Triflex AWS

Specifications

Construction project: .....

Architect/client: .....

Preliminary remarks:

Work is carried out using products from the Minden-based company Triflex GmbH & Co. KG.

The offer is for the procurement and installation of the Triflex AWS fleece-reinforced waterproofing system under mastic asphalt as per VV TB, Part C, No. C 3.12 (OS 10). The system design has a general building supervisory authority test certificate (abP) as per VV TB, Part C, No. C 3.12 (OS 10).
The system design meets the requirements of class OS 10 as per DIN 18532, Part 6 and the respective valid version of the DBV data sheet for multi-storey car parks and underground car parks.
A test report is available on the positive testing of the resistance of Triflex ProPark and Triflex ProDetail to thermal stress due to mastic asphalt of approx. +250°C.
Moreover, Triflex ProDetail is covered by a European Technical Approval (ETA), issued by the German approval body for non-regulated construction products and types of construction, the Deutsches Institut für Bautechnik (DIBt), and thus meets the requirements of the EU's Construction Products Directive (CE mark) in accordance with ETAG 005 in the highest usage categories.

Compliance with all applicable guidelines is taken into account and required for the different recommended system designs using Triflex products.

Before the contract is awarded, contractors must prove that they have been trained in the application of Triflex products. Otherwise, instruction by a trainer shall be provided on-site.

The quantities contained herein shall be checked on the building site.

Billing shall be based on measurements conducted jointly by the contractor and client.

The waterproofing system must be applied so as to prevent rainwater from penetrating the system structure in the event that work is interrupted.

For disposal of rubble, the cartage and landfill costs shall be included in the individual prices or itemised separately.

Concerns about prior work performed by other contractors shall be communicated to the client in writing immediately, ideally before work begins.

It is recommended that the bidder view the work site prior to submitting a tender.

If alterations or special work not included herein become necessary after work has commenced, detailed notification shall be given before going ahead with such alterations or special work, and the work shall subsequently be billed separately.

Unless explicitly stated otherwise, all work shall be regarded as a comprehensive turnkey service, including the supply of all required materials and ancillary services.

The system build-up must be adapted by the expert planner to meet the project-specific requirements. Detailed tender texts must be created by the planner on his or her own authority. There is no specific project consultation associated with the issue of these draft specifications. The preparation of drafts is a non-obligatory service provided by Triflex. Any legal claims from this service are excluded.

The bases for the implementation of concrete repairs which are relevant to stability, are the rules and directives introduced in the German federal states as Technical Building Regulations as per VV TB, Part A, No. A 1.2.3.2 and VV TB, Part C, No. C 3.12 .

Specifications

The contract comprises the following components:
- Specifications
- System description, system drawings and manufacturer's product information
- DIN 18202 Tolerances for building construction
- The rules and directives introduced in the German federal states as Technical Building Regulations as per VV TB, Part C, No. C 3.12.
- Building code regulations
- Accident prevention regulations
- German Construction Contract Procedures (VOB), Part B

in the versions valid at the time of conclusion of the contract.

System and product characteristics:
- Full-surface fleece-reinforced waterproofing system based entirely on PMMA resin (polymethyl methacrylate)
- Flexible in low temperatures
- Hydrolysis-resistant
- Full-surface adhesion and resistant to infiltration from below
- Resistant to roots and rhizomes as per FLL
- Resistant to sparks and radiant heat (DIN 4102)
- Vapour-permeable and resistant to de-icing salt
- Alkali-resistant
- Butyl-free
- solvent-free
- The waterproofing systems within the system design with Triflex ProDetail (junctions, details, joints) are covered by European Technical Approvals (ETAs) issued by the German approval body for non-regulated construction products and types of construction, the Deutsches Institut für Bautechnik (DIBt), and meet the requirements of the EU's Construction Products Directive (CE mark) in accordance with ETAG No. 005 in the highest usage category.
- Test report on the resistance to thermal stress from mastic asphalt applied hot at up to +250 °C

