



WT EXPANSION

PRODUCT DESCRIPTION

WT EXPANSION is a hydro-expansive gasket based on AMPHIBIA copolymer in EPDM with high resistance to hydraulic load that creates an excellent seal of expansion and contraction joints, including deteriorated, in any reinforced concrete structure.

Thanks to its great flexibility, it can also be applied to particularly articulated or irregular structures.



PRODUCT APPLICATION

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

ADVANTAGES

- Perfect hydraulic water-tightness
- High resistance to hydraulic load
- Non-toxicity and respect for the environment
- Great flexibility of use
- Easy and quick application

PREPARATION AND APPLICATION

Before laying the gaskets, it must be verified that the laying surfaces are adequately prepared.

These must be dry, clean and completely free of dust, oils, release agents or any loose residue that could compromise the adhesion of the gaskets.

Then proceed with laying the WT EXPANSION gaskets, arranging them in continuity with each other, along the line of application, to form a single, continuous profile.

The butt joints between the ends must be made directly during laying, either by hot sealing with a hot air gun at 400°C or by gluing with AKTI-VO 201, in order to guarantee the watertightness and functional continuity of the system (see relevant data sheet).

The fixing of WT EXPANSION gaskets must be carried out by applying a suitable adhesive layer, using ULTRATACK, BI MASTIC or ULTRABOND, depending on the characteristics of the substrate, the environmental conditions and the timescale envisaged for the intervention (see relative technical data sheets).

During installation, uniform pressure must be applied to ensure complete adhesion of the gasket to the surface.

If firmer fixing is required, controlled hammer blows can be applied, always taking care to keep the gasket correctly positioned and stable in place.



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At the end of installation, the WT EXPANSION gaskets must be completely encased in the reinforced concrete casting, with a minimum overlap of 10 cm (ref. diagram).

If ULTRABOND is used as a bonding adhesive, the product must be mixed thoroughly before use and applied in a thin, even layer on both surfaces to be bonded, using a fine-toothed trowel (1 mm) or brush. On particularly porous substrates, a second coat should be applied once the first is dry to the touch (approx. after 10-30 minutes).

Bonding should only be carried out when both surfaces are completely dry.

The drying time may vary depending on the type of surface, the amount of product applied, the temperature ($\geq +10^{\circ}\text{C}$) and the ambient humidity ($\leq 65\%$) (see relevant data sheet).

In the case of a structural joint, an appropriate separating element must be provided depending on the initial opening of the joint (Ref. Table 1), the sealing obtained with the WT EXPANSION profile can be supplemented by positioning WT PANEL (see relevant data sheet) to close the interfaces of reinforced concrete castings.

WT PANEL panels can be applied in one or more layers including staggered, until the desired joint opening is achieved, thus also continuously sealing the side surfaces of the two castings.

Watch the product video

YOUTUBE VIDEO



How it works

When in contact with water, the WT EXPANSION profiles can be hydrated until the hydrophilic polymer is saturated, thereby doubling the initial volume.

This guarantees a perfect watertight seal at the structural joints that are subjected to hydrostatic load.

If the water presence is not constant, the WT EXPANSION firmly maintains the expanded size.

The profile slowly loses the previously absorbed water molecules if placed in an environment without humidity, thereby returning to its original size.

When the product comes into contact with water once again, the expansion phenomenon is repeated with the same characteristics.

Thanks to the chemical stability of the product, this phenomenon can be repeated without losing its expansion and pressure characteristics.

Selection guide

In order to use WT EXPANSION profiles correctly, it is necessary to know that a perfect watertight seal is directly related to the pressure exerted by the profiles on the confinement walls and their level of interconnection.

A joint must be created on one of the side of the WT EXPANSION hydro-expansive profiles, in order to prevent them from being expelled by the hydrostatic pressure before they swell.

The required size of the profile is selected according to the maximum linear movement of the joint (considering shrinkage phenomena, thermal movement of the concrete and possible differential settlement) and to the initial opening of the joint that is to be created during implementation.

TABLE 1

Type of profile	Dimensions	Max initial opening	Further consecutive movement up to a hydraulic pressure of 100 KPa	Type of use
WT E 20.20	20X20 mm	10 mm	5 mm	Structural joints
WT E 30.30	30X30 mm	20 mm	10 mm	Structural joints





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References available at www.volteco.com

PACKAGING AND STORAGE

The WT EXPANSION profiles are packed in boxes containing:
WT E 20.20: contents per box 10.80 m = 9 bars of 1.20 m each.
WT E 30.30: contents per box 4.80 m = 4 bars of 1.20 m each.
The products must be stored in a dry place protected from sun and humidity.

WARNINGS - IMPORTANT NOTES

The joint must guarantee that the profile remains in place during the subsequent reinforced cement casting.
The WT EXPANSION profile must be used on structures thick enough to ensure a minimum reinforced concrete coating of 10 cm on the sides.
To facilitate laying, particularly at temperatures < 15 °C and humidity > 60%, we recommend the use of a temporary wooden strip (20 mm thick), fixed with nails along the laying line, to support the gasket until fully bonded.
The strip must be removed before the reinforced concrete is cast.
PLEASE NOTE: Contact the Volteco Laboratory for any preventive tests when applying the product in the presence of water with a high salt concentration.

PHYSICAL AND TECHNICAL SPECIFICATIONS

Specification	Values
Specific weight	1.02 g/cm ³
Application temperature	-15 °C +50 °C
Colour	black
Parameters subject to company Quality Control	-
Dimensions	20x20 mm (± 10%) / 30x30 mm (± 10%)
Expansion due to contact with water (7 days)	> 200%
Hydraulic seal on 10 mm joint	No passage up to 400 kPa

SAFETY

Refer to the related Safety Data Sheet.

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ANNEXES

Typical section of structural joint in slab



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