

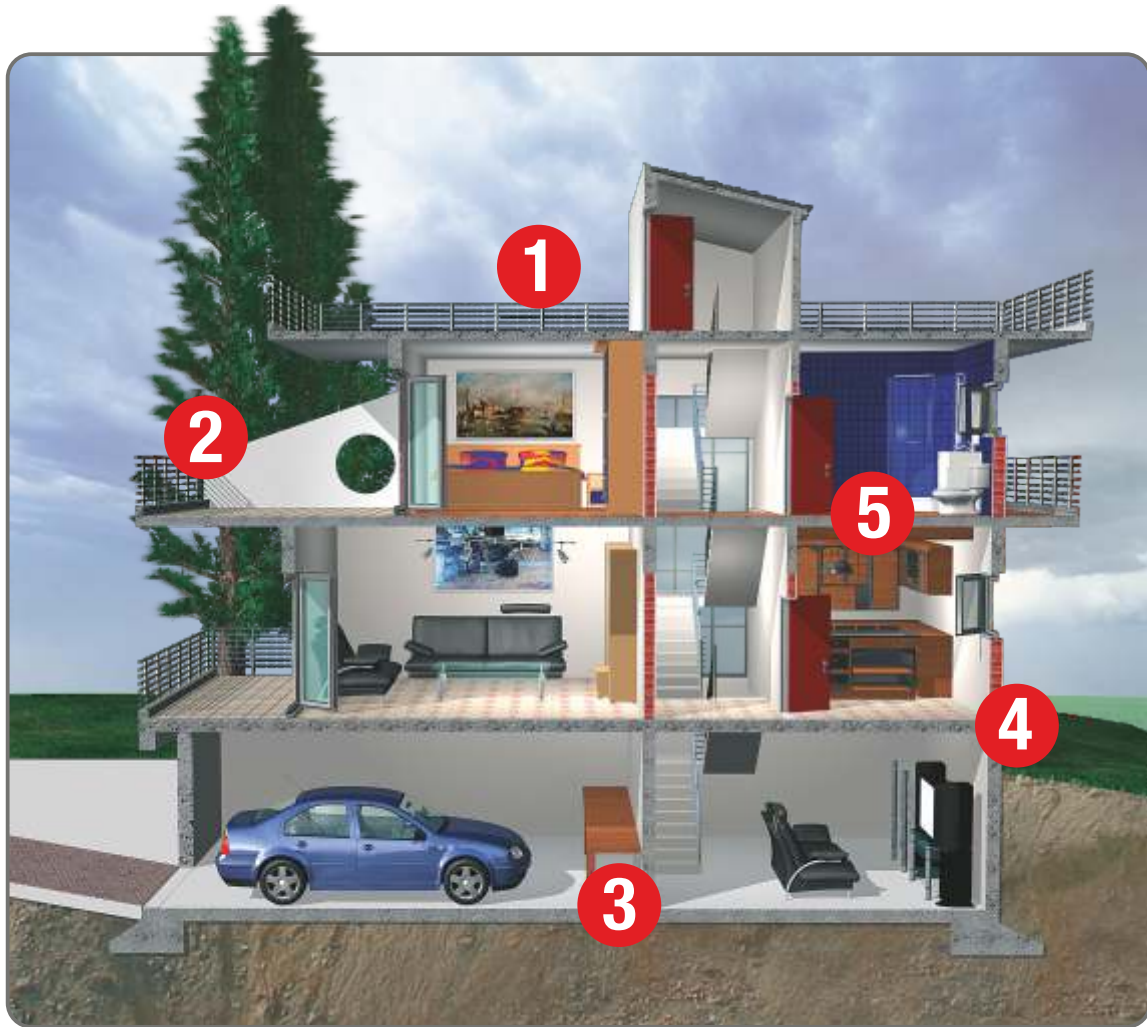
isomat

building quality

Waterproofing Problems of Buildings

Step by step
presentation
of structural
solutions





Waterproofing Problems of Buildings

The proper waterproofing of buildings as well as the problems caused by insufficient waterproofing or its bad maintenance concern both professionals and individuals.

In ISOMAT we have developed integrated solutions for any waterproofing problem, as a result of our high expertise and our long experience. In this brochure you can find solutions to the most common waterproofing difficulties. With a step by step (picture + text) presentation of the activities required in each case, we believe that this brochure can be a very helpful guide for anyone interested.

However, both the factors causing these problems and the dominant local conditions in each case vary. For this reason, it is impossible to describe all the particular problems in one brochure. Therefore, if you need more information you can consult the Technical Support Department of ISOMAT. Our highly specialized and experienced engineers are ready to provide you with the proper technical solution to any difficulty arising in your construction works.

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1 WATERPROOFING OF TERRACES

THE PROBLEM

Moisture problems in the top floor apartments are a common phenomenon. Such problems are caused either because the terraces have no waterproofing layer or because the waterproofing layer is inappropriate (wrong materials, bad application, lack of preservation). Following, there are presented different ways of solving this problem according to its extent, the current condition of the terrace and its future usage.

LOCAL WATERPROOFING OF CRACKS, TILES AND JOINTS

In many cases local waterproofing of cracks or conjunction joints between different materials is sufficient in order to solve the moisture problems of a terrace. This is the most economical solution of waterproofing.



Primarily, there are detected any cracks in the cement mortars, the mosaic or in the old waterproofing layer. Then, any dust or grease are cleaned.



The surface should be dry. Then, the crack is primed along its length and in a width of approximately 12 cm, with the special primer **ISO-PRIMER**.



After the primer has dried, **ISO-FLEX** or **ISO-FLEX-T25** is applied locally with a brush.



The strips of glass mesh or polyester fabric are positioned while **ISO-FLEX** or **ISO-FLEX-T25** is still fresh.



After the first layer of **ISO-FLEX** or **ISO-FLEX-T25** has dried, two further layers are applied along the cracks.



Intersection of the terrace with the vertical structures (parapet, stairwell termination etc.) should be clean and dry. The surface is primed with **ISO-PRIMER**.



