TERRIX® SYSTEMS

External Render System for winter application TERRIX® ERS-3

fully vapour permeable

System Specification

pcc Terrix

TERRIX®
SYSTEMS

Contents:

1. System Components

The External Render System „TERRIX® ERS-3" is designed and installed in accordance with the design and installation instructions. The SYSTEM comprises the following components, which are factory-produced by the PCC or its supplier.

	System components	Usage (kg/m²)	Thickness
Base coat	TERRIX® RD-LB microfibre reinforced levelling base coat (lime-stone based powder requiring addition of water 0.24 - 0.28 l/kg). TERRIX® RD-LB consists of main components: hydraulic adhesives, sand, calcium carbonate, polyvinylacetate resin.	11-13	Mean (dry): 11 Minimal (dry): 10
Primer coat	Ready to use pigmented liquids: • TERRIX® PR-MN-R (used with TERRIX® RD-MN)	0.2 to 0.25	/
Render coat	Mineral texture coat TERRIX® RD-MN (particle size: 1.0; 1.5; 2.0; 2.5; 3.0 mm) floated and ribbed structure or TERRIX® RD-MN-S (particle size: 1,5 mm) spray application	1.6-4.5	Regulated by particles size
Top coat	Polymer-silicate external coat TERRIX® EC-PS	0.33	
Ancillary materials	All additional materials eg. beads, tapes to be supplied by the SYSTEM producer.		

2. Intended use

TERRIX® ERS-3 is intended for use as external render of buildings´ walls. The walls are made of masonry (bricks, blocks, stones...) or concrete (cast on site or as prefabricated panels) with a reaction to fire classification A1 or A2-s2, d0 according to EN 13501-1 and a minimum density of 820 kg/m3 or A1 according to the EC decision 96/603/EC as amended.
TERRIX® ERS-3 is made of non load-bearing construction elements. It does not contribute directly to the stability of the wall on which it is installed, but it can contribute to durability by providing enhanced protection from the effect of weathering.
TERRIX® ERS-3 can be used on new or existing (retrofit) vertical walls. It can also be used on horizontal or inclined surfaces which are not exposed to precipitation.
TERRIX® ERS-3 is not intended to ensure the airtightness of the building structure.

3. Characteristics of the product and methods of verification

3.1 General

The identification tests and the assessment of the fitness for use of **TERRIX® ERS-3** according to the Essential Requirements were carried out in compliance with the "ETA Guidance No. 004"

3.2 System characteristics

3.2.1 Reaction to fire

Configuration	The declared organic content	The flame retardant content	Euroclass according to EN 13501-1
Levelling base coat TERRIX® RD-LB	Max. 0.54 %	No flame retardant	A2 - s1, d0
Texture coat TERRIX® RD-MN	Max. 0.54%	No flame retardant	
Top coat TERRIX® EC-PS	Max. 5.80%	No flame retardant	

3.2.2 Water absorption (capillary test)

Levelling base coat **TERRIX® RD-** LB

Water absorption after 1 hour	<1kg/m²
Water absorption after 24 hours	<0.5kg/m²

TERRIX® ERS-3 System

System components	Water absorption after 24h
TERRIX® RD-LB TERRIX® RD-MN or TERRIX® RD-MN-S TERRIX® EC-PS	< 0.5kg/m2

3.2.3 Hygrothermal behaviour

Hygrothermal cycles have been performed on a rig.

None of the following defects occurred during the testing:
- blistering or peeling of any finishing,
- failure or cracking associated with joints between insulation product boards or profiles fitted with system,
- detachment of render,
- cracking allowing water penetration to the insulation layer.

TERRIX® ERS-3 System is assessed resistant to hygrothermal cycles.

3.2.4 Freeze/thaw behaviour

The water absorption of both base coats and the rendering systems are less than 0.5 kg/m2 after 24 hours.

TERRIX® ERS-3 is assessed as freeze/thaw resistant.

