BOLIX®
KAMIENICA

WATERPROOFING

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The English translation of the catalog was generated with the help of artificial intelligence

01

WATERPROOFING

Water present in the surrounding environment is one of the primary threats to the durability of buildings. Most commonly, it appears in the form of precipitation, groundwater, or water vapor generated during building use. Virtually every building component is exposed to the effects of water and moisture — from foundations, through external walls and interior spaces, to roofs and chimneys.

Water, in its various forms, also frequently acts as a carrier of dissolved chemical compounds (including chlorides, nitrates, and sulfates), which can adversely affect building materials. In addition to chemical corrosion, moisture may also contribute to the development of mold and fungal growth.

Given the above, one clear conclusion emerges: excessive moisture is harmful not only to the structural integrity of buildings, but also to the health and comfort of their occupants.

Therefore, it is essential during renovation works to ensure effective moisture protection. To guarantee maximum durability of the renovation and comfortable long-term use of the building, existing damage must first be properly identified. Furthermore, compatible and appropriately selected construction materials from the BOLIX Kamienica product line should be used, while simultaneously eliminating the source of moisture.

MOST COMMON MOISTURE INGRESS MECHANISMS IN WALLS

01 Moisture from wind-driven rain impacting the façade and water splash-back

02 Surface runoff of rainwater directed toward the building

03 Diffusion of groundwater

04 Capillary rise (capillary action)

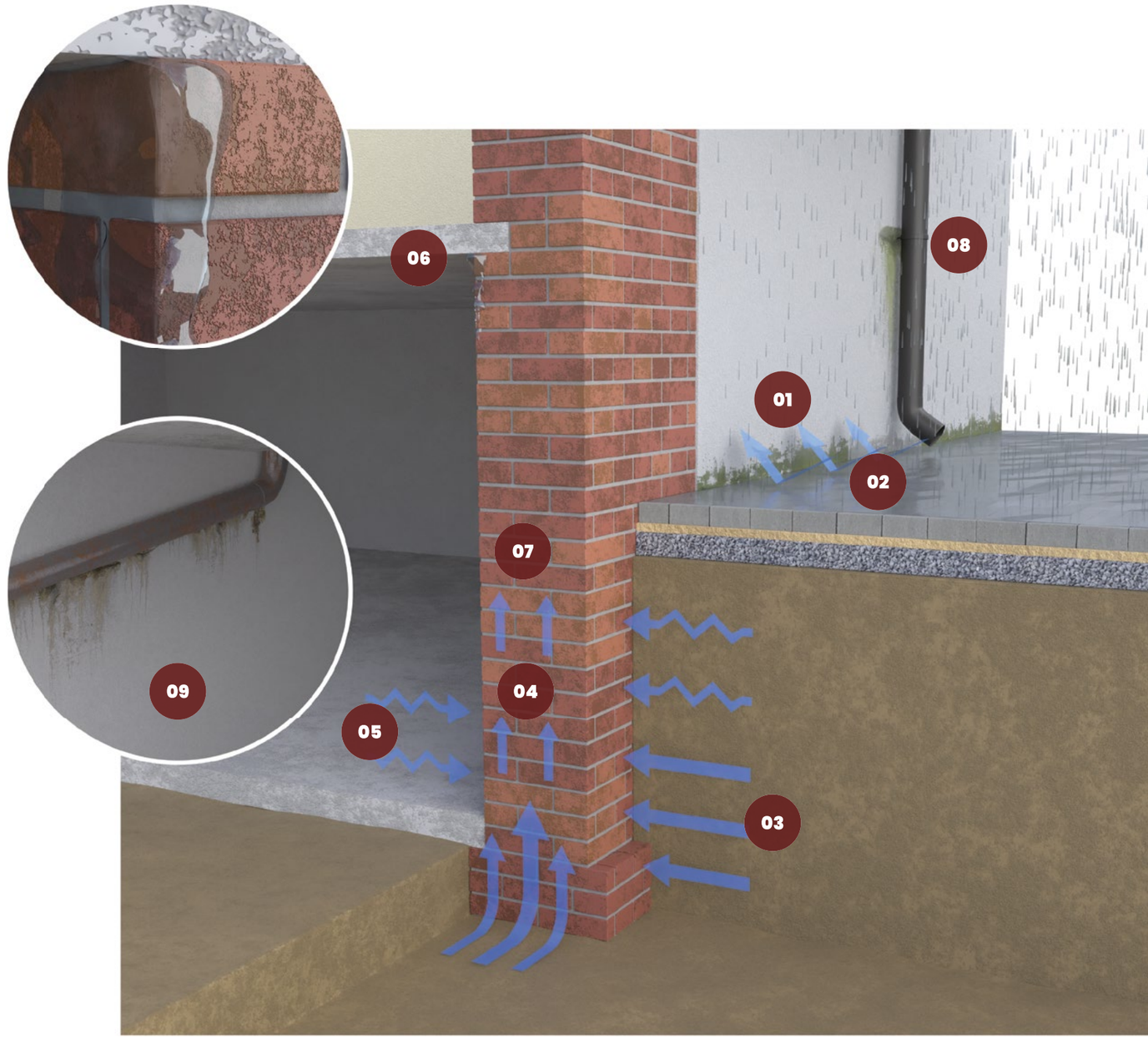
05 Absorption of moisture by hygroscopic materials and salts

06 Moisture from condensation of water vapor

07 Capillary moisture dependent on relative humidity and pore structure of materials

08 Damage or failure of rainwater drainage systems

09 Damage or leakage in water supply and sewage systems



02

VERTICAL EXTERNAL WATERPROOFING

One of the key factors ensuring dry and watertight foundation and basement walls is a properly executed vertical waterproofing system. It protects these structural elements from the impact of groundwater.

