargsmerste für den Resenteren informig im Fold i Obersverbunge im Resenungsstellte für Beautetere mensionen und Beautetere Asterfannen zuch Landelda mensionen Statistick | H dawn dan San- maner | |



International

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