3.2.5 Water vapour permeability

TERRIX® EWI-W1 System

System components	Equivalent air thickness (m)
TERRIX® RD-LB	≤ 1.0m, result: 0.15m
TERRIX® RD-PS or TERRIX® RD-PS-S	

3.2.6 Bond strength

Conditionings		
Initial state	After the hygrothermal cycles (on the rig)	After the freeze/thaw cycles (on samples)
< 0.3 N/mm2	< 0.3 N/mm2	Test not required because freeze/thaw cycles not necessary

3.3 System Components' characteristics

3.3.1 Levelling base coat TERRIX® RD-LB

Base binder: hydraulic adhesives;
Grain size: to 0.6 mm;
Colour: naturally white or grey;
Mixing ratio: 5.5÷6.0 litres of water per 25 kg of mortar;
Usage: after adding an appropriate amount of water, it is possible to obtain around 23 litres of ready-to-use mortar from one packaging of the product;
Application time after adding water: not less than 2 hours;
Processing time: (depending on the type of substrate and ambient humidity and temperature) • from application to levelling ca. 30 minutes, • from levelling to spreading 2-5 hours;
Consumption: ca. 1.1 kg/m2 per each 1 mm of the layer thickness;
Temperature of application (air and substrate): from +0°C to +15°C;
Curing temperature: from -10°C to +15°C
Compressive strength: cat. CS I;
Water absorption: cat W0;
Adhesion: ≥ 0.2 N/mm2;
Water vapour permeability coefficient μ: ≤9;
Heat conductivity coefficient: λ ≤ 0.37 W/m*K for P=50%, λ ≤ 0.42 W/m*K for P=90%
Reaction to fire: class A1;
Packaging: Disposable paper bags containing 25 kg of the product;
Storage: The product should be stored in its original sealed packaging in a dry frost-protected room. Note: The product must be kept out of the reach of children;
Shelf life: 12 months from the manufacture date specified on the packaging, provided that the storage requirements are observed. It is recommended to use the product within 6 months.

3.3.2 Primer coat TERRIX® PR-MN-R

Base binder: special modified potassium water glass and copolymer adhesive;
Pigments: nonorganic pigments only;
Density: ca. 1.3 g/cm³;
Content of solids: min. 44%;
Colour: white or coloured to the render colour
Usage: ca. 0.20 l/m² (depending on the substrate water absorption);
Temperature of application (air and substrate): from +5°C to +25°C;
Relative humidity: ≤75%
Packaging: Single-use plastic packaging 10l;
Storage: The product should be stored in its original sealed packaging, in a cool, dry and frost-protected room. After opening and using some of the contents, the packaging should be resealed and remainder of the product should be used as soon as possible.
Shelf life: 12 months from manufacture date specified on the packaging, provided that the storage requirements are observed.

Note: The product must be kept out of the reach of children;

3.3.3 Texure coat TERRIX® RD-MN-S 1.5

Base binder: mix of hydraulic binders with the addition of modifiers;
Colour: white;
Grain: 1.0 - 1.5 mm;
Mixing ratio: 6.25 litres of water per 25 kg of mortar;
Application time after adding water: not less than 2 hours;
Consumption: ca. 1.8-22 kg/m2;
Temperature of application (air and substrate): from +0°C to +25°C;
Compressive strength: CS IV;
Water absorption: cat W2;
Adhesion: ≥ 1.6 N/mm²;
Dry gross density of hardened mortar: ≤1500kg/m³
Water vapour permeability coefficient μ: ≤34.9;
Reaction to fire: class A1;
Packaging: Disposable paper bags containing 25 kg of product.
Storage: The product should be stored in its original sealed packaging, in a dry frost-protected room. Note: The product must be kept out of the reach of children.
Shelf life: 12 months from manufacture date specified on the packaging, provided that the storage requirements are observed. It is recommended to use the product within 6 months.

3.3.4 Top coat TERRIX® EC-PS

Base binder: special modified potassium water glass;
Pigments: resistant to UV radiation and atmospheric conditions inorganic colour pigments;
Colour: natural white, colours from the Terrix® colour chart and selected NCS colours or samples provided (only colours that can be achieved with inorganic pigments);
Density: ca. 1.50g/cm³;
Gloss level: mat;
Solvent: water;
Consumption: ca. 0.33 l/m² (two coats on a smooth substrate);
Temperature of application (air and substrate): from +5°C to +25°C;
Relative humidity: ≤75%;
μm: Sd = 0.04 m (standard requirement Sd ≤ 2.0 m);
Surface water absorption: w = 0.05 kg/m² • h0.5 (standard requirement w ≤ 0.5 kg/m² • h0.5);
Packaging: Single-use plastic packaging of 5 and 10 l;
Storage: The product should be stored in its original sealed packaging, in a dry frost-protected room.
Note: The product must be kept out of the reach of children.
Shelf life: Originally sealed products have a 12-month shelf life from the date of production (this is printed on the side of the packaging);

4. System application

4.1 Substrate preparation

TERRIX® ERS-3 to be applied to a sound and clean substrate (without cracks and delaminations), degreased, even and dry, and biological or chemical efflorescence free). The substrate should be free of algae/fungi growth.

