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S.R. CEN/TR 15729:2010

Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Report on the determination of mean abrasion after a defined number of test cycles

S.R. CEN/TR 15729:2010

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English Version

Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Report on the determination of mean abrasion after a defined number of test cycles

Systèmes de canalisations en plastique - Plastiques thermodurcissables renforcés par du verre (PRV) à base de résine de polyester non saturé (UP) - Rapport sur la détermination de l'abrasion moyenne après un nombre défini de cycles d'essai

Kunststoff-Rohrleitungssysteme - Glasfaserverstärkte duroplastische Kunststoffe (GFK) auf der Grundlage ungesättigten Polyesterharzes (UP) - Bericht über die Bestimmung des mittleren Abriebs nach einer festgelegten Anzahl von Durchläufen

This Technical Report was approved by CEN on 26 June 2010. It has been drawn up by the Technical Committee CEN/TC 155.

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Foreword

This document (CEN/TR 15729:2010) has been prepared by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems”, the secretariat of which is held by NEN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

Introduction

The procedure described in this Technical Report is intended to be used as a means of assessing and comparing the performance of GRP pipes after being subject to a specified regime of abrasion. The main difference between this regime and other similar procedures is the use of a graded man-made abrasive, Corundum.

The specification of the abrasive, ISO 8486-1, specifies the designation and determination of grain size distribution of fused aluminium oxide, silicon carbide and other abrasive materials for bonded abrasives and for general industrial applications. This document, which is indispensable for the application of the proposal, is an ISO standard, which is recognised by the abrasive manufacturing industry throughout the world. The use of corundum addresses some of the vital issues for abrasion testing, namely particle shape or structure by being a man-made material with consistent chemical formulation and fracture characteristics.

The abrasive to be used, i.e. corundum, a crystalline oxide of aluminium that has crystallized in a Trigonal system, may not be similar to some materials found in sewer piping systems but is used because of its availability world-wide and thereby ensures the consistency of the abrasive used in the test. The test is not intended to simulate any particular conditions in piping systems for which pipes conforming to EN 14364 are intended to be used but is merely intended to be a reproducible test procedure for use in a testing laboratory that can be used to provide data for the assessment of abrasion resistance.

GRP pipes complying with EN 14364 have not been found to be susceptible to abrasion in typical sewerage or drainage applications. In the small number of situations where abrasion has been found to be a problem the conditions on site are found to be unusual and also difficult to reproduce in a laboratory and this leads to major difficulties in correlating the performance in the laboratory with those existing on such sites. Data is not currently available which shows a definite relationship between the test and actual pipe operation. However data obtained from this test could be used to establish the relationship if it exists.

With the limited amount of testing already carried out it is considered that there is an improvement in repeatability of the test compared to DIN 19565-1 (no longer published) and testing is continuing to confirm these early findings.

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