Repair work carried out below ground level is relatively costly and time-consuming. Therefore, special attention must be paid during the installation of secondary vertical waterproofing systems.

To address these challenges, BOLIX offers specialized solutions based on:

thick-layer bituminous coatings modified with synthetic polymers (PMBC – Polymer Modified Bituminous Coatings)

mineral-based, flexible thick-layer coating modified with polymers (FPD – Flexible Polymer-modified Dry coating)

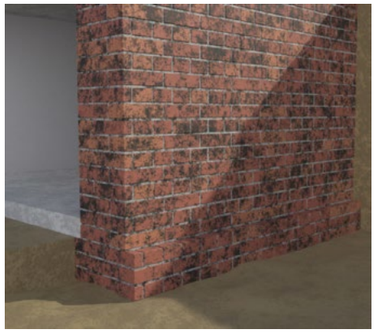
02A VERTICAL EXTERNAL WATERPROOFING

using BOLIX H-Hybrid hybrid waterproofing compound - waterproofing for existing buildings

01

Excavation of Foundations

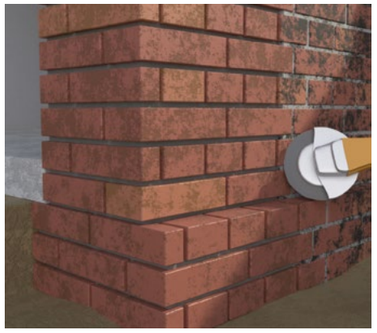
Foundations should be exposed in sections approximately 2–3 meters wide.



02

Substrate Preparation

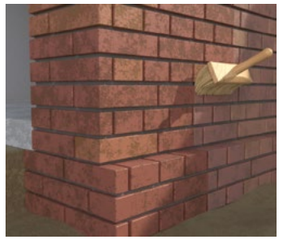
The substrate must be load-bearing and properly cleaned. Any tar residues must be completely removed.
Damaged mortar joints should be removed to a depth of approximately 2 cm.

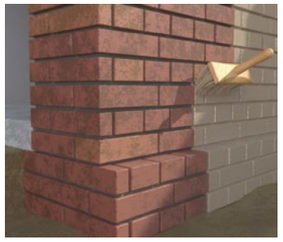


03

Priming, bonding bridge application, and surface leveling

a) Mineral substrate
Apply **BOLIX P-KH** primer evenly in a single coat, diluted with water at a 1:1 ratio.
Shortly after applying the primer, apply one layer of **BOLIX H-1KS** waterproofing slurry.
While the slurry is still fresh, apply **BOLIX Z-WOD** to close joints and level the substrate surface.





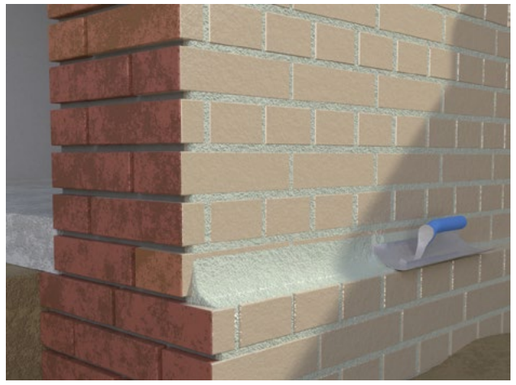
03

b) Existing, sufficiently load-bearing bituminous waterproofing
Clean the existing bituminous waterproofing layer, ensuring it is well-adhered and structurally sound.
Apply a bonding layer by scratch-troweling **BOLIX H-HYBRID** compound onto the surface.
While the applied compound is still fresh, apply **BOLIX Z-WOD** to close joints and level the substrate.

04

Fillet Formation

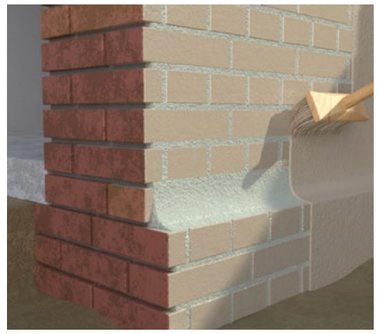
a) Mineral substrate
Apply BOLIX P-KH primer evenly in a single coat, diluted with water in a 1:1 ratio.
Shortly after priming, apply one layer of **BOLIX H-1KS** mortar.
While the **BOLIX H-1KS** layer is still fresh, extend it at least 20 cm beyond the intended fillet area and form the fillet using the "wet-on-wet" method with **BOLIX Z-WOD** mortar, maintaining a minimum fillet radius of 4 cm.



b) Existing, sufficiently load-bearing bituminous waterproofing
Clean the existing bituminous waterproofing layer, ensuring it is well-adhered and structurally sound.
Apply a bonding layer by scratch-troweling **BOLIX H-HYBRID** compound, extending at least 20 cm beyond the intended fillet area.
Using the "wet-on-wet" method, form the fillet with **BOLIX Z-WOD** mortar, maintaining a minimum fillet radius of 4 cm.