After the primer has dried, **ISO-FLEX** or **ISO-FLEX-T25** is applied along the intersection in a width of approximately 12 cm.



While the first layer of **ISO-FLEX** or **ISO-FLEX-T25** is still fresh, a glass mesh or polyester fabric strip is positioned from both sides of intersection.



Two further layers of **ISO-FLEX** or **ISO-FLEX-T25** are applied, each one only after the prior has completely dried.



Joints between terrace and the metallic elements (rain pipes, gutters etc.), should be clean from dust and rust.



The dry surface is primed with **ISO-PRIMER** all around the joint.



After the primer has dried, **ISO-FLEX** or **ISO-FLEX-T25** is applied all around the joint, including the vertical element.



While the first layer of **ISO-FLEX** or **ISO-FLEX-T25** is still fresh, a glass mesh or polyester fabric strip is positioned.



Afterwards, two further layers of **ISO-FLEX** or **ISO-FLEX-T25** are applied to the joint.

MATERIALS

- **ISO-FLEX** Brushable elastomeric liquid membrane (total consumption: 1.0-1.5 kg/m²)
- **ISO-FLEX-T25** Brushable elastomeric liquid membrane (total consumption: 1.0-1.5 kg/m²)
- **ISO-PRIMER** Primer of ISO-FLEX or ISO-FLEX-T25 (consumption: 0.2-0.3 kg/m²)
- **Polyester cloth (TREVIRA) or fiberglass mesh (width 10 cm)**, for reinforcing waterproofing layers

WATERPROOFING OF TERRACES WITH SLOPE (WITHOUT STANDING WATER)

It is very common, terraces with mosaic or cement mortar grade to have moisture problems. Following there are explained two different solutions:

- 1) Waterproofing of terraces with brushable elastomeric acrylic sealant **ISOFLEX** or **ISOFLEX-T25**,
- 2) Waterproofing of terraces with bituminous membranes covered with mineral chipping or aluminium leaf.

1st Solution: Waterproofing with the brushable elastomeric acrylic sealants **ISOFLEX** or **ISOFLEX-T25**.

For the reparation of the substrate it can be used the polymer-modified cement mortars **DUROCRET** or **DUROCRET-FAST**. **ISOFLEX** or **ISOFLEX-T25** should be applied on a clean and dry substrate.



The terrace is primed with **ISO-PRIMER**.



After the primer has dried, a layer of **ISOFLEX** or **ISOFLEX-T25** is applied along the intersection of the terrace with vertical structures (parapet etc.) as well as along any cracks, tiles and joints between the terrace and any metallic element (rain pipes, gutters etc). While it's still fresh this layer is reinforced with a glass mesh or polyester fabric strip of 10 cm width (**TREVIRA**).



Afterwards, a layer of **ISOFLEX** or **ISOFLEX-T25** is applied with a brush or roller. If it is necessary, **ISOFLEX** or **ISOFLEX-T25** is diluted 5% with water, in order to be applied easier.



A second coat of **ISOFLEX** or **ISOFLEX-T25** should be applied crosswise, once the first one has dried and can be walked on.



The final result is a uniform, elastic and waterproofing membrane without joints or seams. The main advantage of **ISOFLEX** or **ISOFLEX-T25** is their durability to ageing. Recommendation: In cases where the waterproofing layer should have high resistance to extreme temperature conditions (from -25°C to +120°C), then it is recommended the use of **ISOFLEX-T25**, instead of **ISOFLEX**.

MATERIALS

- **ISOFLEX** Brushable elastomeric liquid membrane (total consumption: 1.0-1.5 kg/m²)
- **ISOFLEX-T25** Brushable elastomeric liquid membrane (total consumption: 1.0-1.5 kg/m²)
- **ISO-PRIMER** Primer of **ISOFLEX** or **ISOFLEX-T25** (consumption: 0.2-0.3 kg/m²)
- **Polyester cloth (TREVIRA) or fiberglass mesh**, for reinforcing waterproofing layers
- **DUROCRET** Polymer-modified repairing cement mortar (consumption: 2-3 kg per meter of groove)
- **DUROCRET-FAST** Fast-setting polymer-modified repairing cement mortar (consumption: 2-3 kg per meter of groove)

2nd Solution: Waterproofing of terraces with bituminous membranes covered with mineral chipping or aluminium leaf.



Any necessary repairs to the substrate should be carried out using the polymer-modified cement mortars **DUROCRET** or **DUROCRET-FAST**. Bituminous membranes should be laid on a clean and dry substrate.



The terrace is primed with the bituminous emulsion **ISOPAST** (diluted 30-50% with water) or with the bituminous varnish **ISOLAC-BT**.



After the primer has dried, the bituminous membranes are heated with a blowtorch and stuck to the surface by simple pressure, starting from the lower points and vertical to the gradients.



Adjacent membranes should overlap each other at a width of approx. 10 cm. The joints are sealed with a blowtorch and by being pressed with a trowel. Afterwards, **ISOFLX** or **ISOFLX-T25** is applied to all joints.



The extensions of membranes to the vertical surfaces (parapets, stairs, termination etc.), are sealed by heating with a blowtorch and then by being pressed with a trowel.



The gutters should be cleaned and then coated with **ISOFLX** or **ISOFLX-T25**, reinforced with polyester fabric strip (**TREVIRA**).



Joints between membrane and the metallic elements (rain pipes, banisters etc.), are sealed with **ISOFLX** or **ISOFLX-T25**, reinforced with polyester fabric strip (**TREVIRA**).



Using bituminous membranes is an ideal solution for waterproofing, as long as the membranes are sealed carefully and the joints with other elements are specially treated. It is recommended bituminous membranes to be placed by professionals.

