





WATERPROOFING SOLUTIONS
TO BUILD AND TO REFURBISH
BELOW THE GROUND LEVEL





FOR EVERY FIELD OF APPLICATION **VOLTECO'S SOLUTIONS**

Volteco is an exhaustive reference point for all waterproofing works on buildings; from walls to floors, from plasters to both historic and newly-built masonry. Above and below the ground level.

Volteco is the choice of a company that creates products to protect homes and increase well-being of those who live there. It is the philosophy of a brand that thinks about creating more quality of life.





Where is your problem?





RISING DAMP

- Detachment of plaster
- Stains and salt on the surfaces
- Mould, algae and fungi

IT NEEDS TO BE RESTORED







TERRACES AND FLAT ROOFS DAMAGED

- Tiles damaged by frost
- Seepages
- Stains and mould
- Cracks by settling

IT NEEDS TO BE WATERPROOFED







DEGRADED

EXTERIOR

FACADES

- Detachment of plaster
- Flaking
- Cracks in the structures
- Thermal bridges

IT NEEDS TO BE PROTECTED







BASEMENTS AND CELLARS FLOODED

- Infiltrations and floods
- Damp patches on the walls
- Wet walls
- Rising groundwater

WATER MUST BE STOPPED







LEAKING POOLS AND BASINS

- Infiltrations on pools and tanks
- Detachment of tiles
- Structural movements and settling in basins and channels

WATER MUST BE CONTAINED









why is it necessary to waterproof underground structures

The phenomenon of water infiltrations, whether it is groundwater/or rainwater, in newly-built underground structures, is sometimes an underestimated problem.

Volteco provides a complete, wide range of solutions that assure an effective waterproofing of cellars, garages and underground structures thanks to the combination of different technologies.

Waterproofing the structures avoids water ingress in the buildings and at the same time improves the service life of the structures, thus preventing sub-sequent sealing works inside the building and achieving healthy and dry environments.

However, it is possible to refurbish undergound spaces that have not been previously waterproofed, trasforming them in spaces suitable for living and thus, increasing the overall value of the property with effective and long lasting restoration works.

Volteco provides effective, long lasting solutions that allow dwellers to recover rooms damaged in time and to improve their healthiness.

STRUCTURAL CRACKS

even of considerable size if the slab is not properly designed to withstand operative loads

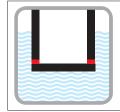




CRACKS

often widespread in weaker areas, such as different ground levels or thickness, which are the most severely stressed points





the main problems

CONSTRUCTION JOINTS

the impossibility of achieving perfect welding between different concrete castings produces potential lines that increases the risk of water ingress





EXPANSION JOINTS

are subject to repeated movements caused by dynamic loads by variable loads or by thermal expansion





PASSING ELEMENTS

(pipes, rebars, distance tubes) these elements sum up all the issues with expansion joints and concrete joints







The most complete range for waterproofing





















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Total adhesion membranes for pre- and post-application

Elastic waterproofing

Concrete structures built below the ground level

Underground structures

underground structures,

Active waterproofing and total barrier

Waterproofing and elastic protection with low internal or external thickness

Preventive control of structural joints and

Advantages

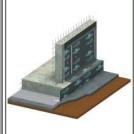
Active protection

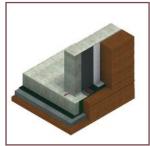
- Self-sealing
- Self-repairing
- Prevents lateral transmigration of
- Complete adhesion
- High crack bridging ability
- High flexibility
- Excellent versatility

- Effective seal of
- Structured watertight
- Effective and elastic
- Water flows plug
- Easy application
- Adaptable to

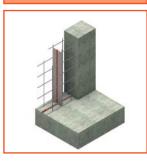


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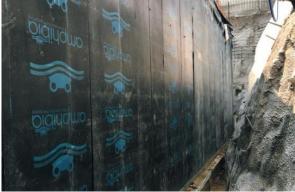
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AMPHIBIA Hydro-Reactive waterproofing membrane, multi-layer, self-repairing and self-sealing for pre- and post-casting