Triflex AWS

Specifications

Performance properties of Triflex AWS as per the DAfStb repair guideline and the DBV data sheet for multi-storey car parks and underground car parks, January 2018 issue, plus additional performance properties:

Line	Characteristics	Test method	Requirement	Triflex AWS
1	Pull-off strength β_{HZ} of the waterproofing layer in conjunction with primer and, if applicable, adhesive primer	TP-BEL-B, Part 3 (issue 1995)	V sample properties: T_{norm} / T_{min}: β_{HZ} ≥ 1.3 N/mm² (oa) (range of individual values ≤ 0.8 N/mm² (oa = on average)) Temperature effect $T_{standard}$ -> T_{min} V samples: ≤ 30 % ≥ 1.3 N/mm² (oa) (range of individual values ≤ 0.8 N/mm² (oa = on average)) B sample stress effect $T_{standard}$, T_{min} ≤ 30 %, ≥ 1.3 N/mm² (oa)	fulfilled
2	Pull-off resistance β_{HZ} in the overlap area of the waterproofing layer at $T_{standard}$ Suitability for recoating	TP-BEL-B, Part 3 (issue 1995)		fulfilled
3	Pull-off strength β_{HZ} of the waterproofing layer in conjunction with the protective mastic asphalt layer	TP-BEL-B, Part 3 (issue 1995)	No specification	fulfilled
4	Crack bridging R	TP-BEL-B, Part 3 (issue 1995)	Dynamic: 0.3 mm ± 0.1 mm at -20 °C Static 1.0 mm (A) Cracks < 25 % Detachment < 2d Crack width in case of breakage < (determine value)	fulfilled
5	Shearing strength S for superstructures with the protective mastic asphalt layer	TP-BEL-B, Part 3 (issue 1995)	V sample properties: S ≥ 0.35 N/mm² (oa) (range of individual values ≤ 0.18 N/mm² (oa = on average)) B samples stress effect (A+TW): No drop compared to V sample No penetration by water	Not required
6	Stability in case of thermal stress for superstructures with the protective mastic asphalt layer (need-based testing)	TP-BEL-B, Part 3 (issue 1995)	Shift ≤ 2 mm	Not required
7	Abrasion resistance	DIN EN ISO 5470-1	Mass loss < 3000 mg Friction wheel: H22/1000 cycles/load 1000 g The requirements of DIN EN 13813 must also be met (see section A 3.2).	fulfilled
8	CO_2 permeability	DIN EN 1062-6	s_d > 50 m	fulfilled
9	Water vapour permeability	DIN EN ISO 7783	Class II: 5 m ≤ s_d ≤ 50 m	fulfilled
10	Capillary water absorption and water permeability	DIN EN 1062-3	w < 0.1 kg/(m² x $h^{0.5}$)	fulfilled

Specifications

11	Bond strength as per testing for temperature change tolerance. For outdoor usages under the influence of de-icing salts: Thunder shower exposure (temperature shock) (10x) and thermal cycling with alternating freezing/thawing with exposure to de-icing salt (50x)	DIN EN 13687-2 DIN EN 13687-1	After thermal cycling a) No cracks, bubbles, detachment b) Pull-off trial ≥ 1.5 (1.0) N/mm²	 fulfilled fulfilled
12	Resistance to strong chemical attack Class I: 3d without pressure Test liquids: Groups 1, 3 and 10 according to DIN EN 13529	DIN EN 13529	24 hrs after removing the coating from the test liquid, reduction of the hardness by less than 50 % when measuring after the indentation hardness test according to Buchholz, EN ISO 2815, or Shore hardness, EN ISO 868	fulfilled
13	Dynamic crack-bridging capabilities After conditioning according to DIN EN 1062-11, 4.1 – 7 days at 70 °C for reactive resin systems	DIN EN 1062-7	B 4.2 (-20 °C) and A 3 (20 °C) (according to DIN EN 1062-7)	fulfilled
14	Impermeability	DIN EN 14224:2010 and ETAG	No water penetration	fulfilled
15	Impact strength	DIN EN ISO 6272-2	Class I, ≥ 4 Nm	fulfilled
16	Pull-off trial	DIN EN 1542	≥ 1.5 (1.0) N/mm²	fulfilled
17	Fire classification after application	DIN EN 13501-1	N/A	Not required
18	Grip / slip resistance	DIN EN 13036-4	Class III: > 55 units tested in wet condition (outside)	fulfilled
19	Dynamic crack-bridging capabilities on concrete for Triflex ProDetail in the junction area and for Triflex ProPark in the surface area	DIN EN 1062-7	Maximum crack expansion of 3 mm	3 mm
20	Crack bridging R	TP-BEL-B, Part 3 (issue 1995)	Dynamic: 0.55 mm at -20 °C	fulfilled