In case of microbial contamination, the substrate should be cleaned with a power washer. Subsequently Terrix® PR-AR solution for removing microbial contamination to be applied as per product manual. Any loose layers that are not bounded to the substrate (such as loose plasters or flaked paint coats) should be removed. Wash and degrease old and/ or dirty substrate with water and product Terrix® PR-CL cleaning agent. If there are any large irregularities to the substrate, these should be levelled out by using levelling compound. Small irregularities can be levelled with levelling render. Before applying the levelling compound/render - refer to the product manuals and data sheets. Absorbent substrates should be primed before levelling compound is being applies.
Note: the finish coat may not be applied on newly completed mineral substrates (i.e cement, concrete and lime mortar renders) - min.: 2 weeks curing period is required.

4.2 Levelling base coat installation

Preparation:

Use a container with a measured amount of fresh water (6÷7l per 25kg of mortar), pour the entire content of the package and mix thoroughly with a mixer / low-speed drill with a basket mixer until homogeneous and lump-free. Leave for approx. 5 minutes to initiate a chemical reaction. Immediately before use mix thoroughly again. Depending on the temperature and humidity ready mix is suitable for use for approx. 2 hours. If required, add a small amount of clean water (max. 0.1l per 20kg of the product). Quantity of added water may vary for different substrate types, weather conditions and application method.

Application method:

Render should be applied onto the substrate by using a steel trowel. After the initial application of mortar smooth with a sponge or felt. In large areas, it is recommended to use rendering pump.
Recommended application thickness of a single layer of render:
indoor ceilings - min. 10mm;
indoor walls - min. 10mm;
external use - min. 10mm;
For thicker application exceeding 20mm, the product should be applied in two coats with the"wet on wet" method. At wall joints with other building materials and in the presence of furrows a layer of reinforcing mesh should be embedded (145 ÷ 165 g / $m^{2)}$. Use reinforcing mesh stress patches on all openings and system junctions. Refer to detail drawings.

Warning:
The product is alkaline, use PPE to protect eyes and skin. During work use protective clothing. In the case of contact with eyes, rinse immediately with plenty of water. If irritation occurs, contact a doctor. Refer to safety data sheet.

Drying:

Typical binding time is ca. 1mm of the product per one day (15°C, 55% RH).

Note: Drying time may be longer in low temperatures and high relative humidity. To protect the top coat against inclement weather conditions, scaffolding should be covered with some protective netting or tarpaulin.
Avoid applying in direct sunlight or during strong winds.

4.3 Primer coat installation

Preparation:
The packaging contains a ready-to-use product. Do not dilute.

Application method:
The product to be applied on the substrate by using a paint brush or roller.

Drying:
Before applying a render coat, the primer requires seasoning of ca. 24 hours.

Note: Drying time may be longer in low temperatures and high relative humidity. To protect the top coat against inclement weather conditions, scaffolding should be covered with some protective netting or tarpaulin.
Avoid applying in direct sunlight or during strong winds.

Useful hints:
The application and setting of product requires dry weather and air temperature above +5°C. Low temperature and high humidity levels may lead to slower product setting. If this is the case, it is necessary to wait until the primer sets and hardens completely before applying the render coat.
All tools should be cleaned with water after work is completed. Application during direct exposure to sunlight or in strong winds is not recommended. To protect unbound product against inclement weather conditions, scaffolding should be covered with protective netting.

4.4 Texture coat installation

Preparation:
The product has to be mixed with water. Follow the spray pump manual. Depending on the type and parameters of the aggregate used, it may be necessary to adjust the consistency of the render to the requirements of the spray pump by adding a small amount of water.

Application method:
Render should be applied onto the substrate using a pneumatic spraying device at a working pressure of 3÷4 atmospheres and a nozzle diameter of 5÷6 mm. While spraying, the gun should be held perpendicularly to the substrate at a distance of 0.4-0.6 m.

Drying:
Typical binding (setting) time ca. 24h (20°C, 55% RH). Note: Drying time may be longer due to low temperatures and high relative humidity. To assist in the drying of the finish coat, the surface should be protected against precipitation and condensation. The product is wash-off resistant after 1.5h from the application.