ADVANTAGES:

- Cold application with the possibility of testing tightness through simple inspections;
- Self-sealing overlappings;
- Absolute impermeability with no side seepage of water;
- Immediate mechanical protection, self-repairing also on accidental holes;
- High resistance to hydraulic load;
- High flexibility and capacity to bridge cracks;
- Total adhesion to reinforced concrete structure in pre-casting version;
- Easy passage of connecting reinforcements with self-sealing holes;
- Resistance to aggressive natural agents contained in the ground;
- Also usable in the presence of salt water;
- Water tightness of the system even when water is not constantly present;
- Easy and quick application;
- Possibility of complete coupling with other Volteco waterproofing systems;
- Protection from radon gas.

STOP PROBLEMS OF:

- Water infiltration:
- Inaccessible cellars and garages;
- Flooded underpasses;
- Difficulty in terms of repairs;
- Immersion pumps in continuous operation.

AMPHIBIA is a waterproof membrane, reactive to contact with water, SELF-REPAIRING, SEA-SEALING and, in the GRIP version it is SELF-FASTENING to concrete. This is composed of a co-extruded, multi-layer, polymer, continuous coat, with differentiated function for total water tightness of underground structures against water seepage.

APPLICATION AREA:

 Waterproofing and protection of concrete underground structures such as residential and industrial dwellings, shopping malls, public works etc...which require close and continuous contact between waterproofing product and struc-

ture (foundation slabs and walls, against diaphragms, piles, Berlinese or disposable formwork, internal tanking of existing structures). It can also be used in other structures such as channels, tanks, purification systems, tunnels, etc...



PACKAGING:

AMPHIBIA 3000 GRIP and AMPHIBIA 3000 packed in rolls as follows

- 1,80x20 m (~ 36 m²)*;
 - $0.90 \times 10 \text{ m} (\simeq 9 \text{ m}^2)$.





Pre-cast waterproofing bentonite membrane, self-gripping to concrete



Bentonite system suited for the definitive protection of reinforced concrete structures against constant or fluctuating groundwater. Its particular selfgripping structure prevents lateral transmigration of water.

APPLICATION AREA:

 Applications with reinforced concrete castings (beds and foundation walls against diaphragms, sheet pile and Berlinese retaining walls, existing foundations or disposable formwork) in constructions such as garages, cellars, warehouses, safety vaults, taverns, stores, multi-storey car parks, underpasses, tunnels etc...



ADVANTAGES:

- Easy and quick application;
- Natural Sodium Bentonite-based product;
- Insuperable self-confinement;
- High impermeability;
- It can be drilled, cut and shaped to adapt to the structure.

STOP PROBLEMS OF:

- Water infiltration;
- Inaccessible garages;
- Flooded cellars and unused lifts;
- Extraordinary maintenance work;
- Immersion pumps in continuous operation.



PACKAGING:

packed in rolls as follows

- 1,10x5 m (~ 5,50 m²)*;
- 2,50x30 m (~ 75 m²);
- 5x30 m (~150 m²).
- * not available for Volgrip HP







PLASTIVO® 250

HIGHPERFORMANCE High elasticity and versatility of use to waterproof surfaces subject to positive and negative hydrostatic pressure















Impermeability in negative pressure (concrete structure Water/Concrete: 0.7): 5 Bar: no passage water.







Elastic coating, ideal for waterproofing concrete surfaces, cement blocks or mixed masonry. Suitable for contact with drinking water.

APPLICATION AREA:

• Garages, cellars, underground structures in general, lifts pits, tanks, channels and sunk swimming pools.

