

Project:

Sealing of expansion joints in a water irrigation channel

Location:

Covilhã (Portugal)

Project completed:

2009

Owner/s:

IDRHa Instituto de Desenvolvimento Rural e Hidráulica

Applicator/Contractor:

STB Soc. Tecn. Tratam. De Aços e Betões, Lda

Designer/Architect/Specifier:

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Market sector:

Water Management Industry

Products used & amounts:

MasterSeal NP 474

Cova da Beira irrigation channel

MasterSeal NP 474, joint sealing in an irrigation channel



Our project reference in Cova da Beira (Portugal)

The background

Cova da Beira is a region in the north-east of Portugal, close to Serra da Estrela. The Cova da Beira channel starts at the water intake of the Meimoa Dam, which was completed in 1984.

The objective of the project was to develop agriculture in the region. The Cova da Beira channel was built in several phases and was completed in 2009.

In areas with hot climates, a reliable supply of adequate quantities of water is one of the most critical issues for the local community, as sufficient quantities of water are required for agriculture.

Irrigation channels are frequently used to supply with water from regions which have large sources of water to these dry areas.

The challenge

As regards construction, irrigation channels are challenging structures. They are exposed to different climatic conditions that create severe thermal expansion and contraction movements.

Changes in the quantity of the water carried and in the soil humidity also create movements on the structure.

The structure must therefore be designed to accommodate these movements. For this purpose, joints are included in the structure. These must be sealed with a product that can remain elastic in the long term and is suitable for constant immersion in water.

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Cova da Beira irrigation channel

MasterSeal NP 474, joint sealing in an irrigation channel



Joint sealing in Cova da Beira (Portugal)

Our solution

An effective sealant that remains durably elastic was therefore required to ensure the supply of water over a long period of time. In view of the size of the project, a single-component product was necessary to ensure a quick and easy application.

MasterSeal NP 474 is a single-component, medium-high modulus polyurethane sealant. The product can be supplied in 310 ml cartridges or 600 ml sausages in different colours.

The product has high toughness and mechanical resistance as well as high resistance to various chemicals. Although the product is based on polyurethane, it is optimized for these conditions and shows very little sensitivity to UV light.

The customer's benefit

MasterSeal NP 474 ensures durable joints in the long term, thanks to main properties:

The main feature of MasterSeal NP 474 is its high Shore A hardness. This ensures low deformation under water pressure.

The second main feature of the sealant is its high elastic recovery. This allows the sealant to withstand repeated opening and closing movement on the joint at the same time as retaining the elasticity required.

Projects facts at a glance

- Approx. 28,000 sausages of MasterSeal NP 474 were applied.
- The channel was designed with a trapezoidal cross-section with a width of 2 m and a height of 2.30 m.

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