

# Ringseal T21

## Hydro-expansive rubber seal for spacers of the tubular formwork



Ringseal T21 is a ring gasket made with a special hydro-expansive rubber that reacts upon contact with water, increasing its initial volume. Used in combination with a tubular spacer for metal formwork with a diameter of 22 mm, Ringseal T21 hermetically seals any discontinuities in conduits that could easily settle in the concrete due to the presence of the spacer and which would compromise the impermeability of the masonry itself. The hydro-expansive capacity of Ringseal T21 has been laboratory tested with three different types of water: demineralised, salt and with a highly basic pH (to simulate conditions in contact with concrete). The expansion tests showed a variation in volume ranging from a minimum of around 200% with salt water (three times the initial volume) to a maximum of over 900% with demineralised water.

**CUSTOMS CODE:** 3926 9097

**COMPONENTS:** Single-component

**APPEARANCE:** Gasket

**AVAILABLE COLORS:** Blue

**PACKAGING AND DIMENSIONS:** Small bag 100 unit

## FEATURES AND BENEFITS

In the standard version the seal RINGSEAL T21 is designed for tubular spacers with 21.5 mm inner diameter (without external ribs), normally used in the construction industry and usually having an outer diameter of about 24 mm. Given the elasticity of the seal, greater diameters up to about 30 mm are tolerated.

## FIELDS OF APPLICATION

Construction of subterranean structures in concrete by metal formwork, where the wall is in direct contact with the ground and where there is the presence of waterproofing layers outside the masonry itself: basements, garages, underground rooms, etc.

## ALLOWED SUPPORTS

Concrete - Tubular spacers for steel formworks

## MODE OF USE

Manually place the hydro-expansive seal RINGSEAL T21 around the spacers of the formwork, in a central position. Build the planned formwork using the tubular spacers thus prepared and proceed with the usual operations of casting the concrete.

## APPLICATION METHODS

Apply by hand

## KEY FEATURES

- Ø Diameter: 22 mm
- ⚡ Nonflammable
- 🚰 Suitable for contact with drinking water
- ((( ))) Hydroexpansive product: +200 / +900 %
- 🕒 Shelf-life: 24 months
- ☀️ UV-resistant

## CONSUMPTION

No. 1 Ringseal T21 gasket for each tubular formwork spacer (average 1 - 2 pieces per square metre for metal formworks).

## STORAGE AND CONSERVATION

Store the product in its original packing, in a fresh and dry environment, avoiding frost and direct sunlight. Protect from humidity.

## PHOTO GALLERY



## SPECIFICATION ITEM

In the construction of waterproof works and concrete structures, where the use of struts connected with tubular spacers in PVC is provided, the hermetic protection must be ensured by the preliminary installation around each spacer, of hydro-expanding rubber gaskets with inner diameter of 24 mm (type RINGSEAL T-21 by AZICHEM Srl) and by the ex post insertion of special plugs made of polyamide material and equipped with a cap made of hydro-expanding rubber with 23 mm diameter (type Corkseal T-21 by AZICHEM Srl).



## ADDITIONAL CONTENT



# Expansion test results

RINGSEAL T21 has been tested with four different types of aqueous solutions:

- demineralised water
- groundwater (obtained with the concentrations limit pursuant to Legislative Decree 152/06: Ph 7.7 , sulphates 250 mg/l nitrate 50 mg/l, chlorides 200 mg/l, iron 0.2 mg/l, manganese 0.05 mg/l, nickel 0.2 mg/l)
- salt water (NaCl at 3.6%)
- base solution Ph 12.0 (to simulate the conditions in contact with concrete)

In the experimental tests of immersion in the solutions described, the product displayed a change in average volume at 25 days not less than 190% in the case of salt water and reached a theoretical expansion greater than 1000% for demineralised water. The change in volume is calculated as  $(V_f - V_i) / V_i$  (thus an expansion of 200% is equivalent to a triple final volume compared with the initial volume).

## WARNINGS AND PRECAUTIONS

Do not use RINGSEAL T21 with spacers with outer diameter less than 23.5 mm. Further, spacers with protruding external ribbing cannot be used, as their non-circular shape does not allow the protective sealing to adhere to the outer surface of the spacer, making it ineffective.

In cases of expansion with very marked changes in volume (>500%), and in the absence of restrictive conditions, there may be some lacerations of the seal; these phenomena do not compromise the features that protect the protective sealing at all, and they especially do not occur under normal operating conditions, i.e. when the seal is inserted in confined spaces. The general information, along with any instructions and recommendations for use of this product, including in this data sheet and eventually provided verbally or in writing, correspond to the present state of our scientific and practical knowledge.

Any technical and performance data reported is the result of laboratory tests conducted in a controlled environment and thus may be subject to modification in relation to the actual conditions of implementation.

Azichem Srl does not assume any liability arising from inadequate characteristics related to improper use of the product or connected to defects arising from factors or elements unrelated to the quality of the product, including improper storage. Those wishing to utilise the product are required to determine prior to use whether or not the same is suitable for the intended use, assuming all consequent responsibility.

The technical and characteristic details contained in this data sheet shall be updated periodically. For consultation in real time, please visit the website: [www.azichem.com](http://www.azichem.com). The date of revision is indicated in the space to the side. The current edition cancels out and replaces any previous version.

Please note that the user is required to read the latest Safety Data Sheet for this product, containing chemical-physical and toxicological data, risk phrases and other information regarding the safe transport, use and disposal of the product and its packaging. For consultation, please visit: [www.azichem.com](http://www.azichem.com).

It is forbidden to dispose of the product and/or packaging in the environment.