ADVANTAGES:

- Excellent impermeability with negative hydrostatic pressure and excellent flexibility;
- Adheres to different types of surfaces;
- Complete waterproofing cycle within one day;
- The product helps earning points for LEED certification;
- Very low Volatile Organic Compound emissions (VOC);
- Suitable for contact with drinking water;
- Not subject to expiration.

STOP PROBLEMS OF:

- Water infiltration;
- Inaccessible garages;
- Flooded cellars.



PACKAGING: bag 14 kg powder, pail 6,6 kg liquid **YIELD:** $3,5 \div 4 \text{ kg/m}^2$.







PLASTIVO® 180



Elasticity and versatility of use for waterproofing surfaces subject to settlements



Polymer-modified two-component thixotropic flexible waterproofing coating with **CORE CURING TECHNOLOGY** for an effective curing both in presence of low temperatures and partially damp surfaces.

PRODUCT APPLICATION:

- Balconies, porticoes, wells, side-walks and screed in general
- Ledges, concrete gutters, flower boxes;
- Wells; tanks, poold, channels and structures also intended to contain drinking water;
- Reinforced concrete foundation walls;
- Bathrooms and showers even if made of gypsum board;
- Dry floors.

CORE CURING TECHNOLOGY ADVANTAGES:

- Quick curing that permits short application times between first and second application, even in the presence of low temperatures and wet surfaces;
- Positive and negative hydrostatic pressure;
- Excellent under "difficult" application conditions (humidity and low temperature);
- Very low Volatile Organic Compound emissions (VOC);
- Suitable for contact with drinking water;
- Complete waterproofing cycle within one day;
- Resistant to CO2;
- Not subject to expiration.



PLASTIVO® 300

YIELD: 3÷3,5 kg/m².

SINGLE COMPONENT Elasticity and versatility of use for waterproofing surfaces very humid and poorly ventilated, subject to negative and positive hydrostatic pressure



YIELD: $1,7 \div 2 \text{ kg/m}^2$.

Elastic waterproofing product, suitable for applications in positive and negative pressure on concrete surfaces, cement blocks or mixed masonry. It is particularly suited for application in indoor structures and/or very humid and is also effective as a barrier against carbonation.

APPLICATION AREA:

- Underground rooms in general, garages, cellars, lift pits, lightwells, tanks and channels;
- Balconies, porticoes, wells, side-walks and screed in general;
- Bathrooms, showers, saunas, etc...

ADVANTAGES:

- Odourless:
- Excellent impermeability with negative hydrostatic pressure up to 0,5 atm;
- Product application is not affected by low temperatures (≥ +5°C);
- Complete waterproofing cycle within one day;
- Resistant to CO₂.





BI MORTAR PLASTER SEAL Smoothing and waterproofing all in one solution



Thick waterproof plaster, that, waterproofing and at the same time smoothing both mixed masonry and reinforced concrete.

APPLICATION AREA:

- To waterproof skirting at the foot of the plaster;
- Earth retaining walls (mixed masonry and concrete);
- To repair diaphragms with a reinforcement mesh being interlaid;
- Seal prefabricated elements (wells, ditches...);
- For the application of waterproof rendering mortar for wall finishing with exposed stone.

ADVANTAGES:

- With the application of only one product, it simplifies the restoration of surfaces subject to water infiltrationonly one product, it simplifies the restoration of surfaces subject to water infiltration;
- Quick application;
- To smooth and waterproof in a single solution;
- Applicable on different surfaces:
- Suitable for both indoor and outdoor application;
- Sulphate resistant.





BI MORTAR SL

To level and waterproofing horizontal foundations structures



Shrinkage-controlled mortar which waterproofs and, at the same time, levels horizontal structures.

APPLICATION AREA:

- Horizontal surfaces, in order to achieve a waterproof concrete even with a maximum slope of 2%;
- Waterproofing underground structures, even in conditions of negative hydraulic pressure;
- Waterproofing horizontal basement in underground structures, also in the case of reduced thicknesses or uneven surfaces.

