TECHNICAL REQUIREMENTS

PTV 833

SULFUR CONCRETE PRODUCTS: ELASTOMERIC SEALS – VULCANIZED RUBBER

Version 1.0 of 2015-01-12
Approved by the Advisory Bodies Rubber on 2015-03-02
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1 INTRODUCTION

1.1 FOREWORD

This document was prepared by COPRO's Advisory Bodies elastomers and sulfur concrete.

The purpose of this document is to establish the requirements for elastomeric seals in vulcanized rubber, used in contact with hardened sulfur concrete. The EN 681-1 isn't applicable for sulfur concrete so this PTV will establish the requirements for such seals. As soon as the EN 681-1 (or another European standard) describes the requirements for such seals, this PTV will be adapted if necessary.

The concerned seals shall be according EN 681-1 and additional requirements, which are laid down in this PTV.

The PTV describing products in sulfur concrete will refer to this PTV in the article concerning elastomeric seals. This PTV only describes the elastomeric seals requirements. The performance of the sulfur concrete element and sealing combination is not included in this PTV. This is dealt within the PTV relating to the products in sulfur concrete.

1.2 AVAILABILITY OF THIS PTV

The current version of this PTV can be downloaded on the website from COPRO www.copro.eu.

1.3 STATUS OF THE PTV

This PTV is version 1.0 and is the first version.

This PTV was approved by the advisory body elastomers on 2015-03-02 and ratified by the Board of Directors of COPRO on 2015-04-24.

1.4 QUESTIONS AND REMARKS

Questions and remarks about this PTV can be addressed to COPRO.

2 SCOPE

This document contains the requirements to which a elastomeric seal of vulcanized rubber for products in sulfur concrete must comply. Those seals can only be used in contact with hardened sulfur concrete, they can't be used in contact with fresh sulfur concrete.

3 REFERENCES

This PTV incorporates dated and undated references. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document applies, included any amendments.

- NBN EN 681-1 — Elastomeric seals - Materials requirements for pipe joint seals used in water and drainage applications – Part 1: Vulcanized rubber.
- ISO 37 — Rubber, vulcanized or thermoplastic - Determination of tensile stress/strain properties
- ISO 1817 — Rubber, vulcanized - Determination of the effect of liquids
- ISO 3302-1 — Rubber: Tolerances for products

4 OBLIGATORY REQUIREMENTS

4.1 EN 681-1

The seals should comply with all the requirements in EN 681-1 and addenda.

4.2 DIMENSIONS

The dimensions are declared by the manufacturer.

For these dimensions, the tolerances are as specified in ISO 3302-1, with the following classes :

- class M2 for the dimensions of moulded profiles
- class E1 for the functional dimensions of extruded profiles
- class E2 for the non-functional dimensions of extruded profiles.

The tolerance for the length 1 %.

Maximum 3 joints can be used for one sealing.

4.3 CHEMICAL RESISTANCE

4.3.1 Splices

If the seal doesn't contain a splice, then the requirement isn't foreseen.

Test method: The test is executed according to annex C of EN 681-1, taking into account the following prescriptions:

- the test pieces are, before the test, conditioned for 7 days at 45 °C ± 2 °C in pH1 and pH12,
- the extension is executed at 50 °C ± 2 °C,
- the extension is maintained for 5 min instead of 1 min.

Requirements : after the test, no visual imperfections may occur.

4.3.2 Seals

Test method : The chemical resistance is determined according to ISO 1817 in a fluid with pH1 and pH12, at 45 °C ± 2 °C for 28 days.

Requirements :

Property	Unit	Test Method	Requirement
Volume change	%		± 10
Tensile strength change, maximum	%	ISO 37	- 20
Elongation at break change, maximum	%	ISO 37	+ 10/- 40

5 MARKING

Each seal or parcel (if the marking on the seal is impossible), shall be, in addition to the marking according EN 681-1, marked clearly and durable as listed below:

- reference to this PTV