MATERIALS

- **ISOGUM P** Plastomeric bituminous membrane (APP) with mineral chipping
- **ISODIEN 4 PF ALU** Elastomeric bituminous membrane with aluminium leaf overlay
- **ISOPAST** Bituminous emulsion (consumption: 0.3-0.5 kg/m²)
- **ISOLAC-BT** Bituminous varnish (consumption: 0.25-0.3 kg/m²)
- **ISOFLX** Brushable elastomeric liquid membrane (total consumption: 1.0-1.5 kg/m²)
- **ISOFLX-T25** Brushable elastomeric liquid membrane (total consumption: 1.0-1.5 kg/m²)
- **TREVIRA** Polyester cloth (width 10 cm), for reinforcing waterproofing layers

WATERPROOFING OF TERRACES WITHOUT SLOPE (WITH STANDING WATER)



The substrate should be thoroughly cleaned from any loose particles, grease, dust etc.



The substrate is dampened, without leaving any water puddles.

Corners like the joint of slab with vertical structures (parapet, stairwell termination etc), should be dampened and filled in with **DUROCRET** or **DUROCRET-FAST** and rounded smooth with a cylindric object (bottle etc.) in order, a curved groove to be formatted.



The content of component A (mortar) is added into the liquid component B (elastifying agent) and the indicated water, under continuous stirring, until a uniform mixture of **AQUAMAT-ELASTIC** is formed.



The first layer of **AQUAMAT-ELASTIC** is applied by brush, as wide as the reinforcement (1 m). The slurry should be exceeded to the vertical structures (parapet etc.) at least 15-20 cm up.



While the layer of **AQUAMAT-ELASTIC** is still fresh, the reinforcing material (**TREVIRA** - 1 m width) is positioned and embodied.



After drying, the reinforced with **TREVIRA** first layer is covered by a second layer of **AQUAMAT-ELASTIC**.



A 3rd layer of white **AQUAMAT-ELASTIC** is applied crosswise and once the previous layer has dried. The thickness of each layer should not exceed the 1 mm.



The final layer of **AQUAMAT-ELASTIC** should be white, in order to reduce the absorption of heat from the sun's rays and extend the life of the waterproofing.

MATERIALS

- **AQUAMAT-ELASTIC** Elastic, 2-component cement-based brushable sealing slurry (consumption: 1 kg/m²/layer)
- **TREVIRA** Polyester cloth for reinforcing waterproofing layers
- **DUROCRET** Polymer-modified cement mortar (consumption: 2-3 kg per meter of groove)
- **DUROCRET-FAST** Fast-setting polymer-modified repairing cement mortar (consumption: 2-3 kg per meter of groove)

WATERPROOFING OF TERRACES AND COVERING WITH TILES

Any necessary repairs to the gradient should be carried out with the polymer-modified cement mortars **DUROCRET** or **DUROCRET-FAST**. If it is necessary to form sufficient cement mortar grade for the terrace, then it is recommended the use of the low weight mortar **SCREED-100**. The next steps of waterproofing can be applied after 7 days.



Substrate should be thoroughly cleaned from any loose particles, grease, dust etc.



The substrate is dampened, without leaving any water puddles.



The content of component A (mortar) is added into the liquid component B (elastifying agent), under continuous stirring, until a uniform viscous mixture of **AQUAMAT-FLEX** is formed.



A layer of **AQUAMAT-FLEX** is applied locally, along intersections of terrace with vertical structures (parapet etc.), along possible cracks, tiles and joints between the terrace and any metallic elements (rain pipes, gutters etc). While it's still fresh, this layer is reinforced with a polyester fabric strip (**TREVIRA** - width 10 cm). If it is necessary, a second layer of **AQUAMAT-FLEX** is applied, in order to achieve better embodiment of the reinforcement with **AQUAMAT-FLEX**.

After the local layer has dried, a layer of **AQUAMAT-FLEX** is applied with brush all over the roof surface.



A 2nd layer of **AQUAMAT-FLEX** is applied crosswise and once the previous layer has dried. The thickness of each layer should not exceed the 1 mm.



For the adhesion of tiles the elastic tile adhesive **ISOMAT AK-22** is used.



For the tile grouting we use **MULTIFILL SMALTO 1-8** or **MULTIFILL 3-15** reinforced with the additive **DS-99**.



AQUAMAT-FLEX and **ISOMAT AK-22** constitute a perfect system for waterproofing-adhesion of tiles.

MATERIALS

- **AQUAMAT-FLEX** Flexible, 2-component cement-based brushable sealing slurry (consumption: 1 kg/m²/layer)
- **TREVIRA** Polyester cloth (width 10 cm), for reinforcing waterproofing layers
- **ISOMAT AK-22** Flexible, high quality, tile adhesive for highly demanding substrates (consumption: 1.5-4.0 kg/m²)
- **MULTIFILL SMALTO 1-8** Colored, water-repellent tile grout with porcelain effect for width 1-8 mm
- **MULTIFILL 3-15** Tile grout for width 3-15 mm
- **DS-99** Polymer-based admixture for tile adhesives and joint grouts

WATERPROOFING OF TERRACES AND AFTERWARDS THERMO-INSULATION (INVERTED ROOFS)

Any necessary repairs to the gradient should be carried out using the polymer-modified cement mortars **DUROCRET** or **DUROCRET-FAST**.

If it is necessary to form sufficient cement mortar grade for the terrace, then it is recommended the use of the low weight mortar **SCREED-100**. The next steps of waterproofing can be applied after 7 days.



Substrate should be thoroughly cleaned from any loose particles, grease, dust etc.



The substrate is dampened, without leaving any water puddles.



The content of component A (mortar) is added into the liquid component B (elastifying agent), under continuous stirring, until a uniform viscous mixture of **AQUAMAT-FLEX** is formed.



The first layer of **AQUAMAT-FLEX** is applied by brush, as wide as the reinforcement (1 m). The slurry should expand to the vertical structures (parapet etc.) at least 15-20 cm up.



While the layer of **AQUAMAT-FLEX** is still fresh the reinforcing material (**TREVIRA** - 1 m width) is positioned and embodied.



AQUAMAT-FLEX is applied over the entire roof surface, in strips of 1 m.



The sheets of reinforcing material should be positioned in sequence so that they overlap each other by 10 cm.

After drying, the reinforced first layer is covered with a 2nd layer of **AQUAMAT-FLEX**.