Useful hints:
The final effect may depend on the substrate type. For non-uniform substrates, it is recommended to skim at first the whole surface with base coat mortar. To avoid colour differences, a single batch product should be used on a single application / architectural element. 'Wet on wet' method should be used. All tools should be cleaned with water after work is completed. To be applied on dry days at temperatures between 5-25°C. Avoid applying in direct sunlight or during strong winds. To protect the top coat against inclement weather conditions, scaffolding should be covered with some protective netting or tarpaulin.

4.5 Top coat installation

Product preparation:
Directly before use, mix thoroughly. If required, add a small amount of water (max 10% for the first coat and 5% for the second coat);

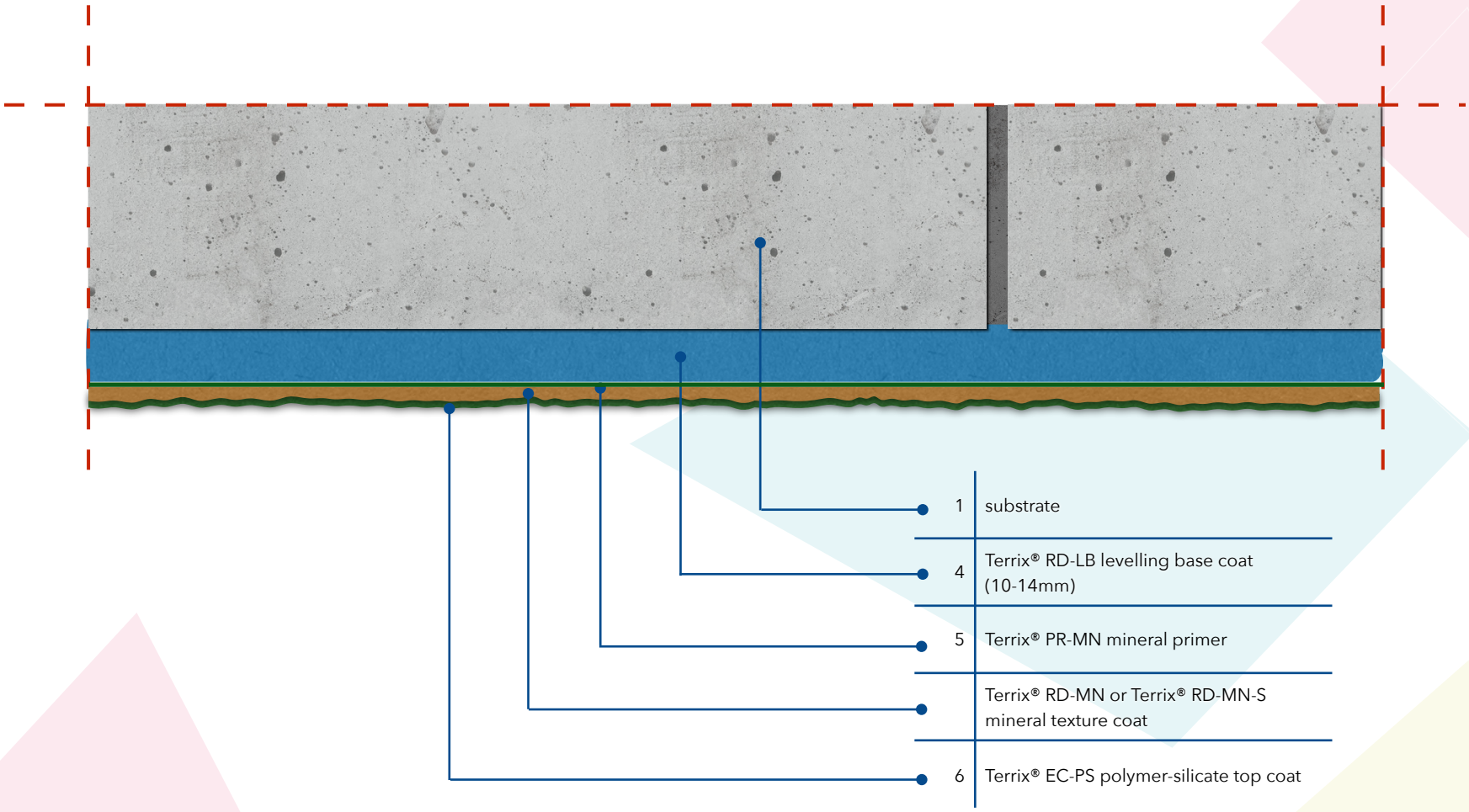
Temperature of application:
(air and substrate): from +5°C to +25°C. Avoid application in strong wind, during direct exposure to sunlight and rain;

Application:
Paint should be applied in two coats with a brush, roller or by spray application (including the airless method). The second coat can be applied once the first coat is completely dry (min. 3÷4 hours). Each element of the façade should be painted in one working cycle, with paint from one production batch.