A = thermal ageing
TW = thermal cycling
V = reference sample not exposed to stress
B = stressed sample

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
1		**General information**		
1.1	Lump sum	**Building site preparation**	Lump sum	_____
1.2	Lump sum	**Container** Delivery, set-up, provision and off-site transportation of a material and device container.	Lump sum	_____
1.3	Lump sum	**Power supply** Provision of power supply for alternating and three-phase current, to be removed on completion of the building project.	Lump sum	_____
1.4	Lump sum	**Water supply** Provision of water supply for the necessary cleaning tasks, to be removed on completion of the building project.	Lump sum	_____
1.5	Lump sum	**Fence around building site** Provision of fence for the entire period of the building project, to be adapted as required by the individual work stages.	Lump sum	_____
1.6	Lump sum	**Re-routing of traffic** Implementing measures to re-route traffic, such as road signs, traffic light system etc., setting up any necessary devices, adapting in accordance with progress of the building project and removing on completion of the building project.	Lump sum	_____

Amount carried forward: _____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
1.7	Lump sum	**Activated carbon filter** Supply, set-up, operation and removal of an activated carbon filter of sufficient dimensions for cleaning the exhaust air of odorous monomer pollution due to PMMA emissions. The system must be checked regularly and the activated carbon must also be replaced regularly. Replacement of the activated carbon is remunerated separately. Type LAK-825-PE carbon air filter: Activated carbon filter for removal of organic compounds from an air flow. - Diameter: 1,300 mm - Filling quantity: 825 kg activated carbon - Consumptiontric flow rate: max. 1,000 m³/hr. Type GUT-L40-2 activated carbon Hard coal based extruded activated carbon for removal of organic compounds in an air flow. - Stick diameter: 4 mm - BET surface area: 950 m²/g - Iodine value approx.: 900 mg/g - Bulk density: approx. 500 +/- 30 kg/m³ MBA 600-T radial fan Medium-pressure radial fan for simultaneous operation of multiple activated carbon filters. - Consumptiontric flow rate: max. 4,000 m³/hr. (Filter operation) - Power: 11 kW - Sound pressure level: 90 dB Commissioning time: ..... months	Lump sum	_____
2		**Structure and substrate inspection**		
2.1	Lump sum	**Cavities** Checking for cavities by tapping the existing concrete surfaces with a hammer or chain, and marking any areas accordingly.	Lump sum	_____
2.2	Lump sum	**Adhesive tensile strength** Determining and recording the specified adhesive tensile strength of the existing substrate using a suitable gauge (e.g. a Freundl unit). Number of measurements: ……	Lump sum	_____
2.3	Lump sum	**Compressive strength** Determining and recording the compressive strength of the existing concrete substrate using a Schmidt Hammer. Number of measurements: ……	Lump sum	_____
			Amount carried forward:	_____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
2.4	Lump sum	**Moisture content** Determining and recording the moisture content of the existing concrete substrate using a suitable gauge (e.g. electronic moisture meter). Number of measurements: ……	Lump sum	_____
2.5	Lump sum	**Core sample** Determining the layer configuration and each of the layer thicknesses by removing a core sample. Number of measurements: ……	Lump sum	_____
2.6	Lump sum	**Analysis of core sample** Determining the chloride content in the substrate by testing the core sample (see Item 2.5). Number of measurements: ……	Lump sum	_____
2.7	Lump sum	**Checking gradient and unevenness** Checking the existing substrate for sufficient gradient, formation of puddles and unevenness.	Lump sum	_____
2.8	Lump sum	**Site journal with continuous measuring** Provision of suitable measuring devices for the continuous measuring of air humidity, ground temperature, air temperature and to determine the dew point throughout the building project, incl. a site journal with logging of measured values.	Lump sum	_____
3		**Substrate pretreatment** (See Triflex AWS system description, Substrate pre-treatment table)		
3.1	_____ m^2	**Basic cleaning** Preparation of the substrate using a suitable basic cleaning process. Procedure: ……	_____ /m^2	_____
3.2	_____ m^2	**Grinding** Preparation of the substrate by grinding with suitable abrasive tools, incl. cleaning, acknowledgement of delivery, off-site transportation and proper disposal of any rubble.	_____ /m^2	_____
3.3	_____ m	**Grinding the junctions** Preparation of the substrate of the wall junctions and details by grinding with suitable abrasive tools incl. cleaning, acknowledgement of delivery, off-site transportation and proper disposal of any rubble. Junction height: …… cm	_____ /m	_____