ADVANTAGES:

- Simplifies and reduces application phases using "two in one product";
- To smooth and waterproof in a single solution;
- Applicable also on uneven surfaces;
- Excellent resistance to negative pressure;
- Sulphate resistant.

PACKAGING: bag 25 kg.

YIELD: 17 kg/m² per centimetre of thickness.



VOL





BI MORTAR CONCRETE SEAL

Quickly waterproofs damp rooms with constant contact with water



Brush-applicable cement-based waterproofing product suitable for both negative and positive hydrostatic pressure.

This creates a continuous coating that is particularly resistant to impact and abrasion.

APPLICATION AREA:

 Rigid waterproofing of concrete or masonry surfaces, under or above ground, such as basins, pools, channels, foundation walls, cellars and elevator pits.

ADVANTAGES:

- Usable with negative and positive hydrostatic pres-
- Particularly resistant to abrasion and impact;
- Suitable for continuous contact with water;
- Easy maintenance, also in conditions of high humidity and closed environments.



YIELD: 2,5 - 3 kg/m² per centimetre of thickness.

BI MORTAR RASO SEAL Skimming and waterproofing in a single solution





A spatula-applied fibre-reinforced cement-based skimming compound. This creates a continuous waterproof coating.

APPLICATION AREA:

 Waterproofing of under or above ground concrete or masonry surfaces.

ADVANTAGES:

 Waterproofing of under or above ground concrete or masonry surfaces.

PARTICULARLY SUITED FOR:

- Mixed material or concrete underground structures;
- Basins, tanks and channels, walls in general;
- Prefabricated elements such as wells, ditches, concrete piping and similar.

PACKAGING: bag 20 kg.

YIELD: 1,6 kg/m² per millimeter of thickness.





WT 102

Seal safely with maximum simplicity



Natural Sodium Bentonite hydro-expansive joint that seals construction joints in reinforced concrete structures, also in the presence of strong water pressure.

APPLICATION AREA:

 To seal vertical and horizontal concrete construction joints and to seal passing bodies embedded in the concrete castings.

DVANTAGES:

- High resistance to hydraulic load;
- Easy and quick application:
- Excellent stability and adherence to the surface;
- Perfect seal of construction joints and passing bodies embedded in concrete castings.

STOP PROBLEMS OF:

- Water infiltration including groundwater;
- Cracks due to shrinkage of reinforced concrete;
- Garages and generally inaccessible underground rooms;
- Unsealed gravel nests;
- Flooded cellars.

PACKAGING: cardboard boxes containing 30 m or 10 m, complete with RE.VO mesh + nails.





Control and seal cracks, increasing the productivity of the castings



Self-sealing watertight box element designed to control and seal any spontaneous cracks that develop in the reinforced concrete. They seal automatically when water passes through, thanks to the hydro-expansive action of the bentonite ioint installed inside.

APPLICATION AREA:

To determine and guide contraction phenomena in reinforced concrete walls, constructed continuously, such as:

- Retaining walls in general;
- Tanks:
- Waste water treatment plants;
- Supporting walls, etc.

ADVANTAGES:

- Perfect hydraulic water-tightness;
- Maximum control of shrinkage of reinforced concrete;
- Possibility of preparing continuous concrete castings without joints;
- Considerable savings in terms of time and money;
- Allows the reinforcement bars to be laid without interruptions.

- causing infiltration;
- Water infiltration including groundwater;
 Flooded cellars;
- ced concrete:
- Formation of irregular, spontaneous cracks Damage caused by poor construction practices;
- Sudden phenomena of shrinkage of reinfor- Garages and generally inaccessible underground rooms.



PACKAGING:

boxes containing 10 bars $h = 1 \, \text{m}$.



ADEKA KM The hydro-expansive seal for the expansion joints of more articulated structures



PACKAGING: boxes, available in different thickness.