05

Application of Rigid Waterproofing Resistant to Negative Water Pressure
(for damp masonry)



Apply **BOLIX P-KH** primer evenly in a single coat, diluted with water in a 1:1 ratio.
Shortly after priming, apply one layer of **BOLIX H-1KS** mortar from a level 15 cm below the bottom edge of the foundation footing up to 30 cm above ground level. Allow the layer to cure properly.

This step should be omitted for dry masonry.

06

Application of Hybrid Waterproofing

Application of Hybrid Waterproofing
For dry masonry, apply **BOLIX P-KH** primer evenly in a single coat, diluted with water in a 1:1 ratio.
Shortly after priming, apply a bonding layer by scratch-troweling **BOLIX H-HYBRID** compound.
Apply **BOLIX H-HYBRID** in at least two layers. Each subsequent layer should be applied after the previous one has dried (minimum 4 hours), using a cross-coat method — the second layer should be applied perpendicularly to the direction of the first.

If necessary, embed **BOLIX HD 158/S** reinforcing mesh into the first layer of **BOLIX H-HYBRID**. Embedding the mesh helps achieve the proper coating thickness, enhances crack-bridging capability of the system, and improves mechanical resistance.

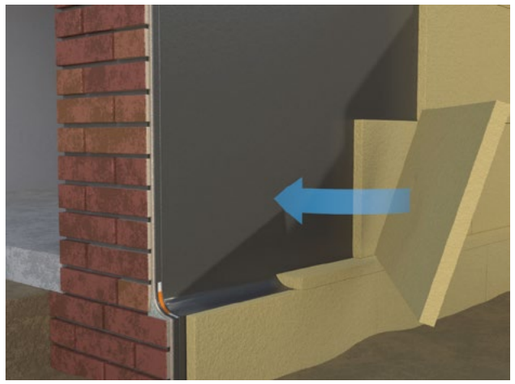
Additionally, it is recommended to use BOLIX HYDRO-TW sealing tape at the fillet area.

07

Protection of the Waterproofing Layer / Thermal Insulation

The minimum protection consists of two layers of construction-grade polyethylene (PE) foil, each with a thickness of at least 0.2 mm. As an alternative to PE foil, dedicated protection and drainage mats may be used. In such cases, the filtering geotextile layer must be installed on the soil side.

If required, after the waterproofing layer has completely dried, adhere XPS thermal insulation boards using **BOLIX H-HYBRID**, and then secure the insulation with, for example, dimpled membrane (drainage foil).

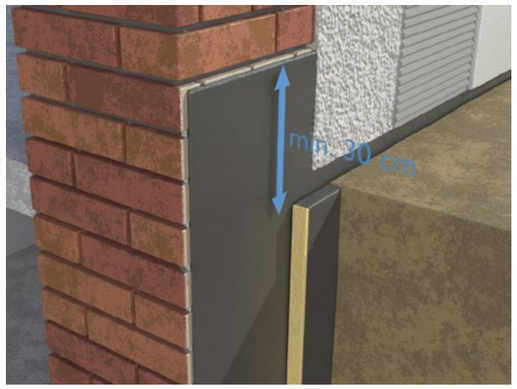


08

Plastering the Plinth and Backfilling the Excavation

When applying the plaster coat, a full-cover **BOLIX Z-PT** bonding slurry should be applied using the "wet-on-wet" method onto a freshly applied additional layer of **BOLIX H-HYBRID**.
Once the bonding coat has cured, proceed with the application of BOLIX renovation plasters.
The lower part of the plaster should be protected against capillary rise by applying **BOLIX H-HYBRID** at least 5 cm above the final ground level.

Backfilling should only be carried out after the waterproofing layer has fully dried.
The excavation should be backfilled in compacted layers using non-cohesive soil (e.g., sand or gravel mix) that is free from coarse fractions and sharp-edged particles.



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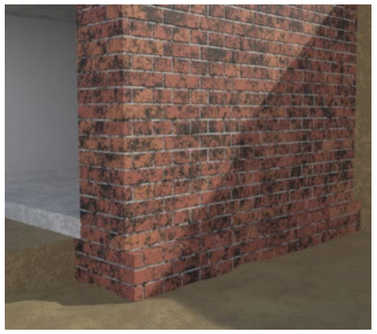
02B VERTICAL EXTERNAL WATERPROOFING

using thick-layer bituminous compounds BOLIX – waterproofing in existing buildings

01

Foundation Exposure

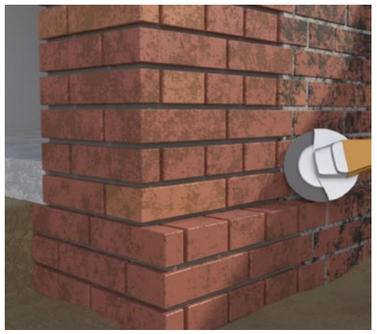
Foundations should be exposed in sections approximately 2–3 meters wide.