Amount carried forward: _____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
3.4	_____ m²	**Milling** Removal of any contaminated surfaces on the concrete with a suitable milling machine approx. 3–5 mm in depth in order to ensure the adhesive property and soundness of the substrate incl. acknowledgement of delivery, off-site transportation and proper disposal of the milled material.	_____ /m²	_____
3.5	_____ m²	**Shot-blasting** Cleaning of entire surface, incl. construction and settlement joint areas by Blastrac shot-blasting crosswise, incl. machine-sanding junctions, cleaning of surfaces, off-site transportation and proper disposal of any blasting residue.	_____ /m²	_____
3.6	_____ m²	**Sand blasting** Sand blasting of partial surfaces incl. expansion joints and construction joints to remove non-bearing concrete parts (e.g. the vertical surfaces).	_____ /m²	_____
3.7	_____ m	**Joint milling machine/joint hook** Removal of any joint sealant as required using joint milling machine or joint hook.	_____ /m	_____
3.8	_____ m	**Levelling** Levelling of joint sealant in still functional construction joints by filling with comparable material or Triflex Cryl RS 240, or removal of any oozing or excess material in order to achieve a flush finish.	_____ /m	_____
3.9	_____ m²	**Preparing metal substrates** Thoroughly abrade the metal substrates with Triflex Cleaner and additionally roughen the surface. Consumption: min. 0.20 l/m²	_____ /m²	Unit price
4		**Triflex Primer**		
4.1	_____ m	**Priming of wall junctions** On concrete and masonry substrates. Priming with Triflex Cryl Primer 287. Consumption: at least 0.35 kg/m² Application according to the material manufacturer's technical guidelines. Adhesion to the substrate must be checked on a case-by-case basis. Junction height: …… cm	_____ /m	_____

