



PRS.0142

## RINGSEAL T21

Hydro-expansive rubber seal for spacers of the tubular formwork

### Customs Code

4006 9000

### Dosage

1 - 2 unit /m<sup>2</sup>  
(Recommended: 1 unit /m<sup>2</sup>)

### Packaging

- Small bag 100 unit

### Application

- Apply by hand

Family  
Proseal

Type  
Hydro expansive rubber products

Product Lines

- Aqua
- Building
- Infratech

Functional Categories

- Instantaneous stoppage of water infiltrations in buildings
- Waterproofing underground structures with hydro-expansive products
- Structural maintenance of dams, reservoirs, ducts and water ducts
- Structural maintenance of tunnels
- Construction of underground works in high performance waterproof concrete

Components  
Single-component

Appearance  
Gasket

## General description

RINGSEAL T21 is an o-ring made with a specialised hydro-expansive rubber that in contact with the water reacts by increasing its own initial volume. RINGSEAL T21, used in combination with a tubular spacer for metal formwork, hermetically seals any discontinuities which could easily settle in the concrete due to the presence of the spacer, and which would compromise the watertightness of the masonry itself.

## General features

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.

## Available colours

- Blue

## Basic features

 Hydroexpansive product: +900 %

 UV-resistant

## Applicable on

Concrete, Tubular spacers for steel formworks

## Instructions for 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.

## Storage and preservation

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



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## 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, Precautions and Ecology

Technical and performance data outlined in this document are the result of laboratory testing conducted in a conditioned environment, as such they can result as considerably changed from operating and application conditions. The need follows to carry out preliminary tests in actual use conditions.

The user is required to check the product's most recent Material Safety Data Sheet, reporting physical-chemical and toxicological data, risk phrases and other useful information on how to safely transport, use and dispose of the product and its packaging. It is also reminded that the product and its packaging must not be dispersed in the environment for any reason.

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.

*RINGSEAL T21 is produced/distributed by*



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Page: **2/2**



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