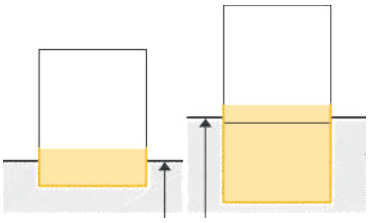
WATERPROOF STRUCTURES

Basements
renovation & waterproofing

VOLTECO

Where

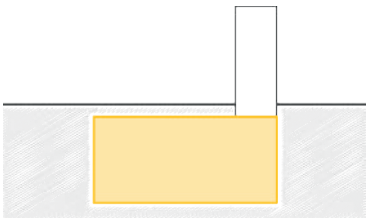


FOUNDATIONS WITH DIFFERENT LEVELS

Foundations with different levels have clear technical issues (different types of soil and stress, etc.) that must be carefully analysed before going ahead with the works.

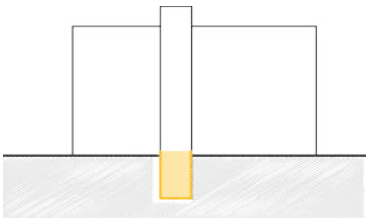
STAIRS NEXT TO THE STRUCTURE

The stairs next to our structure may be a critical point for the infiltration of water. All weak spots must be fully sealed in order to avoid unpleasant inconveniences and for open air staircases there must be a rainwater disposal system.



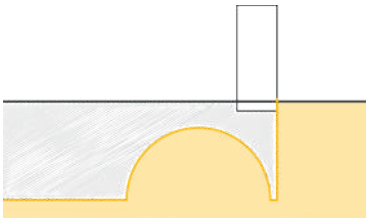
FULLY UNDERGROUND PREMISES

Car parks, cellars and fully underground premises need to be considered as boxes immersed in water, which means that the right waterproofing of choice is a safe, repairable and complete system.



ELEVATOR PITS AND LIGHTWELLS

An elevator pit is a technical area and namely consists of the space under the travel shaft allowing for the overtravel of the lift, which is constantly subjected to dynamic stress. The lightwell is instead used to insure the passage of air and light through the area below ground level, and rainwater disposal systems must be put in place here as well.

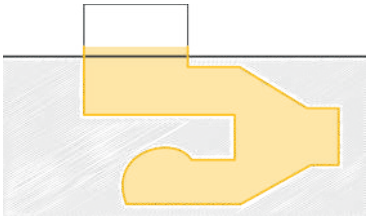


TUNNELS AND UNDERPASSES

Tunnels and underpasses consist in a roughly horizontal perforation in the soil, where the length – prevailing over the other two dimensions – connects two places. As well as evaluating the performance expected by the waterproof system, it is necessary to consider integrated solutions for technical and construction joints.

DESCENDING STRUCTURES

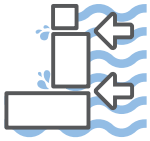
In this case, the upward buoyant force may vary for each underground room. It is necessary to identify a solution that guarantees the certainty of the result thanks to continuous waterproofing also on any work joints.



UTILITY DUCTS AND RAMPS

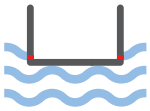
Connection areas and systems that connect two or more underground spaces; while they may sometimes be small, the issues of the previous types of structures still apply.

Problems



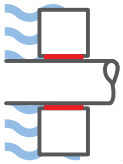
CRACKS

commonly found in weaker areas, in changes in level or thickness; in areas subjected to greater stress the crack becomes dynamic.



CONSTRUCTION JOINTS

when concrete castings cannot be perfectly joined together, this produces potential lines where water may pass.



PASSING ELEMENTS

spacers, bars, pipes: these elements encompass all the issues of expansion joints and construction joints.

EXPANSION JOINTS

operating joints are subject to repeated movements caused by dynamic and/or variable loads, or thermal expansion.

STRUCTURAL DAMAGE

also substantial if the structure is not suitably designed to withstand loads.

DAMPNESS AND MOULD

excess moisture in walls can cause rising damp, mould growth, salts creation and plaster detachment with related poor insulation, higher heating costs, condensation, and deterioration of furniture and fabrics.