02

Surface preparation

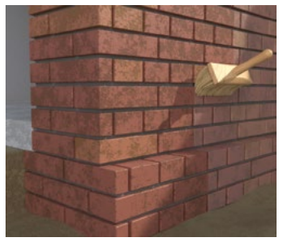
The substrate should be sound and clean. If tar is present, it must be removed. Damaged joints should be removed to a depth of approximately 2 cm.

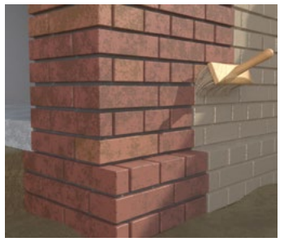


03

Priming, Bonding Bridge Application, and Surface Levelling

a) Mineral substrate
Apply **BOLIX P-KH** primer evenly in a single coat, diluted with water in a 1:1 ratio.
Shortly after priming, apply one layer of **BOLIX H-1KS** mortar.
While the applied slurry is still fresh, apply **BOLIX Z-WOD** to close joints and level the surface.





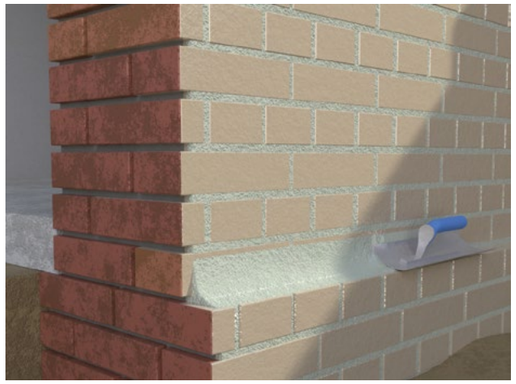
03

b) Existing, Adequately Load-Bearing Bituminous Waterproofing
Clean the existing bituminous waterproofing layer, ensuring it is firmly bonded to the substrate and structurally sound. Apply a bonding layer by scratch-coating the surface with **BOLIX H-HYBRID** compound.
While the compound remains fresh (using the wet-on-wet method), apply **BOLIX Z-WOD** to seal the joints and level the surface.

Fillet Formation

04

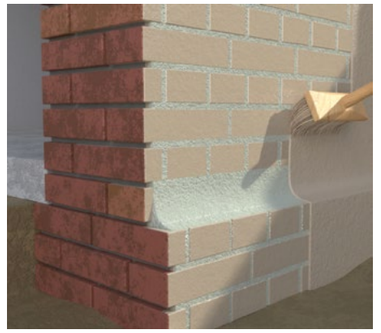
a) Mineral Substrate
Apply a single, even coat of **BOLIX P-KH primer** diluted with water in a 1:1 ratio. Shortly after priming, apply one layer of **BOLIX H-1KS** mortar. While the **BOLIX H-1KS** layer is still fresh, and extended at least 20 cm beyond the designated fillet area, form the fillet using **BOLIX Z-WOD** mortar, applying the wet-on-wet method. Maintain a minimum fillet radius of 4 cm.



b) Existing, Adequately Load-Bearing Bituminous Waterproofing
Clean the existing bituminous waterproofing layer, ensuring it is well-adhered to the substrate and structurally sound. Apply a bonding layer by scratch-coating the surface with **BOLIX H-HYBRID** compound, extending at least 20 cm beyond the designated fillet area.
While the compound remains fresh (wet-on-wet method), form the fillet using **BOLIX Z-WOD** mortar, maintaining a minimum fillet radius of 4 cm.

05

Application of Rigid Waterproofing Resistant to Negative Water Pressure
(for damp masonry)

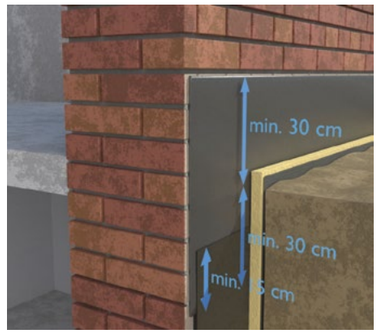


Apply a single, even coat of **BOLIX P-KH** primer diluted with water in a 1:1 ratio.
Shortly after priming, apply one layer of **BOLIX H-1KS** mortar from a level 15 cm below the bottom edge of the foundation footing up to 30 cm above ground level. Allow the mortar to cure properly. This procedure should be omitted for dry masonry.compounds BOLIX – waterproofing in existing buildings

Sealing the Plinth Area Against Splash Water

06

Apply **BOLIX H-HYBRID** hybrid waterproofing in two layers, from 30 cm below ground level to at least 30 cm above ground level. The bituminous waterproofing, applied at a later stage, should overlap the previously applied hybrid waterproofing by a minimum of 15 cm.