A 3rd coat of **AQUAMAT-FLEX** should be applied crosswise once the previous one has dried. The thickness of each layer should not exceed the 1 mm.



On top of the waterproofing layer and after it has dried out, the extruded polystyrene boards are placed, fixed by their weight.



The polystyrene boards are covered with geotextile or plastic linoleum.



Finally, paving slabs or gravel (6-8 cm thick layer) are placed in order to protect the waterproofing and insulation layers from the sun and the wind. In this way we can also ensure that the terrace can be walked on.

- **AQUAMAT-FLEX** Flexible, 2-component cement-based brushable sealing slurry (consumption: 1 kg/m²/layer)
- **TREVIRA** Polyester cloth for reinforcing waterproofing layers

2 WATERPROOFING OF BALCONIES



THE PROBLEM

The points of a balcony that are more sensitive to moisture are:

- 1) the intersection between the baseboard and the floor or the wall.
- 2) cracked or absorptive tile grouts and
- 3) the absorptive coats of a balcony (old mosaic, schists etc.)

The problems of moisture could appear upside or downside of the balcony, to the walls or parapets. Moisture could appear as yellow spots, ablation of colour, weak or crumbling plaster or fallen parts of concrete. Problems of moisture should be solved before the repair of damages. To residences, which are under construction, waterproofing of balconies is similar to the one of terraces that will be covered with tiles (as presented in page 7).

PARTIAL SEALING OF DEFECTIVE PLASTER



Penetration of water to the intersection between the baseboard and the tile or the plaster has caused bulge and ablation of the colour.



Primarily, the damaged parts of colour are being removed with a spatula.



Thoroughly cleaning of the surface is necessary.



The surface is primed with **FLEX-PRIMER**.



In order to avoid soiling of the adjacent surfaces, the use of adhesive tape is necessary.



The intersection between the baseboard and the plaster is sealed with **ISOMASTIC-A**.



The mastic should be smoothed, while it is still fresh and the adhesive tape should be removed straight after.



After **ISOMASTIC-A** has dried, the surface is painted with **FLEXCOAT**.



The intersection between the baseboard and the tiles is sealed with **FLEX PU-40** or **ELASTOTAN**.



The mastic should be smoothed while it is still fresh and the adhesive tape should be removed straight after.



A good solution to the problem will provide the construction with durability in time.

MATERIALS

- **ISOMASTIC-A** Elastoplastic acrylic sealant
- **FLEX PU-40** Polyurethane moisture cured sealant
- **ELASTOTAN** One component moisture cured sealant
- **FLEXCOAT** High quality, elastic, waterproofing paint (consumption: 125 ml/m²/layer or totally 250 ml/m²)
- **FLEX-PRIMER** High quality acrylic water-based primer (consumption: 0.1-0.2 kg/m²)

RESTORATION OF CRACKED TILE GROUTS



The damaged tile grout should be removed mechanically (spatula, wheel etc.).



The joints should be carefully cleaned from dust or loose particles and then dampened.



MULTIFILL SMALTO 1-8 is added to water under continuous stirring.



Nextly, the grout should be spread all over the joints with a rubber float, in a diagonal direction to the joints, in order to fill them completely.



When the grout is dry enough, the surface is wiped with a slightly wet sponge.



A slightly wet sheet is used for the final cleaning.

MATERIALS

- **MULTIFILL SMALTO 1-8** Water-repellent tile grout with porcelain effect for width 1-8 mm

WATERPROOFING OF ABSORPTIVE TILE GROUTS



The surfaces should be carefully cleaned from dust etc.



NANOPRO-C is exuded onto the surface and applied with a squeegee.



The material is left to react for 5 minutes. Next the excessive material is removed.



The surface is cleaned with a slightly wet cloth.



The final cleaning of the surface can be done after 6 hours.



NANOPRO-C penetrates the pores and provides excellent water-repulsion to the surface without changing its appearance. Instead of **NANOPRO-C** it can also be used **PS-21** or **NANOPRO-L**, which protects the surfaces from oils.

MATERIALS

- **NANOPRO-C** Nano-impregnation for protecting porous surfaces (consumption: 0.1-0.2 lit/m²)
- **PS-21** Colorless water-repellent impregnation without solvents (consumption: 0.2-0.4 lit/m²)
- **NANOPRO-L** Nano-impregnation for protecting porous surfaces from oils (consumption: 0.1-0.2 lit/m²)

3 WATERPROOFING OF BASEMENTS

THE PROBLEM

Moisture problems in basements, due to underground water level or rain water, are a common phenomenon. The solution to such problems should be permanent because afterwards, reparation to basements is difficult and expensive. Therefore, it is required a careful selection and application of the right materials. Following there are presented the waterproofing solution for basements carried out during construction of the building and the waterproofing solution for basements after construction (internally).

WATERPROOFING OF BASEMENTS CARRIED OUT DURING CONSTRUCTION OF THE BUILDING



PLASTIPROOF, a type A plasticizer, is added to reinforced concrete.



The substrate should be thoroughly cleaned from any possible formwork oil residues, loose particles, dust etc.



Externally, any cavities in the concrete should be cleaned from loose particles, aggregates etc. Form wires and distance pieces should be cut at a 3 cm depth. Any working joints should be widened in a V-shape along their length, at a depth of 3 cm. The surface of the above areas should be thoroughly dampened and filled with polymer modified cement mortars **DUROCRET** or **DUROCRET-FAST**.



Depending on the water pressure, 2-4 layers of **AQUAMAT** are applied onto the external walls of the basement after dampening. The coating surface must extend to at least 50 cm above the ground level. Each layer must be fully dry before the next one is applied. To avoid cracking, each layer should not be thicker than 1 mm.



Intersections of the floor with vertical elements (concrete walls, columns) should be dampened and sealed along their entire length with **DUROCRET** or **DUROCRET-FAST** (formation of a "groove"). 2-4 layers of **AQUAMAT** are applied onto the basement floor. The floor coating must expand on the concrete walls or columns at a height of at least 50 cm above the groove formed at the intersection with the floor. Each layer must be fully dry before the next one is applied.