Fiber-glass mesh
REVOGRID

Sealing tape+epoxy glue
BI FLEX SYSTEM

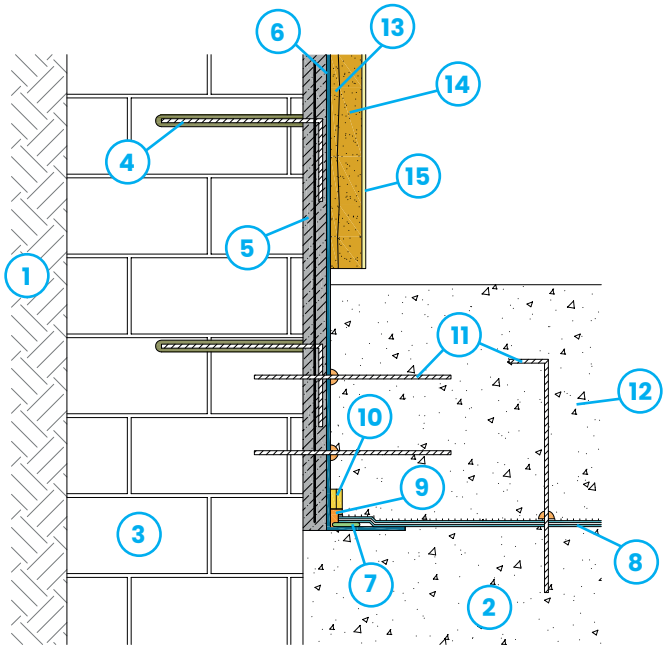
Waterproofing coating
PLASTIVO

Waterproofing plaster
BI MORTAR PLASTER SEAL

Fiber-reinforced waterproof mortar
FIBRO HFR

Hydro-expansive waterstop
WT CONSTRUCTION

Hydro-expansive membrane
AMPHIBIA

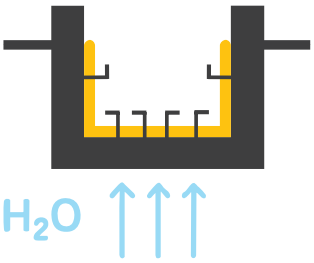


Internal waterproofing retrofit

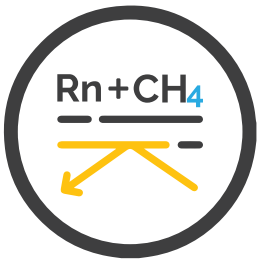
1. Soil
2. Existing RC structure
3. Existing masonry structure suitable to withstand hydraulic pressures
4. **Revogrid Connector - L** anchored with **Bi Fix 300**
5. **Bi Mortar Plaster Seal** embending **Revogrid** or a stainless steel net
6. **Plastivo**
7. **Bi Mastic**
8. **Amphibia 3000 Grip**
9. **Akti-Vo 201**
10. **Wt Construction**
11. Connectors sealed with **Akti-Vo 201**
12. New RC structure suitable to withstand hydraulic pressures
13. **Calibro Rinzaffo**
14. **Calibro P.E. Intonaco or Calibro Nhl**
15. **X-Lime**

Masonry and mixed structures tanking

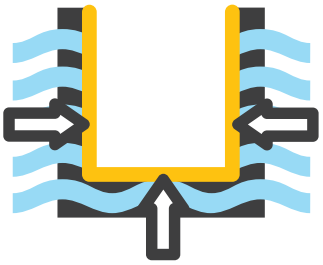
Benefits



Anchoring, reinforce & waterproof existing structures



Protection from radon and methane gases



Resistance to negative water pressure

durability VOLTECO check up

Hydro-expansive mastic
AKTI-VO 201

Quick-setting mortar
I-PLUG

1

Hydro-expansive mastic
AKTI-VO 201

Quick-setting mortar
I-PLUG

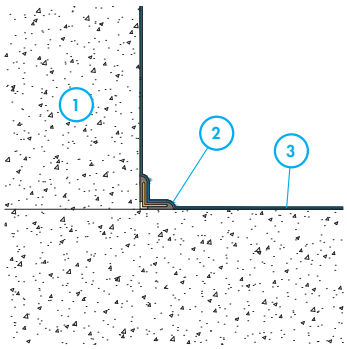
2

Waterproofing coating
PLASTIVO

4

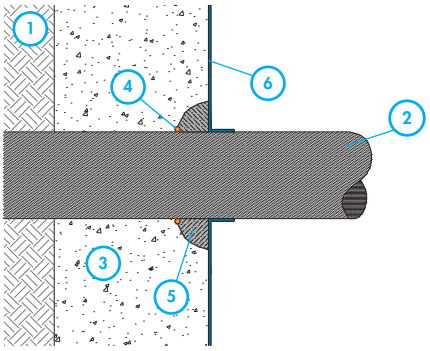
3

Sealing tape+epoxy glue
BI FLEX SYSTEM



Cold joint internal sealing with PLASTIVO and BI FLEX SYSTEM

1. Existing RCC structure designed to with stand hydraulic pressure
2. **Bi Flex System**
3. **Plastivo**

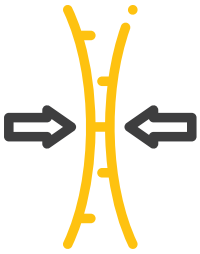


Penetration sealing with AKTI-VO 201 after pouring concrete

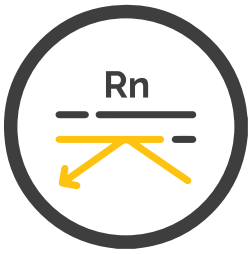
1. Soil
2. Penetration
3. RC structure suitable to withstand hydraulic pressure and exempt from defects
4. **Akti-vo 201**
5. **I-Plug**
6. **Plastivo**