ADVANTAGES:

- Perfect hydraulic water-tightness
- High resistance to hydraulic load
- Great flexibility
- Also usable in the presence of salt water
- Non-toxicity and respect for the environment

Hydro-expansive seal with high resistance to hydraulic load that creates an excellent seal of expansion and contraction joints, including deteriorated, in any reinforced concrete structure.

APPLICATION AREA:

- To seal expansion and contraction joints in every kind of reinforced-concrete structure (rooms, underground, channels, tanks, pools, etc);
- To set-up seals between reinforced concrete or metal prefabricated elements for hydraulic works;
- To seal deteriorated expansion and contraction joints;
- To set-up seals for reinforced concrete, metal or plastic piping.



VOL-TEC®

Expansive profile for the sealing of wide movement joints



PACKAGING: boxes with rectilinear and corner elements.

Vol-Tec is an expansion profile used to hermetically seal wide dilatation joints, achieving water-tightness and seismic isolation. It is composed of high damping SBR/Natural rubber with modular elements and compression plates made of PA6 resin.

APPLICATION AREA:

- To hermetically seal wide dilatation joints, where perfect water-tightness is required;
- Suitable for structural works made of reinforced concrete, in areas prone to earthquakes and in the presence of water tables.

ADVANTAGES:

- Allows the two parts connected to the joint to move independently;
- The whole guarantees constant pressure between the two parts of the structure, also in case of movement;
- The pressure of the rubber structure can be adjustable manually.



JOINT PANEL

To waterproof expansion and contraction joints in a natural way



PACKAGING: boxes of 7 panels.

Modular biodegradable cardboard panels filled with granular natural Sodium Bentonite which, in contact with water or simply with moisture, turns into an expansive gel capable of adhering firmly to the structure and to effectively waterproof it.

PRODUCT APPLICATION:

- Waterproofing of expansion and contraction joints in underground reinforced concrete structures in combination with the hydro-expansive profile ADEKA KM 20.20;
- Reinforcement of the connections between the AMPHIBIA, VOLGRIP and PLASTIVO waterproofing.

ADVANTAGES:

 Easy adaptation to the size of the structures to be waterproofed in correspondence of the expansion joint.





An effective and prompt waterproofing system for joints and cracks







STRUCTURAL JOINT

CRACKING

CONSTRUCTION JOINT

A system made up of elastic and epoxy adhesive tape to carry out a waterproof sealing on joints, cracks and casting. It directly and exclusively acts in the point of ingress of water, sealing definitively and without any discomfort.

APPLICATION AREA:

- To apply a waterproof sealing on joints and cracks;
- To seal construction joints;
- Connect adjoining surfaces of joints, structures in general or prefabricated elements.

ADVANTAGES:

- It can adapt to complex situations;
- 100% waterproof with positive/negative hydrostatic pressure;
- Control over hydraulic water-tightness, which is visible and repairable;
- Excellent adhesion between tape and adhesive;
- Suitable to refurbish and rehabilitate all structures and underground rooms, to achieve healthier environments;
- Yellow to immediately identify the profile in case of maintenance following application and to avoid accidental breakage.

STOP PROBLEMS OF:

- Water infiltration;
- Garages inaccessible;
- Flooded cellars;
- Unused elevators;
- Unscheduled maintenance work;
- Immersion pumps in continuous operation. 10 kg (pail+pail kg 5+5)





10 kg (pail+pail kg 5+5) or 5 kg (pail+pail kg 2,5+2,5).



PACKAGING: 10 or 20-cm wide and 20-m long rolls.

YIELD:

BI FLEX h 10: 0.6 kg of BI BOND for each metre of BI FLEX. BI FLEX h 20: 1 kg of BI BOND for each metre of BI FLEX.





AKTI-VO 201 Hydro-expansive mastic for localized sealing works



CONFEZIONI: 320 cc cartridge. **YIELD:** cartridge produces a 3.20 m seal (10x10 mm).

