

# Triflex

Delivering solutions together.

Planning documents

Waterproofing system for waterproof-concrete joints

## Triflex JWS





# 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 still often occurs at recurring weak points, particularly at the construction and settlement joints of the individual components and at 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 as well as roots and rhizomes in accordance with FLL guidelines. It can also be used in areas in contact with the soil.

Triflex has almost 40 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.

### Secure joints for complex geometries

White tanks require that simple, monolithic constructions are chosen, however if this design is not to the client's taste, installing joint tapes correctly can often prove difficult. If further complex construction then takes place on top of the substructure, the watertightness of the joints must be guaranteed 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 also prevents underflow beneath the waterproofing.



## 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. The primer and waterproofing resins can be recoated after just 45 minutes and the system is resistant immediately after full installation has been completed.

### Durable system design

Triflex JWS has excellent mechanical and chemical stability. The system is hydrolysis and alkali resistant. The systems full-surface bond with the substrate means there is no underflow beneath the waterproofing. Faulty joint tapes can be easily waterproofed from the top sides in refurbishment projects.

### Suitable for use in new builds and refurbishments

The waterproofing and protective layer are combined to create 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 safety

The Triflex ProDetail/ProTect waterproofing resins used in the Triflex JWS system have a General Building Supervisory Authority Test Certificate (abP) in accordance with the Building Regulations List A, Part 2, No. 1.4 – Normally flammable joint waterproofing for concrete components with high water-penetration resistance against pressurised and non-pressurised water and against ground moisture. The tests are based on the testing principles for joint waterproofing (PG-ÜBB): The junctions of structural waterproofing on concrete components with high penetration resistance and in accordance with the specifications in the working group Building Regulations List A, Part 2, No. 1.4 on the assessment of settlement joints. The system is also root and rhizome-resistant in accordance with FLL specifications, and is suitable for use in water-exchange zones in usage class A, wear classes 1 and 2 in accordance with the German Directive on Watertight Concrete Structures (WU Directive).

Waterproofing system for waterproof-concrete joints

# Triflex JWS



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 decanted ...



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 three hours, further construction can be carried out on a protective mat.



## Compatible system components

All the Triflex products mentioned in this system are lab-scale and application coordinated as a result of years of experience. This standard of quality ensures optimum results during both application and use.





Waterproofing system for waterproof-concrete joints

# Triflex JWS

## System description

### Properties

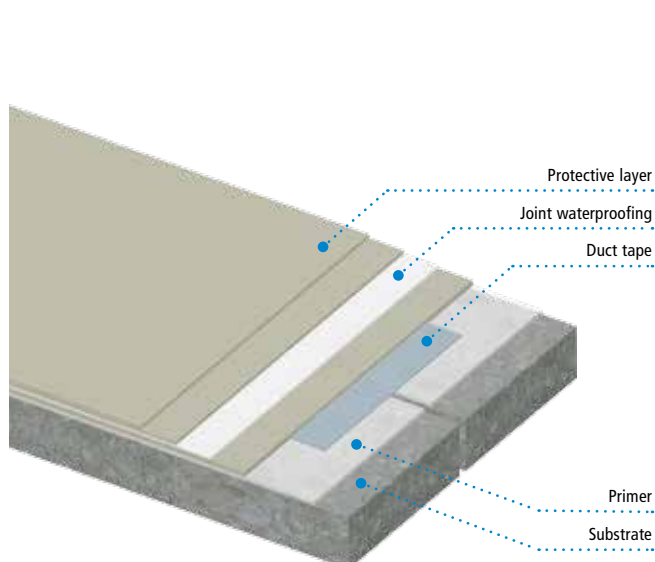
- Fully reinforced waterproofing system with a polymethyl methacrylate (PMMA) base for waterproofing construction, controlled crack, expansion and settlement joints on waterproof-concrete components.
- Hydrolysis-resistant
- Seamless
- Cold-applied
- Fast-curing
- Flexible in low temperatures
- Excellent adhesion properties on a multitude of substrates
- Root and rhizome-resistant in accordance with FLL specifications
- Extremely weather-resistant (UV, IR, etc.)
- Elastomeric and crack-bridging
- Joint waterproofing on the side facing the water
- Vapour-permeable
- Resistant to all chemicals naturally present in soil and rainwater
- Resistant to sparks and radiant heat (DIN 4102)
- ETA certification with CE marking
- General Building Supervisory Authority Test Certificate (AbP) in accordance with the Building Regulations List A, Part 2, No. 1.4 – Normally flammable joint waterproofing for concrete components with high water-penetration resistance against pressurised and non-pressurised water and against ground moisture. The tests are based on the testing principles for joint waterproofing (PG-ÜBB): The junctions of structural waterproofing on concrete components with high penetration resistance and in accordance with the specifications in the working group Building Regulations List A, Part 2, No. 1.4 on the assessment of settlement 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).