Priming for Bituminous Waterproofing

07

Prime the substrate with an aqueous solution of **BOLIX B-2SM** Uni bituminous compound or **BOLIX B-MB** Emulsion.

08

Application of Thick-Layer Bituminous Waterproofing Compound

Apply the thick-layer bituminous compound **(BOLIX B-1SM EXPRESS, BOLIX B-2SM PROFI, or BOLIX B-2SM UNI)** in at least two layers.
Each subsequent layer should be applied after the previous one has dried.

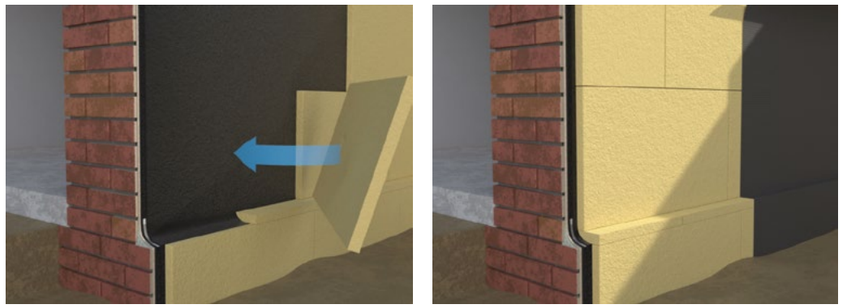
For heavy-duty waterproofing systems designed to protect against pressurized water or backed-up infiltrating water, embed **BOLIX HD** 158/S fiberglass reinforcement mesh into the first layer, ensuring an overlap of at least 10 cm.
Additionally, the use of a sealing tape is recommended in the fillet area.

09

Protection of the Waterproofing Layer / Thermal Insulation

The minimum protection consists of two layers of construction-grade PE foil, each with a thickness of at least 0.2 mm.
As an alternative to PE foil, dedicated protection and drainage mats may be used. In such cases, the filter geotextile should be installed on the soil side.

If required, once the waterproofing has completely dried, proceed with bonding XPS thermal insulation boards using the thick-layer bituminous compound, and then secure them with, for example, a dimpled drainage membrane.

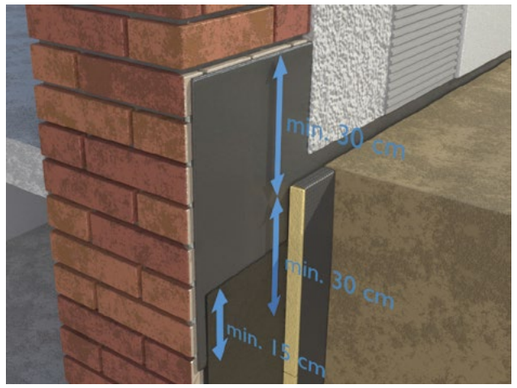


10

Rendering the Plinth and Backfilling the Excavation

When applying the render coat, use the wet-on-wet method to apply **BOLIX Z-PT** full-coverage bonding slurry onto a freshly applied additional layer of **BOLIX H-HYBRID**. Once the bonding layer has cured, proceed with the application of BOLIX renovation renders.
To protect against capillary rise, it is recommended to apply **BOLIX H-HYBRID** at least 5 cm above the final ground level in the lower section of the render.

Backfilling should be carried out only after the waterproofing layer has fully dried, and must be done in compacted layers. It is recommended to use non-cohesive soil (e.g., sand or gravel mix), free from coarse particles and sharp edges.



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03

VERTICAL INTERNAL WATERPROOFING

There are situations in which the execution of secondary vertical external waterproofing is either technically unfeasible or economically unjustified. In such cases, internal waterproofing of the external walls is applied, using rigid waterproofing resistant to negative water pressure, such as BOLIX H-1KS, finished with BOLIX T-RH renovation render.

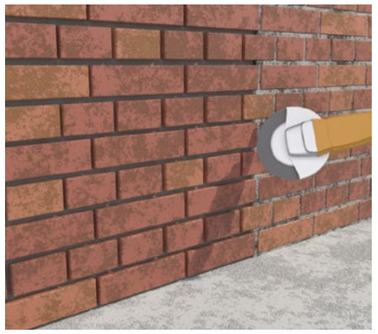
VERTICAL INTERNAL WATERPROOFING

using BOLIX H-1KS rigid mineral waterproofing - for existing buildings

01

Substrate Preparation

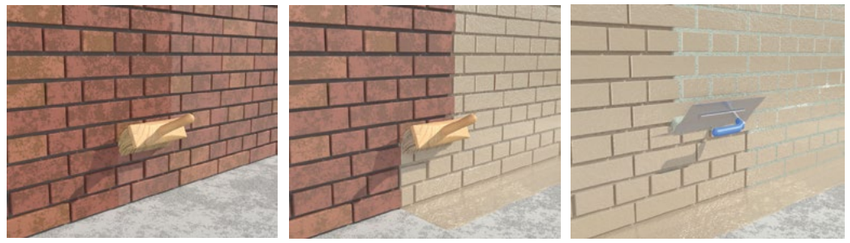
Damaged, salt-contaminated, or damp plasters must be completely removed.
The substrate must be structurally sound and properly cleaned. If tar residues are present, they must be completely removed. Damaged mortar joints should be removed to a depth of approximately 2 cm.