STOP PROBLEMS OF:

- Water infiltration
- Garages inaccessible
- Flooded cellars

AKTI-VO 201 is high-performance hydro-expansive mastic made up synthetic rubber and hydrophilic polymers.

APPLICATION AREA:

- To create seals between prefabricated elements;
- To seal damage to reinforced concrete structures due to shrinkage;
- To seal concrete, metal and plastic pipes embedded into the concrete;
- Watertight construction joints in reduced section structures;
- To level surfaces and seals at the ends of the ADEKA KM profiles.

ADVANTAGES:

- Tightly adheres to any material;
- Applicable also on wet and very uneven surfaces;
- It can support significant loads of water;
- It polymerizes and expands quickly, in expansion achieves within 24 hours a volumetric encrease of 95%;
- Good behavior in contact with acid and hydrocarbon solutions;
- Practical and fast use thanks to cartridge packaging.
- Unused elevators:
- Unscheduled maintenance work;
- Immersion pumps in continuous operation.



I-PLUG

Rapid-setting localised waterproofing



Ultra-quick setting waterproof mortar, ideal for immediately closing water leaks.

APPLICATION AREA:

- Quick sealing of localised water flows, including pressurised;
- To rapidly prepare and finish waterproofing;
- To seal cracks, together with hydro-expansive mastic AKTI-VO 201.

ADVANTAGES:

- Instantaneously block water flows, even if pressurised;
- Excellent waterproofing;
- High mechanical resistance;
- No shrinkage;
- Easy workability;
- Rapid-setting.

Deterioration of the structure;Non-waterproofed technical details;Unsealed pipes.

PACKAGING: Deaerated and sealed 10 kg polyethylene bags. YIELD: A 10-kg bag of the product yields 6 l of mortar.





STOP PROBLEMS OF:

Water infiltration:



The research of healthiness in the underground spaces

Our territory is a limited asset, as everyone knows, and its use in terms of urbanization must find, a direction of development that draws the maximum benefit with the minimal "waste".

With respect for that, basically it is possible and useful to implement the so-called "building re-use" either for residential or commercial scope for the renewal of the city.

The use of dehumidifying plasters as a "finishing" of waterproofing treatment in underground areas (eg cellars, taverns, etc) follows this direction, guaranteeing the total salubrity of the building.

This means to have the possibility to recover rooms, often forgotten, avoiding definitively the feeling of "cold wall" and the perception of humid air, transforming them into new spaces, livable and increasing the value of the property.

The natural phenomenon of capillary rise and damp suction through porous materials (bricks, jointing grouts etc) can be tackled at best not by trying to hinder it, but by taking advantage of the same principles, using macro-porous renders that resist to salts.

The humidity released in the air shall then find a proper way out by natural or forced ventilation of the rooms, thus avoiding that perception of humidity stagnating in the air, which is typical of shut cellars.

















CALIBRO SYSTEM

Restoration of walls and rooms affected by rising damp and salt deposits and condensation phenomena.

Dehumidifying system formulated to restore plasters and renders on damp walls, both indoors and outdoors.



PACKAGING: bag 25 kg YIELD: 6÷6.5 kg/m².



PACKAGING: bag 25 kg **YIELD:** 9÷9.5 kg/m².



PACKAGING: bag 20 kg YIELD: 10,5÷11 kg/m².





references Volteco







Year: **1999** LOCATION: Milano (MI) TYPE OF PROJECT: waterproofing of multistorey

underground structures PRODUCTS - SYSTEM: Volgrip, WT 102







NEW TECHNICAL DEPARTMENT FERRARI

Year: 2002 LOCATION: Maranello (MO) TYPE OF PROJECT:

waterproofing of multistorey underground structures PRODUCTS - SYSTEM: Volgrip TC,