### Determination of construction type

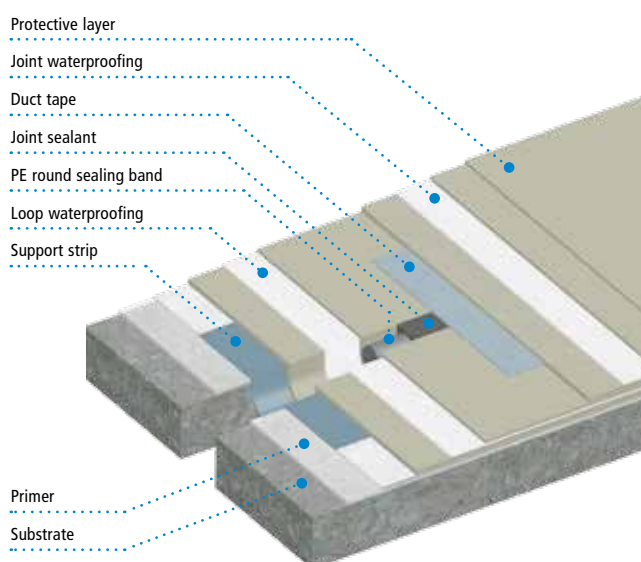
	Triflex JWS, version 1	Triflex JWS, version 2
Joint type	Controlled crack joint, construction joint, settlement joint	Settlement joint
Joint width	< 30 mm	≥ 30 mm
Max. resulting deformation	$D_r = 22,4 \text{ mm}^*$	$D_r = 26,9 \text{ mm}^*$
Max. water pressure	Permissible: 0.3 bar / 3 m water column Tested: 1.5 bar / 15 m water column	Permissible: 0.4 bar / 4 m water column Tested: 2.0 bar / 20 m water column

\* With max. resulting 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 max. resulting deformation values to be higher or lower.

### Triflex JWS, version 1



### Triflex JWS, version 2



# Triflex JWS



## System description

### System design

#### Primer

Triflex Primer for sealing the substrate and ensuring substrate adhesion.

#### Duct tape

Triflex duct tape for defining the gap created by the joint.

#### Joint waterproofing

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

#### Protective layer

Waterproof protective layer.

### Substrate

Substrate suitability should always be checked on a case by case basis. The substrate must be clean, dry and free of cement bloom, dust, oil, grease and other adhesion-reducing dirt.

**Moisture:** When carrying out coating work, the substrate moisture must not exceed 6 % by weight. 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 must be permitted to fully harden for at least 28 days.

**Adhesion:** The following tensile strengths must be verified on pre-treated test surfaces: Concrete, in the centre, at least 1.5 N/mm<sup>2</sup>, individual value not less than 1.0 N/mm<sup>2</sup>.