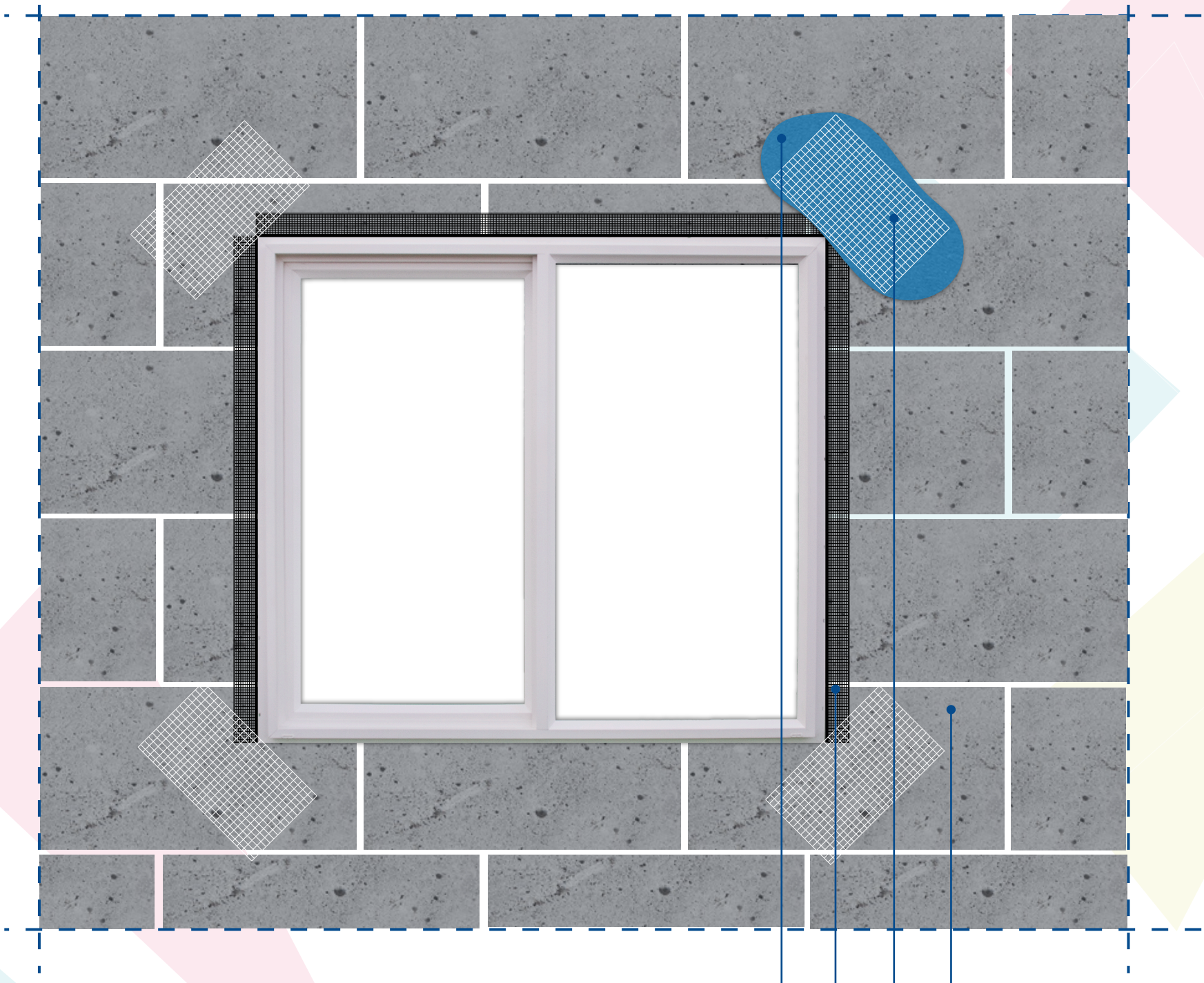
Drying:
Typical drying time ca.3h (20°C, 55% RH). Complete curing (hardening) of paint made takes min. 24 hours. Protect paint coating against precipitation and humidity concentration until it is completely dry.

5 Typical Details

5.1 System cross-section



5.2 Opening stress patch



1	Terrix® RN-LF 8
2	corner bead with mesh
3	reinforcing mesh stress patch (200 x 350)
4	block work

TERRIX® SYSTEMS

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