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**FIBRE CEMENT PIPES FOR DRAINS AND
SEWERS - PART 2: MANHOLES AND
INSPECTION CHAMBERS**

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Foreword

This European Standard has been prepared by Technical Committee CEN /TC 165, "Wastewater engineering", the secretariat of which is held by DIN.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2002, and conflicting national standards shall be withdrawn at the latest by September 2003.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard : Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

A distinction has been made between initial testing (type tests) and routine quality control requirements (acceptance tests).

Attention is drawn to the need for observance of EEC and/or EFTA and national legal requirements restricting the use of certain materials and to the related marking and labelling requirements.

The performance of a sewage network constructed with these products depends not only on the properties of the product as required by this standard but also on the design and construction of the network as a whole in relation to the environment and conditions of use.

1 Scope

This Standard gives specifications for asbestos free fibre-cement manholes and inspection chambers for use in buried drains and sewers with gravity flow at atmospheric pressure.

Products covered by this standard include prefabricated elements in as well as prefabricated complete manholes and inspection chambers.

It specifies definitions, descriptions, composition, general appearance and finish, geometrical characteristics, mechanical characteristics, acceptance tests, type tests and quality control requirements.

NOTE Complete manholes or prefabricated elements may also be used for other purposes such as pumping stations, items of drainage, items for sewage treatment or sewage disposal, when corresponding additional requirements according to the relevant European Standards are fulfilled.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 124:1994, *Gully tops and manhole tops for vehicular and pedestrian areas - Design requirements, type testing, marking, quality control.*

EN 197-1:2000, *Cement - Part 1: Composition, specifications and conformity criteria for common cements.*

EN 476:1997, *General Requirements for Components used in Discharge Pipes, Drains and Sewers for Gravity System.*

EN 588-1:1996, *Fibre-cement pipes for sewers and drains - Part 1: Pipes, joints and fittings for gravity systems.*

EN 681-1:1996, *Elastomeric seals – Material requirements for pipe joint seals used in water and drainage applications – Part 1: Vulcanized rubber (modified by 681-1/A1 of June 1998).*

prEN 1917:1995, *Concrete manholes and inspection chambers, unreinforced, steel fibre and reinforced.*

ISO 390:1993, *Products in fibre reinforced cement - Sampling and inspection.*

3 Terms and definitions

For the purposes of this European Standard, the definitions given in EN 588-1:1996 apply:

4 Symbols and abbreviations

DN	nominal diameter of shaft or base element
d_1	internal diameter of shaft or base element
e	wall thickness of base element or shaft
h	height, invert to ground level
h_a	effective height of reducer-slab

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