02

Priming, Bonding Bridge Application, and Surface Levelling

a) Mineral Substrate
Apply a single, even coat of **BOLIX P-KH** primer diluted with water in a 1:1 ratio. Shortly after priming, apply one layer of BOLIX H-1KS mortar. While the slurry is still fresh, apply **BOLIX Z-WOD** to seal joints and level the substrate surface.

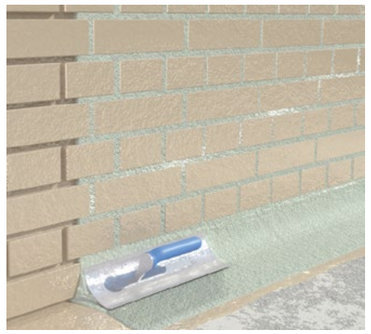


b) Existing, Adequately Load-Bearing Bituminous Waterproofing

Clean the existing bituminous waterproofing to ensure it is well-adhered and structurally sound.
Apply a bonding layer by scratch-coating with **BOLIX H-HYBRID** compound. While the compound is still fresh (wet-on-wet method), apply **BOLIX Z-WOD** to seal joints and level the surface.

03

Fillet Formation



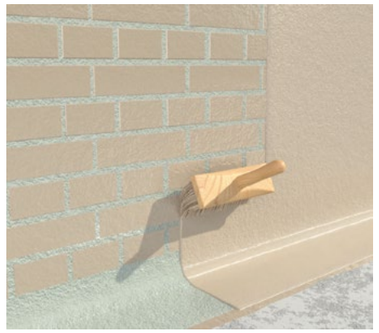
a) Mineral Substrate
Apply a single, even coat of **BOLIX P-KH** primer diluted 1:1 with water. Shortly after priming, apply one layer of **BOLIX H-1KS** mortar. While the **BOLIX H-1KS** layer is still fresh, and extended at least 20 cm beyond the intended fillet area, form the fillet using **BOLIX Z-WOD** mortar, applying the wet-on-wet method.Maintain a minimum fillet radius of 4 cm.

b) Existing, Adequately Load-Bearing Bituminous Waterproofing

Clean the existing bituminous waterproofing layer, ensuring it is well-adhered to the substrate and structurally sound. Apply a bonding layer by scratch-coating with **BOLIX H-HYBRID**, extending at least 20 cm beyond the intended fillet area. While the compound is still fresh, form the fillet using **BOLIX Z-WOD** mortar with the wet-on-wet method, maintaining a minimum fillet radius of 4 cm.

04

Application of Rigid Waterproofing Resistant to Negative Water Pressure



Apply **BOLIX H-1KS** mortar in at least two layers.
Each subsequent layer should be applied onto the previous one while it is set but still damp, using a cross-coat method (each layer applied perpendicular to the previous one), until the required total waterproofing thickness is achieved. The final layer should be smoothed with a trowel.

For wall substrates where there is a risk of cracking, it is recommended to apply an additional two layers of **BOLIX H-HYBRID** hybrid waterproofing.

05

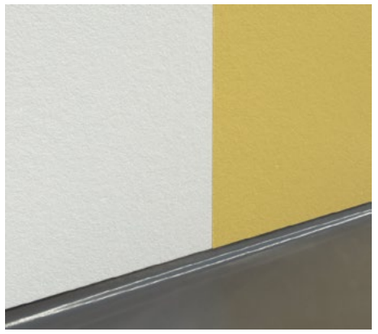
Application of roughcast and renovation render.

When applying the render coat, apply a full-coverage **BOLIX Z-PT** splatterdash coat using the „wet-on-wet" method directly onto the freshly applied additional layer of **BOLIX H-1KS**. After at least 24 hours, apply **BOLIX T-RH** renovation render to a minimum thickness of 2 cm, smooth the surface, and leave to cure fully. To achieve a smooth finish, **BOLIX T-ND** or **BOLIX T-ND^{TRAS}** render can be applied. After initial setting, float the surface (e.g., using a felt or sponge float).

06

Priming and Painting (optional).

After the render coats have fully cured, apply **BOLIX SG-W** primer and allow it to dry for at least 24 hours. Then apply two coats of **BOLIX Harmonic Silicate** polysilicate paint, characterised by high vapour permeability.



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04

HORIZONTAL WATERPROOFING

One of the most common causes of moisture in building walls is capillary rising damp due to absent or defective horizontal waterproofing. In such cases, secondary horizontal waterproofing is commonly applied, for example using an injection method, which has been successfully used in existing buildings for many years.