### Substrate pre-treatment

Substrate	Vorbehandlung	Grundierung
Aluminium <sup>(1)</sup>	Abrade with Triflex Cleaner, roughen surface	No primer <sup>(2)</sup>
Asphalt	Grinding, milling or dust-free shot-blasting	Triflex Cryl Primer 222
Composite thermal insulation systems <sup>(1)</sup>	Remove any loose objects	Triflex Pox R 100
Concrete	Grinding, milling or dust-free shot-blasting	Triflex Cryl Primer 276
Copper <sup>(1)</sup>	Abrade with Triflex Cleaner, roughen surface	No primer <sup>(2)</sup>
EPDM waterproofing sheeting	Roughen surface, adhesive strength and compatibility test	Triflex Primer 610
Epoxy resin coating	Roughen surface, adhesive strength and compatibility test	No primer
FRP light shaft	Abrade with Triflex Cleaner, roughen surface	No primer
Glass <sup>(1)</sup>	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
Paints	Completely grind off	See substrate
Plaster/masonry <sup>(1)</sup>	Roughen surface	Triflex Cryl Primer 276
Polymer bitumen sheeting (PY-E) mod. (SBS)		No primer
Polymer bitumen sheeting (PY-P) mod. (APP)	Adhesive strength test	Triflex Cryl Primer 222
PU coating	Roughen surface, adhesive strength and compatibility test	No primer
PVC moulded components, hard <sup>(1)</sup>	Abrade with Triflex Cleaner, roughen surface	No primer
Screeds	Grinding or dust-free shot-blasting	Triflex Cryl Primer 276
Stainless steel <sup>(1)</sup>	Abrade with Triflex Cleaner, roughen surface	No primer <sup>(2)</sup>
Steel, galvanised	Abrade with Triflex Cleaner, roughen surface	No primer <sup>(2)</sup>
Tiles	Completely remove	Triflex Cryl Primer 276
Wood <sup>(1)</sup>	Completely remove	Triflex Cryl Primer 276
Zinc <sup>(1)</sup>	Abrade with Triflex Cleaner, roughen surface	No primer <sup>(2)</sup>

<sup>(1)</sup> Only in areas not subject to high mechanical stress, e.g., details and flashing.

<sup>(2)</sup> Alternative to roughening: Abrade with Triflex Cleaner, prime with Triflex Metal Primer. Loose rust and blistering rust must first be removed.

Information on other substrates is available on request.

#### Important note:

Adhesion to the substrate must be checked on a case-by-case basis!



Waterproofing system for waterproof-concrete joints

# Triflex JWS

## System description

### Primer

#### Triflex Cryl Primer 222

Apply evenly with a Triflex universal roller.

Volume: at least 0.40 kg/m<sup>2</sup>.

Can be recoated after approx. 45 min.

#### Triflex Cryl Primer 276

Apply evenly with a Triflex universal roller.

Volume: at least 0.40 kg/m<sup>2</sup>.

Can be recoated after approx. 45 min.

#### Triflex Glas Primer

Wipe on GP evenly with a cleaning cloth.

Volume: approx. 50 ml/m<sup>2</sup>.

Can be recoated after approx. 15 min up to max. 3 hrs.

#### Triflex Metal Primer

Spray a thin coat with a spray can, or apply thinly with a short-pile roller.

Volume: approx. 80 ml/m<sup>2</sup>.

Can be recoated after approx. 30 to 60 min.

#### Triflex Pox R 100

Apply evenly using a Triflex universal roller and immediately sand down with plenty of quartz sand.

Volume of Triflex Pox R 100 at least 0.30 kg/m<sup>2</sup>,  
volume of quartz sand 0.2–0.6 mm at least 2.00 kg/m<sup>2</sup>.

Can be recoated after approx. 12 hrs.

#### Triflex Primer 610

Apply evenly with a brush or roller.

Volume: approx. 40 to 80 g/m<sup>2</sup>.

Can be recoated after approx. 20 min.

#### Important note:

The primer should be added approx. 2 cm above the area to be waterproofed in order to prevent water ingress in the transition area. This means that the primer is visible on both sides along the entire length.

### Repairing

#### Triflex Cryl Paste

For filling in shrinkage cracks, smaller areas of damage and unevenness.

Volume: at least 1.40 kg/m<sup>2</sup> per mm layer thickness.

Can be recoated after approx. 1 hr.

#### Triflex Cryl RS 240

For levelling large areas of damage.