MATERIALS

- **AQUAMAT** Cement-based brushable sealing slurry (consumption: 1 kg/m²/layer or total 2-4 kg/m²)
- **DUROCRET** Polymer-modified cement mortar (consumption: 2-3 kg per meter of groove)
- **DUROCRET-FAST** Fast-setting, repairing cement mortar (consumption: 2-3 kg per meter of groove)
- **PLASTIPROOF** Plasticizer, type A - Concrete waterproofing admixture (consumption: 1.5-1.8 kg/m³ of concrete)

WATERPROOFING OF BASEMENTS AFTER CONSTRUCTION (INTERNALLY)

This method of waterproofing can be used both to new constructions (in cases where external waterproofing is difficult to be accomplished), and to old constructions. In the case of old constructions, the waterproofing layers should be applied to surfaces that can stand the negative pressure of water (slab, walls of basement etc.). For that reason, plasters and tiles are removed. If prior to the application the basement is flooded, contact the technical department of ISOMAT, in order to avoid mistakes or bad application.

Substrate should be thoroughly cleaned from any loose particles, dust etc.



Intersections of the floor with vertical elements (concrete walls, columns), should be dampened and sealed, along their entire length with polymer modified cement mortars **DUROCRET** or **DUROCRET-FAST** (formation of a "groove").



Form wires and distance pieces should be cut at a 3 cm depth. Any working joints should be widened in a V-shape along their length, at a depth of 3 cm. The surface of the above areas should be thoroughly dampened and filled with **DUROCRET** or **DUROCRET-FAST** polymer modified cement mortars. Also any cavities in the concrete should be filled with **DUROCRET** or **DUROCRET-FAST**.



Leaking points are fixed with **AQUAFIX**, a rapid-setting cement for instant sealing of water leaks.



After thoroughly dampening, the walls of basements are coated with **AQUAMAT** on 2-4 layers, depending on the pressure of water. The layer must expand on the concrete walls or columns at a height of at least 50 cm above the groove formed at the intersection with the floor. Each layer must be fully dry before the next one is applied. To avoid cracking, each layer should not be thicker than 1 mm.



Finally, **AQUAMAT** is applied in the same way to the floor of basement.



With **AQUAMAT**, a uniform waterproofing layer is shaped in the basement internally. Afterwards, a layer of coat, plaster or tiles can be applied.

MATERIALS

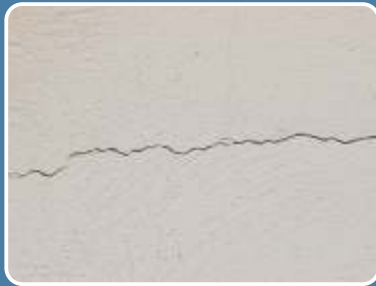
- **AQUAMAT** Cement-based brushable sealing slurry (consumption: 1 kg/m²/layer or total 2-4 kg/m²)
- **DUROCRET** Polymer-modified cement mortar (consumption: 2-3 kg per meter of groove)
- **DUROCRET-FAST** Fast-setting, repairing cement mortar (consumption: 2-3 kg per meter of groove)
- **AQUAFIX** Rapid-setting cement for instant sealing of water leaks

4 WATERPROOFING OF EXTERNAL WALLS

THE PROBLEM

External facade walls, besides providing aesthetic to the construction, must also protect the building from rain water and humidity. Cracks to plasters, low quality colours or highly absorptive surfaces enable water to penetrate. Moisture problems can appear as damaged colour or even total crumbling of plaster. The right solution to such problems must be a permanent and durable to time solution.

SEALING OF SINGLE CRACKS ON PLASTERS



Water can penetrate wall even from a single crack.



Wherever it is required, the crack is opened with a spatula in a width of 3 mm.



Crack should be thoroughly cleaned from dust.



The crack is sealed with elasto-plastic acrylic sealant **ISOMASTIC-A**.



While the sealant is fresh it is formed with a spatula.



After **ISOMASTIC-A** has dried, the crack is painted with **FLEXCOAT** along its length.

MATERIALS

- **ISOMASTIC-A** Elasto-plastic acrylic sealant
- **FLEXCOAT** High quality, elastic, waterproofing paint (consumption: 125 ml/m²/layer or totally 250 ml/m²)

WATERPROOFING AND COLOURING OF TOTALLY CRACKED PLASTERS



Extended cracks to plaster out of being an aesthetical problem, may sometimes also be dangerous for the plasters durability against water and freeze.



Substrate should be thoroughly cleaned from dust etc.



The surface is primed with **FLEX-PRIMER**. Especially when the plaster is crumbling, **FLEX-PRIMER** stabilizes it.



After drying, the surface is painted with a layer of **FLEXCOAT**.



In cases of multiple cracks, the first layer of **FLEXCOAT** is reinforced, while it is still fresh, with the polyester fabric (**TREVIRA**, 100 cm width).



Two more layers of **FLEXCOAT** should be applied in order to cover the polyester fabric (**TREVIRA**). Without using **TREVIRA** only one more layer of **FLEXCOAT** is enough.

MATERIALS

- **FLEXCOAT** High quality, elastic, waterproofing paint (consumption: 125 ml/m²/layer or totally 250 ml/m²)
- **FLEX-PRIMER** High quality acrylic water-based primer (consumption: 0.1-0.2 kg/m²)
- **TREVIRA** Polyester cloth for reinforcing waterproofing layers

WATERPROOFING AND COLOURING OF PLASTERS WITH DAMAGED COLOUR



Damaged colour is the first indication that the plaster is corrupted from water.



Old colour should be scratched with a spatula and the loose particles should be removed.



Substrate should be thoroughly cleaned from dust etc.



The surface is primed with **FLEX-PRIMER**.



After drying, the surface is painted with two layers of **FLEXCOAT**.



The 2nd layer of **FLEXCOAT** is applied after the first one has completely dried.