For this purpose, we recommend the use of BOLIX H-KI 80 injection cream. This product is specifically designed for secondary horizontal waterproofing by injection into damp masonry. It creates a polysiloxane barrier that prevents capillary moisture rise by hydrophobizing and narrowing the capillary pores. During its reaction with water, the product undergoes hydrolysis, releasing ethanol. Thanks to its cream consistency, injection holes in walls with voids and cracks do not require prior filling with cement slurry. The product can be used in walls with moisture saturation levels of up to 95%.

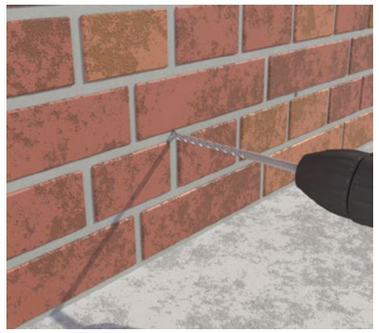
APPLICATION OF HORIZONTAL WATERPROOFING

Using BOLIX I-Krem Injection Cream – Waterproofing in Existing Buildings

01

Drilling of Injection Holes

Drill horizontal holes with a diameter of 12 mm into the horizontal mortar joint at intervals of 8–12 cm (centre-to-centre). Ensure that the distance between the end of each drilled hole and the external surface of the wall is approximately 2 cm.



02

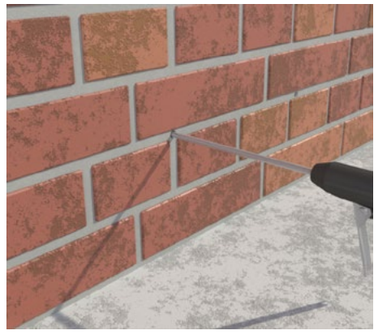
Cleaning of Drilled Holes

Clean the drilled holes thoroughly using compressed oil-free air or a vacuum cleaner.

03

Injection Process

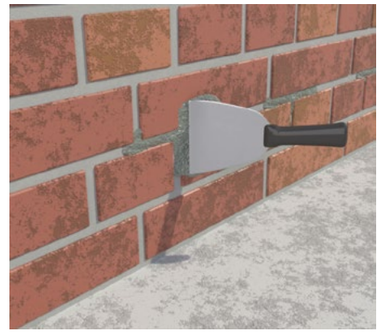
Apply the injection cream using a non-pressure method with an appropriate dispensing gun fitted with a hose/tube or by employing a low-pressure pump (pressure below 3 bar).



04

Sealing the Injection Holes

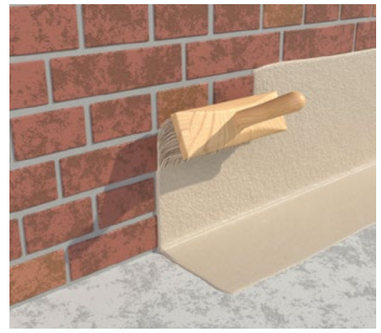
Immediately after filling, seal the injection holes using **BOLIX Z-WOD** mortar, and leave to dry completely.



05

Sealing the Injection Area

In the area of the performed injection, apply a surface sealing coat using **BOLIX H-1KS** mortar, ensuring the mortar covers at least 15 cm above and below the line of injection holes.



The above descriptions are intended as general guidelines for carrying out repair works and do not constitute a technical design or conservation programme. Products should be used in accordance with the instructions provided in their technical data sheets. BOLIX S.A. guarantees the quality and performance of its products but does not accept responsibility for the conditions or manner of their use. The information presented reflects the current state of knowledge and application techniques as of the date this document was prepared. All works should be carried out in accordance with good construction practice and health and safety regulations.

05

BOLIX KAMIENICA PRODUCTS

BOLIX P-KH

Silicone-based priming and hydrophobising agent designed for mineral substrates, intended for use under waterproof coatings.

pH: approx. 10
Bulk density: approx. 1.03 g/cm³
Colour: colourless

BOLIX H-KI 80

Injection cream for the application of secondary horizontal waterproofing in damp masonry, creating a polysiloxane barrier that prevents capillary rising damp by hydrophobising the capillary walls and narrowing their lumen.

Bulk density: approx. 0.90 kg/dm³
Colour: white/milky
Active ingredient content: approx. 80% by weight

BOLIX Z-WOD

Waterproof mortar for repairs, sealing, and leveling layers.

Colour: grey
Thickness range: 2 to 30 mm
Compressive strength: Class CS IV according to PN-EN 998-1

BOLIX H-1KS

Rigid, single-component mortar resistant to negative water pressure, designed for sealing building elements and structures against moisture, infiltrating water, and pressurised water.

Colour: grey
Adhesion to concrete substrate according to PN-EN 1504-3: ≥ 0.8 MPa
Elastic modulus according to PN-EN 1504-3: ≥ 10 GPa
Diffusion resistance factor (μ): ≤ 60

BOLIX H-HYBRID

Fast-setting, mineral, hybrid waterproofing compound of the FPD type for creating bonded seals on building elements and structures against moisture/water from the substrate side, infiltrating water, and pressurised water.