Volume: at least 2.20 kg/m<sup>2</sup> per mm layer thickness.

Can be recoated after approx. 45 min.

### Joint waterproofing, version 1

#### Controlled crack joint, construction joint, settlement joint:

##### 1. PE round sealing band

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

##### 2. Triflex Cryl Paste

Insert correctly into the joint.

Volume: approx. 1.40 kg/m<sup>2</sup> per mm layer thickness.

Can be recoated after approx. 1 hr.

##### 3. Triflex duct tape

Attach to the center of the joint to cover the gap.

Width 10 cm.

The subsequent application is wet-on-wet:

##### 4. Triflex ProTect/Triflex ProDetail

Apply a width of 35 cm with a radiator roller.

Volume: at least 0.70 kg/m.

##### 5. Triflex Special Fleece

Lay a 35 cm wide fleece strip, removing any air bubbles.

Overlap the ends of the fleece strip by at least 5 cm.

##### 6. Triflex ProTect/Triflex ProDetail

Apply until the Triflex Special Fleece is fully saturated.

Volume: at least 0.35 kg/m.

Can be recoated after approx. 45 min.

Joint waterproofing protective layer:

##### 7. Triflex ProTect/Triflex ProDetail

Apply as a protective layer.

Volume: at least 0.55 kg/m.

Total volume of Triflex ProTect/Triflex ProDetail: at least 1.60 kg/m.

Resistant after approx. 3 hrs.

For dimensions, see Triflex JWS system drawings.

#### Important note:

1. Triflex ProDetail is recommended for vertical areas. Other areas should be waterproofed by adding Triflex Liquid Thixo to Triflex ProTect at a maximum of 1 wt. % to create a thixotropic finish.
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

### Joint waterproofing, version 2

#### Settlement joint:

##### 1. Triflex Cryl Paste

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

##### 2. 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.

Volume: at least 0.70 kg/m.

##### 4. Triflex Special Fleece

Insert a 35 cm wide fleece strip as a 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.

Volume: at least 0.40 kg/m.

Can be recoated after approx. 45 min.

Total volume of Triflex ProTect/Triflex ProDetail: at least 1.10 kg/m.

##### 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.

Volume approx. 2.20 kg/m pro mm layer thickness.

Can be recoated after approx. 45 min.

##### 8. Triflex duct tape

Attach to the center of the joint to cover the gap.

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.

Volume: at least 0.70 kg/m.

##### 10. Triflex Special Fleece

Lay a 35 cm wide fleece strip, removing any air bubbles.

Overlap the ends of the fleece strip by at least 5 cm.

##### 11. Triflex ProTect/Triflex ProDetail

Apply until the Triflex Special Fleece is fully saturated.

Volume: at least 0.40 kg/m.

Joint waterproofing protective layer.

##### 12. Triflex ProTect/Triflex ProDetail

Apply with a radiator roller.

Volume: 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 Triflex JWS system drawings.

#### Important note:

Triflex ProDetail is recommended for vertical areas. Other areas should be waterproofed by adding Triflex Liquid Thixo to Triflex ProTect at a maximum of 1 wt. % to create a thixotropic finish.

### Protective measures

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

### Finishing

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.

Volume: at least 0.50 kg/m<sup>2</sup>.

Rainproof after approx. 30 min.

### What to do if work is interrupted

If work is interrupted for more than 12 hrs, or if soiled by rain etc., clean with Triflex Cleaner allowing 20 min. airing time. Airing time at least 20 min. 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.

### System components

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 Paste](#)

[Triflex Cryl Primer 222](#)

[Triflex Cryl Primer 276](#)

[Triflex Cryl RS 240](#)

[Triflex Glass Primer](#)

[Triflex Liquid Thixo](#)

[Triflex Metal Primer](#)

[Triflex Pox R 100](#)

[Triflex Primer 610](#)

[Triflex ProDetail](#)

[Triflex ProTect](#)

[Triflex Special Fleece](#)



# Triflex JWS

## System description

### Quality standard

All Triflex products are manufactured in accordance with the standards defined in ISO 9001. To ensure quality is not compromised, Triflex products are only installed by specialist, fully trained and qualified contractors.