MATERIALS

- **FLEXCOAT** High quality, elastic, waterproofing paint (consumption: 125 ml/m²/layer or totally 250 ml/m²)
- **FLEX-PRIMER** High quality acrylic water-based primer (consumption: 0.1-0.2 kg/m²)

WATERPROOFING AND COLOURING OF WEAK PLASTERS



Crumbling plasters are a common phenomenon for walls with moisture problems.



The crumbling particles are removed with a spatula and the surface is thoroughly cleaned from dust.



The surface is primed with **FLEX-PRIMER** or **NANO-SEAL** and the surface is stabilized.



The plaster is fixed with the repairing mortar **UNICRET-FAST**, improved with the resin **ADIPLAST**.



After the plaster has been sufficiently set, it is smoothed by hand with a spongy float.



As soon as the plaster has dried, the surface is primed again with **FLEX-PRIMER**.



Finally, the surface is painted with two layers of **FLEXCOAT**.

MATERIALS

- **FLEXCOAT** High quality, elastic, waterproofing paint (consumption: 125 ml/m²/layer or totally 250 ml/m²)
- **FLEX-PRIMER** High quality acrylic water-based primer (consumption: 0.1-0.2 kg/m²)
- **NANO-SEAL** Waterproofing and stabilisation of surfaces (consumption: 0.1-0.2 kg/m²)
- **UNICRET-FAST** Fast-setting, white repairing mortar (consumption: 15 kg/m²/cm)
- **ADIPLAST** Polymer latex for the improvement of mortars

● WATERPROOFING AND COLOURING OF CRUMBLING PLASTERS



The humidity of the plaster is so intense that the plaster has crumbled till the masonry.



Primarily, all the crumbling parts of plaster and the dust are thoroughly cleaned.



Then the surface is primed and stabilised with **FLEX-PRIMER** or **NANO-SEAL**.



For the repairing there are used the polymer modified cement mortars **DUROCRET** or **DUROCRET-FAST**.



After 7 days and when **DUROCRET** or **DUROCRET-FAST** have dried, the surface is primed again with **FLEX-PRIMER**.



Finally, the surface is painted with **FLEXCOAT** in two layers.

MATERIALS

- **FLEXCOAT** High quality, elastic, waterproofing paint (consumption: 125 ml/m²/layer or totally 250 ml/m²)
- **FLEX-PRIMER** High quality acrylic water-based primer (consumption: 0.1-0.2 kg/m²)
- **NANO-SEAL** Waterproofing and stabilisation of surfaces (consumption: 0.1-0.2 kg/m²)
- **DUROCRET** Polymer-modified cement mortar (consumption: 15 kg/m²/cm)
- **DUROCRET-FAST** Fast-setting, repairing cement mortar (consumption: 17 kg/m²/cm)

● WATERPROOFING OF WALLS COVERED WITH NATURAL STONES OR DECORATIVE OVERLAYS



Walls covered with natural stones or decorative overlays need waterproofing without losing their initial appearance.



The surface should be thoroughly cleaned from dust etc. Any cavities in joints are filled in with **DUROCRET** or **DUROCRET-FAST**.



PS-20 is applied with brush, roller or spray. Two layers are usually sufficient. The 2nd layer is applied once the first layer has completely dried.



PS-20 penetrates the pores of the surface without changing its appearance. Instead of **PS-20** it can also be used **NANOPRO-C**.

MATERIALS

- **PS-20** Colourless water-repellent impregnation (consumption: 0.2-0.4 lit/m²)
- **NANOPRO-C** Nano-impregnation for protecting porous surfaces (consumption: 0.1-0.2 lit/m²)

5 WATERPROOFING OF HUMID ROOMS (BATHROOMS, KITCHENS ETC.)

THE PROBLEM

Moisture problems in humid rooms are a very common phenomenon. Such problems appear on walls and ceilings adjacent to bathrooms, kitchens etc, that have not been waterproofed during the construction. Before trying to solve the problem (fallen color, crumbling plaster etc.) it is essential to detect the reason that caused the moisture. Following, there are presented two of the most usual problems and their solution.

SEALING JOINTS BETWEEN DIFFERENT MATERIALS



The sealant has been damaged due to moisture and mildew has started to grow.



The old sealant is removed mechanically (by chisel etc.), trying not to damage the sanitary ware. Then the surface is cleaned with alcohol.



It is necessary to use adhesive tape, in order to avoid dirt during application.



The intersection is sealed with the mildew-resistant silicone sealant **DOMOSIL-S** or **DOMOSIL-MICRO**.



The sealant is formed while it is still fresh.



DOMOSIL-S or **DOMOSIL-MICRO** seal and waterproof the joint and help to prevent mildew growth.

MATERIALS

- **DOMOSIL-S** Mildew-resistant silicone sealant
- **DOMOSIL-MICRO** Anti-mould silicone sealant with built in Microban® technology

WATERPROOFING OF ABSORPTIVE TILE GROUTS



Moisture problems to rooms adjacent to bathrooms or kitchens appear because the tile grouts are absorptive.



The tiles are cleaned by using a wet sponge.



NANOPRO-C is applied with brush along the joints in two layers.



NANOPRO-C penetrates the tile grout and waterproofs it without changing its appearance. Instead of **NANOPRO-C** it can also be used **PS-21**.

MATERIALS

- **NANOPRO-C** Nano-impregnation for protecting porous surfaces (consumption: 0.1-0.2 lit/m²)
- **PS-21** Colourless water-repellent impregnation without solvents (consumption: 0.2-0.4 lit/m²)

ACRYLIC WATERPROOFING MATERIALS



ISOFLEX

Brushable elastomeric waterproofing membrane
It forms a continuous, elastic, waterproof, vapor-permeable sealing layer, without forming seams or joints.
Colour: White, reddish brown.
Consumption: 1.0-1.5 kg/m².
Packaging: Plastic containers of 1 kg, 5 kg, 15 kg and 25 kg.



ISOFLEX-T25

Brushable elastomeric waterproofing membrane
The same as ISOFLEX. Additionally, it is also recommended for use in extreme weather conditions, as it maintains its elasticity even in temperatures from -25°C to +120°C. **Colour:** White.
Consumption: 1.0-1.5 kg/m².
Packaging: Plastic containers of 1 kg, 5 kg, 15 kg and 25 kg.