Concrete basements leakages repair and waterproofing

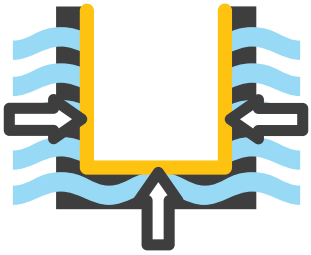
Benefits



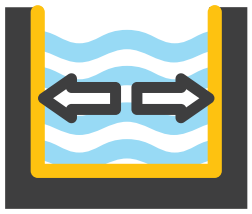
Flexible



Protection from radon



Resistance to negative water pressure



Resistance to positive water pressure

durability VOLTECO check up

Product Focus

AMPHIBIA 3000 GRIP

Synthetic hydro-reactive membranes

Amphibia 3000 grip is an EPDM pre and post-applied waterproofing membrane, reactive to contact with water, self-repairing, self-sealing and self-fastening to the concrete.

UNI EN 13967

BBA APPROVAL INSPECTION TESTING CERTIFICATION CERTIFICATE 20/3771

CH_4 Methane tested

Rn Radon tested

WT CONSTRUCTION

Hydro-expansive profile

Wt Construction is a hydro-expansive profile based on amphibia copolymer in Epdm rubber, reinforced in the center with a co-extruded steel mesh that stabilizes and directs the volumetric expansion.

EAD 320008-01-0605 ETA-24/0387

WT PANEL

Hydro-expansive panel

Wt Panel is a modular waterstop panel based on amphibia copolymer in hydro-expansive Epdm, capable of adhering to the structure by pressure, effectively waterproofing it.

BI FLEX SYSTEM

Elastomeric terpolymer-based elastic tape and epoxy adhesive

Bi Flex System is a combination of waterproof elements to treat joints and cracks. It consists of an elastomeric terpolymer-based elastic tape and a two-component epoxy adhesive.

Rn
Radon
tested

Drinkable
water
tested

I-PLUG

Ultra-quick waterproof mortar

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

AKTI-VO 201

Hydro-expansive mastic

Akti-vo 201 is a high-performance hydro-expansive mastic for definitively sealing and waterproofing penetrations and cracks in general.

Product Focus

BI MORTAR PLASTER SEAL

Fibre-reinforced multifunctional coating plaster

Multi-functional anchoring skim coat for regularising both mixed and reinforced concrete masonry.

CE **UNI EN 1504-3 CC R3**

Rn Radon tested

PLASTIVO 180

Flexible waterproof coating

Plastivo is a two-component, thixotropic and flexible modified polymer waterproof coating, based on highly reactive binders for effective curing even under low temperature conditions and partially damp surfaces.

CE **UNI EN 1504-2 PRINCIPI PI, MC E IR**

CE **UNI EN 14891**

Rn Radon tested

Drinkable water tested

BI MORTAR CONCRETE SEAL

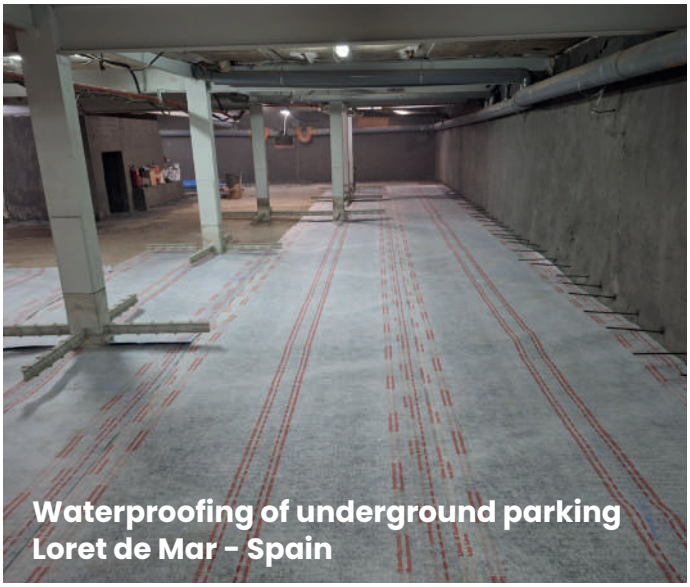
Cement-based waterproofing compound with crystallization.

A crystalline cross-linking cement-based waterproofing product. This creates a continuous coating that prevents the penetration of water even with negative pressure.

CE **UNI EN 1504-2 PRINCIPI MC E IR**

More case histories (> 2,700) on www.volteco.com

Waterproofing of an underground garage
Middelkerke – Belgium



Waterproofing of underground parking
Loret de Mar - Spain

Private house waterproofing
Gladbach – Germany

Church renovation
Vrbovec – Croatia

Tobacco factory tanking - Venezia – Italy

Waterproofing of basements
Balıkesir – Turkey

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COMPANY CERTIFIED MANAGEMENT SYSTEM QUALITY
ISO 9001 - ENVIRONMENT ISO 14001- SAFETY ISO 45001