### Gradient / Evenness

Before commencing any surfacing work and during the work itself, it is essential to 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 surfacing 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.

### Volumes required / Waiting times

The specified volumes apply only to smooth, even surfaces. Special allowances must be made for unevenness, roughness and porosity. Information regarding airing and waiting times applies to a substrate at an ambient temperature of +20 °C.

### General notes

The basis for the use of Triflex products can be found in the system descriptions, system drawings and product information sheets. It is essential to heed these when planning and carrying out the building project.

Departures from the technical information of Triflex GmbH & Co. KG applicable at the time of work can compromise the guarantee. Any project-related departures are subject to the written authorisation of Triflex.

All data 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 of aspects such as the substrate.

Non-system substances must not be added to Triflex products. Subject to change in the interests of technical advancement or enhancement of Triflex products.

### Tender texts

Please visit the Download section of the Triflex website at [www.triflex.com](http://www.triflex.com) to obtain the current standard specifications for tender, which are available in a range of different file formats.

### CAD drawings

All CAD system drawings can be downloaded free of charge from the Download section of the Triflex website [www.triflex.com](http://www.triflex.com).

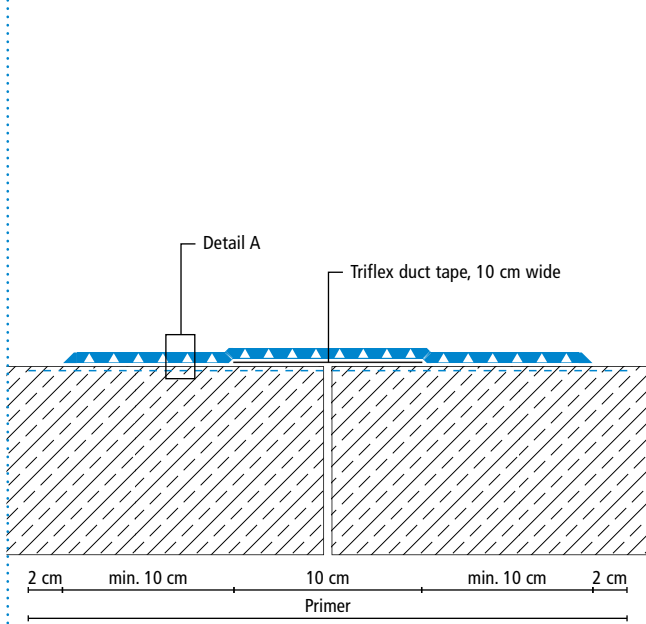


# Triflex JWS



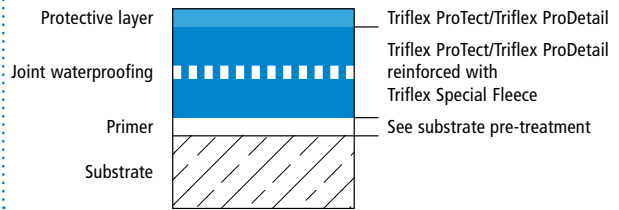
## System drawings

Version 1: Controlled crack joint, construction joint, settlement joint – surface