Amount carried forward: _____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
4.2	_____ m²	**Priming of composite thermal insulation systems** For composite thermal insulation systems in the area of the facade. Priming with Triflex Pox Primer 116+ incl. dressing with quartz sand, size 0.3–0.8 mm. Removal of any surplus after curing. Consumption of Triflex Pox Primer 116+: at least 0.30 kg/m² Consumption of quartz sand 0.3–0.8 mm: at least 0.70 kg/m² Application according to the material manufacturer's technical guidelines. Adhesion to the substrate must be checked on a case-by-case basis. Junction height…… cm	_____ /m	_____
4.3	_____ m²	**Priming of resin-modified substrate** For resin-modified substrates. Priming with Triflex Pox Primer 116+ incl. dressing with quartz sand, size 0.3–0.8 mm. Removal of any surplus after curing. Consumption of Triflex Pox Primer 116+: at least 0.30 kg/m² Consumption of quartz sand 0.3–0.8 mm: at least 0.70 kg/m² Application according to the material manufacturer's technical guidelines. Adhesion to the substrate must be checked on a case-by-case basis.	_____ /m²	_____
4.4	_____ m²	**Priming of mastic asphalt / APP bitumen sheeting** For substrates with mastic asphalt or for APP bitumen sheeting in the surface. Priming with Triflex Cryl Primer 222. Consumption: at least 0.40 kg/m² Application according to the material manufacturer's technical guidelines. Adhesion to the substrate must be checked on a case-by-case basis.	_____ /m²	_____
4.5	_____ m²	**Priming of mineral substrate** For mineral substrates in the surface. Priming with Triflex Cryl Primer 287. Consumption: at least 0.35 kg/m² Application according to the material manufacturer's technical guidelines. Adhesion to the substrate must be checked on a case-by-case basis.	_____ /m²	_____