Colour: dark grey
pH: approx. 11.1
Density of the ready-to-use product: approx. 1.10 g/cm³
Thickness loss during drying: ≤ 10%
Waterproofing coat thickness after drying: 2 to 5 mm
Diffusion resistance factor (μ): ≤ 1800
Crack bridging ability: ≥ 2 mm at a layer thickness of ≥ 3 mm

BOLIX B-MB Emulsion

Bitumen-latex emulsion. When diluted with water (1 part emulsion : 5 parts water), it is used as a primer coating for bituminous products.

BOLIX B-1SM EXPRESS

Single-component, thick-layer bitumen-rubber compound with polystyrene filler (PMBC type) for waterproof coatings and installation of XPS boards.

Bulk density: approx. 0.80 g/cm³
Colour: black
Solids content: minimum 90%
Waterproofness according to PN-EN 15814: class W2A
Crack-bridging ability according to PN-EN 15814: class CB2
Compressive strength according to PN-EN 15814: class C2A

BOLIX B-2SM PROFI

Two-component, thick-layer bitumen-rubber compound with polystyrene filler (PMBC type) for waterproof coatings and installation of XPS boards.

Bulk density of the ready-to-use product: approx. 0.88 g/cm³
Colour: black
Solids content: minimum 80%
Waterproofness according to PN-EN 15814: class W2A
Crack-bridging ability according to PN-EN 15814: class CB2
Compressive strength according to PN-EN 15814: class C2A

BOLIX B-2SM UNI

Two-component, thick-layer bitumen-rubber compound reinforced with fibres (PMBC type) for waterproof coatings and installation of XPS boards.

Bulk density of the ready-to-use product: approx. 1.17 g/cm³
Colour: black
Solids content: minimum 70%
Waterproofness according to PN-EN 15814: class W2A
Crack-bridging ability according to PN-EN 15814: class CB2
Compressive strength according to PN-EN 15814: class C2A

BOLIX T-ND
BOLIX T-ND^{TRAS}

Lime-cement repair and decorative plaster for finishing layers on existing and newly applied mineral, thick-layer renders; BOLIX T-ND^{TRAS} additionally contains trass.

Colour: white (BOLIX T-ND) / rustic white (BOLIX T-ND^{TRAS})
Grain size: up to 0.5 mm
Reinforcing microfibres included: yes
Thickness range: 2 to 8 mm
Compressive strength according to PN-EN 1015-11: Class CS II (1.5 to 5.0 MPa)

BOLIX HD 158/S

Alkali-resistant reinforcing mesh made of glass fibre

Weave type: gauze
Length: ≥ 50 m
Width: 1.1 m (±10%)
Colour: orange
Surface weight: 160 g/m² (±10%)

BOLIX HYDRO-TW

Sealing tape for reinforcing critical areas such as junctions between horizontal and vertical surfaces, expansion joints, etc., used in waterproofing applications with BOLIX H-HYBRID compound.

Surface weight: 470 g/m² (±5%)
Waterproofness: no leakage at pressure ≥ 0.5 MPa
Tensile strength (coated part):
Across: ≥ 2.0 MPa
Along: ≥ 7.3 MPa
Stress at break (across coated part): ≥ 0.6 MPa
UV resistance: resistant

SEALING TAPE

Sealing tape for reinforcing critical areas such as junctions between horizontal and vertical surfaces, expansion joints, etc., used in waterproofing applications with thick-layer bituminous BOLIX PMBC compounds.

Surface weight: approx. 111 g/m
Waterproofness: no leakage at pressure ≥ 0.1 MPa
Longitudinal tensile strength (with nonwoven backing): ≥ 5.5 MPa
Transverse tensile strength: ≥ 3.1 MPa
UV resistance: resistant

BOLIX Z-PT

Base plaster mortar (WTA) for applying a scratch coat ("spritz") before applying renovation plaster such as BOLIX T-RH.

Colour: grey
Grain size: up to 2 mm
Compressive strength according to PN-EN 1015-11: ≥ 6 MPa (Class CS IV)

BOLIX T-RH

Renovation, hydrophobic plaster (WTA).

Colour: white
Grain size: up to 2 mm
Compressive strength according to PN-EN 1015-11: Class CS II (1.5 to 5.0 MPa)
Water vapour permeability coefficient (μ) according to PN-EN 998-1: ≤ 9
Water absorption due to capillary rise according to PN-EN 1015-18: > 0.3 kg/m² after 24 hours
Porosity by volume: > 40%
Water penetration after water absorption test according to PN-EN 998-1: < 5 mm

BOLIX SG-W

Silicate-based sanitising and priming agent for use under BOLIX HARMONIC SILICATE paint.

pH: approx. 11
Colour: colourless

BOLIX Harmonic Silicate

Polysilicate paint for interior walls and ceilings.

pH: approx. 8.5
Colour range: selected colours from the BOLIX SPEKTRUM INSIDE palette – 70 colours
Gloss level: deep matte – approximately 1.5 [85° angle]
Wet scrub resistance according to PN-EN 13300: Class 2
Opacity (quality coverage) according to PN-EN 13300: Class 1
Equivalent air layer thickness Sd according to PN-EN ISO 7783: ≤ 0.025 m at a dry film thickness of 100 μm

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