RESIDENTIAL TOWER SAVONA PORT

Year: 2005 LOCATION: Savona (SV) TYPE OF PROJECT:

waterproofing of multistorey underground structures PRODUCTS - SYSTEM:

Volgrip HP, WT 102







UNDERGROUND PARKING

Year: **2014** LOCATION: **Beijing - Cina** TYPE OF PROJECT:

cellars, garages, tavern, technical areas, underground structures PRODUCTS - SYSTEM: Akti-vo 201, Plastivo 300, Sistema Bi-Flex, Tap 3, Spidy 15







RESIDENTIAL COMPLEX

Year: 2017 LOCATION: Stresa (VB) TYPE OF PROJECT:

cellars, garages, tavern, technical areas, underground structures PRODUCTS - SYSTEM: Akti-vo 201, Amphibia 3000 - Amphibia 3000 Grip, Plastivo 180







RESIDENCE

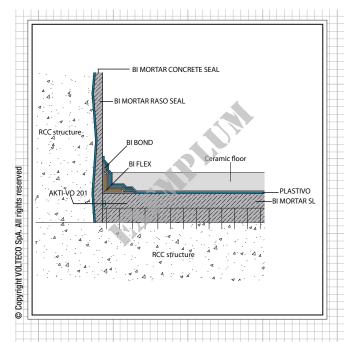
Year: 2017 LOCATION: Jesolo (VE) TYPE OF PROJECT:

cellars, garages, tavern, technical areas, underground structures PRODUCTS - SYSTEM: Amphibia 3000, Amphibia 3000 Grip, Akti-vo 201



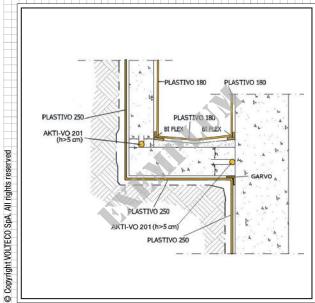






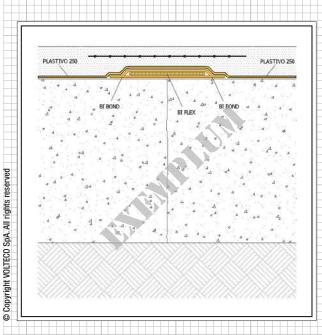


REMEDIAL TANKING OF EXISTING STRUCTURES





LIGHT SHAFTS

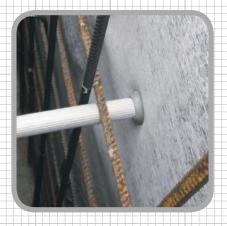




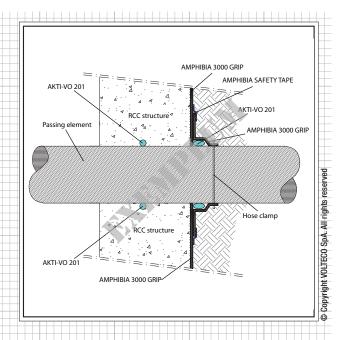
UNDERGROUND STAIRS





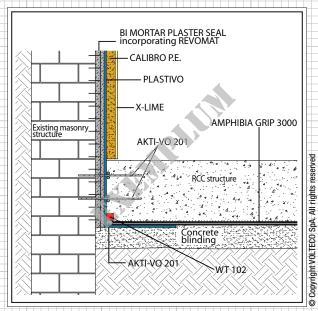


WATERPROOFING PASSING ELEMENTS



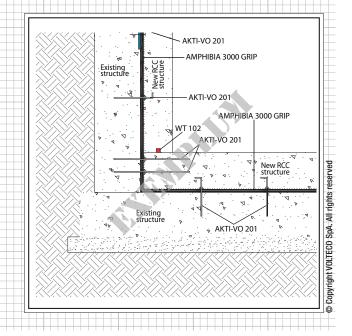


CELLARS





UNDERGROUND BASEMENTS







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