Amount carried forward: _____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
4.6	_____ m²	**Pore sealing primer** For substrates with pinholes. Priming with Triflex Cryl Primer 280. Consumption without pinholes: min. 0.40 kg/m², 1 working step Consumption with pinholes: min. 0.80 kg/m², 2 working steps, 0.40 kg/m² each. Second working step after non-stick surface Application according to the material manufacturer's technical guidelines. Adhesion to the substrate must be checked on a case-by-case basis.	_____ /m²	Unit price
4.7	_____ m²	**Priming of glass** Priming of the surface with Triflex Glass Primer, incl. pre-cleaning of the surface with Triflex Glass Cleaner. Consumption of Triflex Glass Cleaner: approx. 0.05 l/m² Consumption of Triflex Glass Primer: approx. 0.05 l/m² Application according to the material manufacturer's technical guidelines. Adhesion to the substrate must be checked on a case-by-case basis.	_____ /m²	_____
4.8	_____ m²	**Priming of metal** e.g. stainless steel, steel and zinc. Priming with Triflex Metal Primer, incl. pre-cleaning of the surface with Triflex Cleaner. Consumption of Triflex Cleaner: at least 0.20 l/m² Consumption of Triflex Metal Primer: approx. 0.08–0.10 l/m² Application according to the material manufacturer's technical guidelines. Adhesion to the substrate must be checked on a case-by-case basis.	_____ /m²	_____
5		**Triflex repairs**		
5.1	_____ m²	**Repair mortar, mineral substrate (R_t >10 mm)** Repairing defective spots on the existing mineral substrate with Triflex Cryl RS 240 repair mortar in the area of roughness depths R_t >10 mm. Triflex Cryl RS 240, colour 7023, consumption: at least 2.20 kg/m² per mm layer thickness Application according to the material manufacturer's technical guidelines. Average layer thickness: ……	_____ /m²	_____
				Amount carried forward: _____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
5.2	_____ m²	**Repair mortar, bituminous substrate (R_t >10 mm)** Repairing defective spots on the existing bituminous substrate with Triflex Cryl RS 242 repair mortar in the area of roughness depths R_t >10 mm. Triflex Cryl RS 242, colour 7022, consumption: at least 2.20 kg/m² per mm layer thickness. Application according to the material manufacturer's technical guidelines. Average layer thickness: ……	_____ /m²	_____
5.3	_____ m²	**Levelling coat, mineral substrate or asphalt (R_t >1 to 10 mm)** Repairing defective spots on the existing mineral substrate or asphalt with levelling coat with Triflex DeckFloor basis in the area of roughness depths R_t >1-10 mm. Triflex DeckFloor levelling coat made from 33 kg Triflex DeckFloor with the addition of up to 20 kg quartz sand (0.7–1.2 mm), grey finish, consumption of at least 2.00 kg/m² per mm layer thickness. Triflex Powder Thixo, addition depending on temperature and the desired degree of thixotropy, approx. 2 %. Application according to the material manufacturer's technical guidelines. Average layer thickness: ……	_____ /m²	_____
5.4	_____ m²	**Scratch coat, mineral substrate or asphalt (R_t >0.5-1.0 mm)** Repairing defective spots on the existing mineral substrate or asphalt with scratch coat with Triflex DeckFloor basis in the area of roughness depths R_t >0.5-1.0 mm. Triflex DeckFloor scratch coat made from 33 kg Triflex DeckFloor with the addition of up to 10 kg quartz sand (0.2–0.6 mm), grey finish, consumption of at least 2.00 kg/m² per mm layer thickness. Application according to the material manufacturer's technical guidelines. Average layer thickness: ……	_____ /m²	_____
5.5	_____ m²	**Grouting** For shrinkage cracks, small areas of damage and uneven areas. Grouting and filling in with Triflex Cryl Paste. Consumption: approx. 1.40 kg/m² per mm layer thickness Application according to the material manufacturer's technical guidelines.	_____ /m²	_____
			Amount carried forward:	_____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
6		**Triflex detail waterproofing** Creation of detail waterproofing with Triflex ProDetail incl. Triflex Special Fleece. The Triflex ProDetail waterproofing system has been awarded ETA approval (ETAG No. 06/0269) with CE mark in the highest usage categories W3, M and S, P1 to P4, S1 to S4, TL4, TH4, B_{ROOF}(t1), B_{ROOF}(t2), B_{ROOF}(t3), B_{ROOF}(t4). Test reports certify the root resistance according to FLL standards and resistance to hailstorm according to DIN EN 13583 for hard and flexible substrates. A general building supervisory authority test certificate (abP) as per VV TB, Part C, No. C 3.28 is also available.		
6.1	_____ m	**Wall junction** Waterproofing of the wall junction with Triflex ProDetail incl. Triflex Special Fleece. Triflex ProDetail, colour 7030, consumption at least 3.00 kg/m². Application according to the material manufacturer's technical guidelines. (See Triflex system drawing AWS-5202 and AWS-5208) Junction height: …… cm	_____ /m	_____
6.2	_____ pc.	**Gully** Waterproofing of gully with Triflex ProDetail incl. Triflex Special Fleece. Triflex ProDetail, colour 7030, consumption at least 3.00 kg/m². Application according to the material manufacturer's technical guidelines. (See Triflex system drawing AWS-5204)	_____ /pc.	_____
6.3	_____ m	**Drainage channel** Waterproofing of the drainage channel with Triflex ProDetail incl. Triflex Special Fleece. Triflex ProDetail, colour 7030, consumption at least 3.00 kg/m² Application according to the material manufacturer's technical guidelines. (See Triflex system drawing AWS-5204)	_____ /m	_____

Amount carried forward: _____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
6.4	_____ pc.	**Column joint** Waterproofing of the prop connectors with Triflex ProDetail, including Triflex Special Fleece. Triflex ProDetail, colour 7030, consumption at least 3.00 kg/m² Application according to the material manufacturer's technical guidelines. (See Triflex system drawing AWS-5203 and AWS-5209) Junction height: …… cm	_____ /pc.	_____
6.5	_____ pc.	**Penetration** Waterproofing of penetrations with Triflex ProDetail incl. Triflex Special Fleece. Triflex ProDetail, colour 7030, consumption at least 3.00 kg/m². Application according to the material manufacturer's technical guidelines. (Corresponds to Triflex system drawing AWS-5203) Junction height: …… cm	_____ /pc.	_____
6.6	_____ m	**Door sill** Waterproofing of the junction at the door sill with Triflex ProDetail incl. Triflex Special Fleece. Triflex ProDetail, colour 7030, consumption at least 3.00 kg/m². Application as per the material manufacturer's technical guidelines	_____ /m	_____
6.7	_____ m²	**Increase of the intermediate adhesion** For a better adhesion between the Triflex waterproofing and the subsequent mastic asphalt. Preparation of an additional wearing layer with Triflex ProDetail, incl. dressing with a surplus of quartz sand, size 0.7–1.2 mm. Removing any surplus after curing. Triflex ProDetail, colour 7030, consumption at least 1.50 kg/m². Quartz sand 0.7–1.2 mm, consumption at least 7.00 kg/m² with a surplus. Application according to the material manufacturer's technical guidelines.	_____ /m²	_____

