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IRISH STANDARD

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GRP TANKS AND VESSELS FOR USE ABOVE GROUND - PART 2: COMPOSITE MATERIALS - CHEMICAL RESISTANCE

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Foreword

This document (EN 13121-2:2003) has been prepared by Technical Committee CEN/TC 210 “GRP tanks and vessels”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by April 2004, and conflicting national standards shall be withdrawn at the latest by April 2004.

This European Standard 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 97/23/EC.

For relationship with this European Directive see informative Annex ZA, which is an integral part of this standard.

This standard is Part 2 of EN 13121 which in total covers materials, design, manufacture, inspection, delivery, installation and maintenance of GRP tanks and vessels for use above ground. This Part 2 specifies requirements for chemical resistance of composite materials used for GRP tanks and vessels for the storage or processing of fluids, for use above ground. The tanks and vessels may be factory made or site built, with or without lining.

Annexes A and B are normative. Annex C is informative.

This document includes a bibliography.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

European Standard EN 13121 consists of the following parts under the general title "GRP tanks and vessels for use above ground":

Part 1 — Raw materials — Specification conditions and acceptance conditions

Part 2 — Composite materials - Chemical resistance

Part 3 — Design and workmanship

Part 4 — Delivery, installation and maintenance

These four parts together define the responsibilities of the tank or vessel manufacturer, the materials manufacturers or suppliers and the purchaser.

The design and manufacture of GRP tanks and vessels involve a number of different materials such as resins, thermoplastics and reinforcing fibres and a number of different manufacturing methods. It is implicit that tanks and vessels conforming to this Standard should be made only by manufacturers who are competent and suitably equipped to fulfil all requirements, using materials manufactured by competent and experienced material manufacturers.

EN 13121-1 gives the requirements necessary to establish that the GRP material and any thermoplastic lining will have the required chemical and thermal resistance to the service conditions. EN 13121-1 specifies the requirements for the specification conditions and acceptance conditions for GRP and thermoplastic materials, which are necessary in order to establish the chemical resistance properties of these materials in accordance with this Part of the standard. EN 13121-2 gives the requirements necessary to establish that the GRP material and any thermoplastic lining willl have sufficient chemical and thermal resistance to service conditions. Part 2 defines the requirements for the protective layer and the structural laminate as well as defining methods for proof of suitability to meet the chemical/thermal effects caused by the fluids and of determination of the partial design factor, A_2, as required for design in accordance with prEN 13121-3. Five methods are described — use of Media Lists, use of resin manufacturers data, use of thermoplastics manufacturers data, service experience and sample testing. The manufacturer of the tank or vessel may choose any one of these methods subject to here being sufficient data available in that method for the particular application.

Together with the requirements and acceptance conditions for the raw materials determined in EN 13121-1, the design and workmanship requirements as determined in prEN 13121-3 and the delivery, handling, installation and maintenance recommendations given in EN 13121-4, EN 13121-2 completes the total standard's requirements.

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