FLEXCOAT

Highly quality, elastic, waterproofing paint
Suitable for painting and waterproofing walls, protection of bituminous layers etc. For exterior and interior use.
Colour: White and 1420 selected. **Consumption:** 125 ml/m²/layer.
Packaging: Plastic buckets of 3 lit and 10 lit.



ISO-PRIMER

Primer of brushable elastomeric waterproofing membranes
Primer of ISOFLEX and ISOFLEX-T25.
Colour: White. **Consumption:** 0.2-0.3 kg/m².
Packaging: Plastic containers of 1 kg, 5 kg and 20 kg.



FLEX-PRIMER

High quality acrylic water-based primer
In combination with the elastic waterproofing paint FLEXCOAT, it constitutes an excellent system for waterproofing of walls.
Colour: White. **Consumption:** 0.1-0.2 kg/m².
Packaging: Plastic containers of 1 kg, 5 kg and 20 kg.

CEMENT BASED WATERPROOFING MATERIALS



AQUAMAT-ELASTIC

Elastic, 2-component brushable sealing slurry
Suitable for substrates that show or are expected to show haircracks due to contraction-expansion or vibrations. Ideal for roofs, flower stands, swimming pools, tunnels, above ground water tanks etc. It is also recommended for waterproofing under tiles combined with the elastic tile adhesive ISOMAT AK-ELASTIC.
Colour: Grey, white.
Consumption: 1 kg/m²/layer.
Packaging: 18 kg and 7 kg in white and 35 kg in white and grey.



AQUAMAT

Cement-based sealing slurry
Cement-based brushable slurry for waterproofing of basements, reservoir tanks etc. Ideal for internal (negative side) waterproofing of underground areas, since it can withstand negative water pressure.
Colour: Grey, white, light blue. **Consumption:** 1 kg/m²/layer.
Packaging: Paper bags of 5 kg in white and grey and 25 kg in white, grey and light blue.



AQUAMAT-FLEX

Flexible, 2-component brushable sealing slurry
Suitable for substrates that show or are expected to show haircracks due to contraction-expansion or vibrations. Ideal for surfaces that will be covered with tiles, inverted roofs, under ground water tanks etc.
Colour: Grey. **Consumption:** 1 kg/m²/layer.
Packaging: Paper bags of 18 kg and 33 kg.

BITUMINOUS WATERPROOFING MATERIALS



ISOGUM P MIN

Plastomeric bituminous membrane with chippings
Plastomeric bituminous membrane (APP) reinforced with non-woven polyester fabric (180 gr/m²) and covered with mineral chippings. It is fixed with torch welding without using bituminous glue.
Weight: 4.0 kg/m² and 4.5 kg/m².
Packaging: Rolls of 1 m x 10 m.



ISODIEN 4 PF ALU

Elastomeric bituminous membrane
Elastomeric bituminous membrane reinforced with non-woven polyester fabric of 150 gr/m² and covered with aluminium leaf. It is fixed with torch welding without using bituminous glue.
Weight: 4.0 kg/m².
Packaging: Rolls of 1 m x 10 m.



ISOPAST

Bituminous emulsion
It provides excellent adhesion and resistance to acid and alkaline solutions. Used for waterproofing foundations, footings, retaining walls, floors, inclined (pitched) roofs etc. Also used as a primer for fixing bituminous membranes. **Consumption:** 0.2-1.0 kg/m²/layer.
Packaging: Plastic containers of 5 kg and 19 kg.



ISOLAC-BT

Bituminous waterproofing varnish with solvents
It provides excellent adhesion on all surfaces and water impermeability. It is used as a primer for fixing bituminous membranes, as a vapor-barrier in insulations, and for protecting concrete or metal surfaces from moisture (protection against oxidation). It is applied in 1-3 layers with roller or spraying. **Consumption:** 0.25-0.3 kg/m².
Packaging: Tin buckets of 5 kg and 17 kg.

WATERPROOFING IMPREGNATION MATERIALS



PS-20 (ex PROTESIL)

Silicone-based solution for waterproofing
Transparent, ready-to-use, silicone-based solution with solvents, for the waterproofing of inorganic substrates. It offers excellent water-repellence and long time protection. It is applied on various surfaces for their protection against rain effect. It also is suitable for waterproofing of tile joints.
Consumption: 0.2-0.4 lit/m².
Packaging: Metal containers of 1 lit, 3 lit and 20 lit.



PS-21 (ex PROTESIL-W)

Silicone-based solution without solvents for waterproofing
Ready-to-use, silicone-based solution without solvents, for the waterproofing of inorganic substrates. It provides excellent water-repellence and long time protection. It is used for the protection of surfaces against rain effect and for the waterproofing of tile joints. It can also be used even on slightly wet substrates.
Consumption: 0.2-0.4 lit/m².
Packaging: Plastic containers of 1 lit, 5 lit and 20 lit.



NANOPRO-C

Nano-impregnation for protecting porous surfaces
Water-based emulsion with high penetrating ability, based on nano-molecular structure. Protects porous surfaces, from moisture and salt stains, while prevents from fungi-mould growth. Suitable for application on concrete, plaster, tile grouts, natural stone etc. For indoor and outdoor use.
Consumption: 0.1-0.2 lit/m².
Packaging: Plastic containers of 1 lit, 5 lit and 20 lit.



NANOPRO-L

Nano-impregnation for protecting surfaces from oils
Water-based emulsion with high penetrating ability, based on nano-molecular structure. Protects porous and slightly porous surfaces (marbles, granites etc.), from oil stains, moisture and salt stains while prevents from fungi-mould growth. Suitable for either non absorptive surfaces such as polished marbles, granites etc. or porous surfaces, such as concrete, plaster, tile grouts, natural stones etc. For indoor and outdoor use.
Consumption: 0.5-0.1 lit/m².
Packaging: Plastic containers of 1 lit, 5 lit and 20 lit.