Amount carried forward: _____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
7		**Triflex joint waterproofing** Creation of joint waterproofing with Triflex ProDetail incl. Triflex Special Fleece. The Triflex ProDetail waterproofing system has been awarded ETA approval (ETAG No. 06/0269) with CE mark in the highest usage categories W3, M and S, P1 to P4, S1 to S4, TL4, TH4, B_{ROOF}(t1), B_{ROOF}(t2), B_{ROOF}(t3), B_{ROOF}(t4). Test reports certify the root resistance according to FLL standards and resistance to hailstorm according to DIN EN 13583 for hard and flexible substrates. A general building supervisory authority test certificate (abP) as per VV TB, Part C, No. C 3.28 is also available.		
7.1	_____ m	**Construction joint** Waterproofing of the construction joint with Triflex ProDetail incl. Triflex Special Fleece. If required, level out the joint using Triflex Cryl RS 240 (mineral substrates) or Triflex Cryl RS 242 (bituminous substrates). Width ….. cm, Consumption of Triflex Cryl RS 240 / Triflex Cryl RS 242: approx. 2.20 kg/m² per mm layer thickness. Triflex ProDetail, colour 7030, consumption at least 3.00 kg/m². Application according to the material manufacturer's technical guidelines. (See Triflex system drawing AWS-5205)**.**	_____ /m	_____
7.2	_____ m	**Settlement joint surface** Waterproofing of the settlement joint with Triflex ProDetail incl. Triflex Special Fleece. Apply a width of approx. 4 cm of Triflex Cryl Paste to both sides of the joint to bond the Triflex Support Strip, Consumption: 1.40 kg/m² per mm coat thickness. Triflex ProDetail, colour 7030, consumption at least 2.10 kg/m incl. fitting of 2 layers of Triflex Special Fleece, fleece width 35 cm and a PE round sealing band (closed-cell). Triflex FlexFiller, colour 7043, consumption at least 1.40 kg/m² per mm layer thickness Application according to the material manufacturer's technical guidelines. (See Triflex system drawing AWS-5206) Note: The settlement joints are all maintenance joints. It may be necessary to renew the joint sealant after structural movement.	_____ /m	_____

Amount carried forward: _____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
7.3	_____ m	**Settlement joint – wall junction** Waterproofing of the settlement joint with Triflex ProDetail incl. Triflex Special Fleece. Apply a width of approx. 4 cm of Triflex Cryl Paste to both sides of the joint to bond the Triflex Support Strip, Consumption: 1.40 kg/m² per mm coat thickness. Triflex ProDetail, colour 7030, consumption at least 2.10 kg/m incl. fitting of 2 layers of Triflex Special Fleece, fleece width 35 cm and a PE round sealing band (closed-cell). Triflex FlexFiller, colour 7043, consumption at least 1.40 kg/m² per mm layer thickness Application according to the material manufacturer's technical guidelines. (See Triflex system drawing AWS-5207) Junction height: …… cm Note: The settlement joints are all maintenance joints. It may be necessary to renew the joint sealant after structural movement.	_____ /m	_____