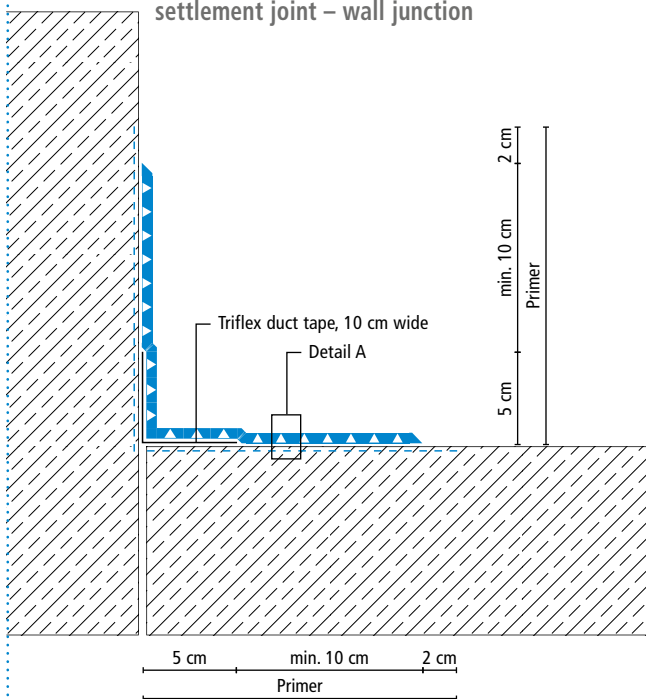


Drawing no.: JWS-5101

System design – Detail A



Version 1: Controlled crack joint, construction joint, settlement joint – wall junction



Drawing no.: JWS-5102

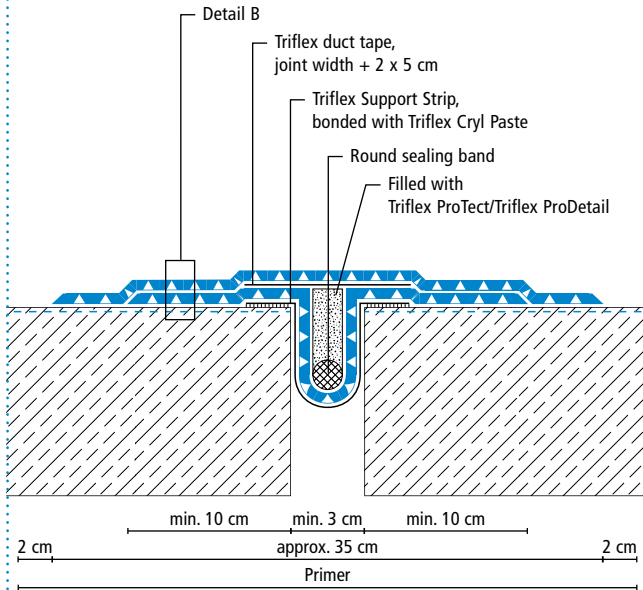
Height differences between fleece overlaps are exaggerated