CONCRETE & MORTAR ADDITIVES



PLASTIPROOF

Plasticizer, type A - Concrete waterproofing admixture
Plasticizer-waterproofing admixture (ASTM C-494, type A, ELOT EN 934-2:T2 & T9). Suitable for preparation of concrete with low water permeability and improved physical properties.
Consumption: 1.5-1.8 kg/m³ of concrete.
Packaging: Plastic containers of 5 kg and 20 kg. Drums of 240 kg.



DS-99

Additive for tile adhesives joint grouts
Improves properties such as bonding to substrate, abrasion resistance, water-impermeability.
Consumption: DS-99 is diluted with water in proportions of 1:1 up to 1:2 by volume.
Packaging: Plastic containers of 1 kg, 5 kg and 20 kg.

TILES ADHESION AND GROUTING



ISOMAT AK-22

Flexible, high quality, polymer-modified tile adhesive for highly demanding substrates
It provides high initial and final adhesive strength, resistance to moisture and elasticity. It is qualified as absolutely non-slip and possesses increased open time. Suitable for fixing all kinds of tiles on areas, where high adhesion, elasticity and moisture resistance are required, such as terraces, swimming pools, underfloor heating systems etc. For indoor and outdoor use. It is classified as type C2 TE S1 adhesive according to EN 12004 and EN 12002.
Colour: Grey, white. **Consumption:** 1.5-4.0 kg/m².
Packaging: Bags of 5 kg, 15 kg and 25 kg.



MULTIFILL SMALTO 1-8

Tile grout with porcelain effect, water-repellent
Coloured, cement based tile grout enriched with resins. It offers high mechanical strength, superb color stability and great water-repellence. Contains special bacteriostatic agents, which block the formation of bacteria on the grout. It gives a smooth and glossy final surface. Suitable for joint width 1-8 mm. It is classified as type CG2 WA tile grout according to EN 13888.
Consumption: 0.2-2.0 kg/m², depending on tile and joint dimensions. **Packaging:** Plastic container of 2 kg and plastic bags of 4 kg. Paper bags of 20 kg.



MULTIFILL 2-5

Polymer-modified tile grout suitable for joint width up to 5 mm

MULTIFILL 3-15

Polymer-modified tile grout suitable for joint width 3-15 mm
Cement-based coloured tile grout for pointing tile joints on walls or floors, for indoor and outdoor applications. It is classified as type CG2 WA tile grout according to EN 13888.
Consumption: 0.2-2.0 kg/m², depending on tile and joint dimensions.
Packaging: Bags of 2 kg, 5 kg and 25 kg for MULTIFILL 2-5 and bags of 5 kg and 25 kg for MULTIFILL 3-15.

ELASTIC JOINT SEALANTS



ISOMASTIC-A

Elastoplastic acrylic sealant
Elastoplastic sealant without solvents based on acrylic polymers. Suitable for sealing work joints, thin expansion joints or plaster cracks in interior or exterior areas. Also suitable for slightly wet surfaces. Easily paintable.
Colour: White, grey.
Consumption: Joint 5 mm x 5 mm: 1 cartridge/11.2 m of joint length.
Packaging: Cartridges of 280 ml.



DOMOSIL-MICRO

High performance anti-mould silicone sealant with built-in Microban technology
For sealing joints 3-40 mm wide on materials such as glass, aluminium, porcelain, non-porous ceramics etc. It is applied in high humidity areas (kitchens, bathrooms etc). With normal cleaning practises it remains stable even after 10 years.
Colour: Transparent, white.
Consumption: Joint 5 mm x 5 mm: 1 cartridge/12 m of joint length.
Packaging: Cartridges of 280 ml.



DOMOSIL-S

High performance mildew-resistant silicon sealant
Suitable for sealing joints 3-40 mm wide, on non-porous materials such as glass, aluminium, porcelain, ceramic etc. It is also applied in high humidity areas (bathrooms, kitchens). Prevents development of fungi that creates stains and black spots.
Colour: Transparent, white.
Consumption: Joint 5 mm x 5 mm: 1 cartridge/12 m of joint length.
Packaging: Cartridges of 280 ml.



FLEX PU-40

Polyurethane adhesive and mastic sealant of one component, without solvents.
Ideal for sealing joints where high elasticity is required. Provides exceptional adhesion to synthetic stones, metal, aluminium, wood, ceramic tiles, plastic etc. It is applicable in both internal and external areas.
Colour: White, grey, brown.
Consumption: Joint 5 mm x 5 mm: 1 cartridge/12 m of joint length.
Packaging: Cartridges of 310 ml. Sausages of 600 ml.

CEMENT-BASED MORTARS



DUROCRET

Polymer-modified repairing cement mortar
Suitable for patching and repairing concrete, masonry and plaster, formation of grooves or ridgepoles etc.
Colour: Grey, white, redbrown.
Consumption: Approx. 15 kg/m²/cm. Groove formation: 2-3 kg/m.
Packaging: Bags of 5 kg and 25 kg.



DUROCRET-FAST

Fast-setting, repairing cement mortar
Suitable for repairs on concrete, cement mortars, masonry, plasters and generally wherever high strength and fast application is necessary. It is applied up to 3 cm thickness for large scale applications and up to 5 cm for localized repairs. It is classified as type PCC R2, repairing cement mortar for concrete, according to EN 1504-3. Pot life: 45 min at +20°C.
Colour: Grey.
Consumption: Approx. 17 kg/m²/cm. Groove formation: 2-3 kg/m.
Packaging: Bags of 25 kg.



UNICRET-FAST

Fast-setting, white repairing mortar
Suitable for fast plaster repairs in old or new constructions. It can be used instead of gypsum.
Colour: White.
Consumption: Approx. 15 kg/m²/cm.
Packaging: Bags of 5 kg and 25 kg.



AQUAFIX

Rapid-setting cement for instant sealing of water leaks
Used for instant plugging of local or superficial water leaks, rapid fixing and anchoring.
Colour: Grey.
Consumption: Approx. 1.6 kg/lit.
Packaging: Plastic buckets of 1 kg, 5 kg and 15 kg.

isomat

building quality



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