Amount carried forward: _____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
8		**Triflex surface waterproofing** Creation of surface waterproofings with Triflex ProPark incl. Triflex Special Fleece. A general building supervisory authority test certificate (AbP) for Triflex ProPark as per VV TB, Part C, No. C 3.12 is available.		
8.1	_____ m^2	**Surface waterproofing** Waterproofing the surface with Triflex ProPark incl. Triflex Special Fleece. Triflex ProPark, colour 7030, consumption at least 3.00 kg/m². Application according to the material manufacturer's technical guidelines. (See Triflex system drawing AWS-5201) System and product characteristics: - Full-surface fleece-reinforced waterproofing system based entirely on PMMA resin (polymethyl methacrylate) - Flexible in low temperatures - Hydrolysis-resistant - Full-surface adhesion and resistant to infiltration from below - Resistant to roots and rhizomes as per FLL - Resistant to sparks and radiant heat (DIN 4102) - Vapour-permeable and resistant to de-icing salt - Alkali-resistant - Butyl-free - Solvent-free - The waterproofing systems within the system design with Triflex ProDetail (junctions, details, joints) are covered by European Technical Approvals (ETAs) issued by the German approval body for non-regulated construction products and types of construction, the Deutsches Institut für Bautechnik (DIBt), and meet the requirements of the EU's Construction Products Directive (CE mark) in accordance with ETAG No. 005 in the highest usage category. - Test report on the resistance to thermal stress from mastic asphalt applied hot at up to +250 C	_____ /m^2	_____
			Amount carried forward:	_____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
9		**Triflex protective layer**		
9.1	_____ m^2	**Protective layer** In order to protect the waterproofing and absorb shearing forces. Preparation of an additional wearing layer with Triflex ProPark, incl. dressing with a surplus of quartz sand, size 0.7–1.2 mm. Removing any surplus after curing. Triflex ProPark, colour 7030, consumption at least 1.50 kg/m². Quartz sand 0.7–1.2 mm, consumption at least 7.00 kg/m² with a surplus. Application according to the material manufacturer's technical guidelines.	_____ /m^2	_____
10		**Top layer**		
10.1	_____ m^2	**Mastic asphalt** Creation of the mastic asphalt top layer of quality class MA 11 S. Installed thickness = 3.5 cm including impressed sanding material.	_____ /m^2	_____
11		**Triflex finish**		
11.1	_____ m	**Finishing of wall junction** Finishing of wall junctions with Triflex Cryl Finish 209. Consumption: at least 0.50 kg/m². Application according to the material manufacturer's technical guidelines. Junction height: …… cm Colour: ..... at the discretion of the client.	_____ /m	_____
11.2	_____ pc.	**Finishing of railing posts** Finishing in the area of rising railing posts with Triflex Cryl Finish 209. Consumption: at least 0.50 kg/m². Application as per the material manufacturer's technical guidelines. Junction height: …… cm Colour: ..... at the discretion of the client.	_____ /pc.	_____

Amount carried forward: _____

Specifications

Item no.	Quantity	Subject of service	Unit price EUR	Total price EUR
			Amount carried forward:	_____
11.3	_____ pc.	**Finishing of penetration** Finishing in the area of rising penetrations with Triflex Cryl Finish 209. Consumption: at least 0.50 kg/m². Application as per the material manufacturer's technical guidelines. Junction height: …… cm Colour: ..... at the discretion of the client.	_____ /pc.	_____
12		**Hourly rates**		
12.1	_____ hrs.	Hourly rate of a foreman.	_____ /hr.	_____
12.2	_____ hrs.	Hourly rate of a skilled worker.	_____ /hr.	_____
12.3	_____ hrs.	Hourly rate of an assistant.	_____ /hr.	_____
13		**Materials**		
13.1	_____ kg	Material consumption upon proof.	_____ /kg	Unit price
14		**Disposal**		
14.1	Lump sum	Disposal of all waste and hazardous waste materials in accordance with the current applicable laws and implementing regulations.	Lump sum	_____
		Net total:		
		Statutory VAT at ____%		_____
		Gross total:		