# Triflex JWS



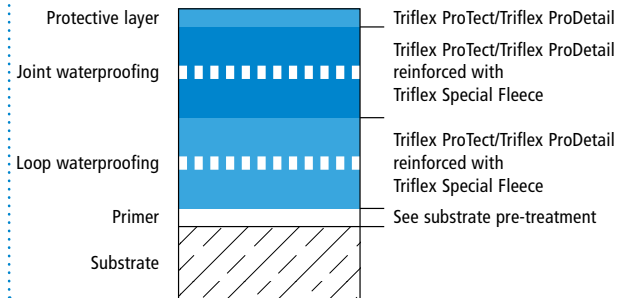
## System drawings

Version 2: Settlement joint surface

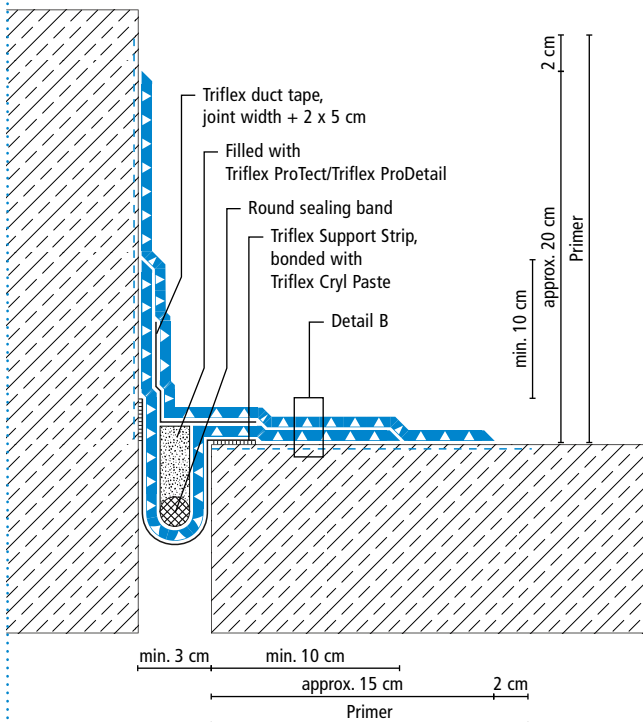


Drawing no.: JWS-5103

System design – Detail B



Version 2: Settlement joint – wall junction



Drawing no.: JWS-5104

Height differences between fleece overlaps are exaggerated

# Triflex JWS

## Test certificates





**MFA Leipzig GmbH**  
 Prof., Überwachungs- und Zertifizierungsstelle für  
 Baustoffe, Bauprodukte und Bausysteme  
 Geschäftsbereich V - Tiefbau  
 Prof. Dr.-Ing. Olaf Selle  
 Arbeitsgruppe 5.1 - Bauwerksabdichtung

### Allgemeines bauaufsichtliches Prüfzeugnis

**Prüfzeugnis Nummer:** P-SAC 02 / 5.1 / 12 - 229-1

**Gegenstand:** *Triflex JWS, Variante 1 -  
 außenliegende Abdichtung von Bewegungsfugen für Bauteile  
 aus Beton mit hohem Wassereindringwiderstand gemäß  
 Bauregelliste A, Teil 2, lfd. Nr. 1.4, Ausgabe 2013/2*

**Antragsteller:** Triflex GmbH & Co. KG  
 Karistraße 59  
 D 32423 Minden

**Ausstellungsdatum:** 26.08.2013

**Geltungsdauer:** 25.08.2018

Dieses allgemeine bauaufsichtliche Prüfzeugnis besteht aus 8 Seiten.



**MFA Leipzig GmbH**  
 Prof., Überwachungs- und Zertifizierungsstelle für  
 Baustoffe, Bauprodukte und Bausysteme  
 Geschäftsbereich V - Tiefbau  
 Prof. Dr.-Ing. Olaf Selle  
 Arbeitsgruppe 5.1 - Bauwerksabdichtung

### Allgemeines bauaufsichtliches Prüfzeugnis

**Prüfzeugnis Nummer:** P-SAC 02 / 5.1 / 13 - 438

**Gegenstand:** *Triflex JWS, Variante 2 -  
 außenliegende Abdichtung von Bewegungsfugen für Bauteile  
 aus Beton mit hohem Wassereindringwiderstand gemäß  
 Bauregelliste A, Teil 2, lfd. Nr. 1.4, Ausgabe 2014/2*

**Antragsteller:** Triflex GmbH & Co. KG  
 Karistraße 59  
 D 32423 Minden

**Ausstellungsdatum:** 12.01.2015

**Geltungsdauer:** 11.01.2020

Dieses allgemeine bauaufsichtliche Prüfzeugnis besteht aus 9 Seiten.

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Es gelten die Allgemeinen Geschäftsbedingungen (AGB) der MFA Leipzig GmbH




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 Nach Landesbauordnung (SAC 02) anerkannte und nach Bauproduktenverordnung (NR 900) notifizierte PUZ-Stelle.

Gesellschaft für Materialprüfung und Prüfingenieur für das Bauwesen Leipzig mbH (MFA Leipzig GmbH)

Stz. Hans-Fliegel-Str. 28 - 04219 Leipzig/Germany  
 Geschäftsführer: Prof. Dr.-Ing. Frank Dötsch  
 Handelsregister: Amtsgericht Leipzig HRB 17718  
 USt-Id.Nr.: DE 812020968  
 Tel.: +49 (0) 341 - 6562-143  
 Fax: +49 (0) 341 - 6562-198

# Triflex

Delivering solutions together.



#### International

Triflex GmbH & Co. KG  
Karlsruhe 59  
32423 Minden | Germany  
Fon +49 571 38780-0  
info@triflex.de  
www.triflex.de