

INTERNATIONAL  
STANDARD

**ISO**  
**10221**

First edition  
1993-03-15

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**Ductile iron pipelines — Rubber sealing  
rings for pipelines carrying potable water**

*Canalisations en fonte ductile — Bagues d'étanchéité en caoutchouc pour  
canalisations véhiculant de l'eau potable*



Reference number  
ISO 10221:1993(E)

## **Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 10221 was prepared by Technical Committee ISO/TC 5, *Ferrous metal pipes and metallic fittings*, Sub-Committee SC 2, *Cast iron pipes, fittings and their joints*.

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International Organization for Standardization  
Case Postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

# Ductile iron pipelines — Rubber sealing rings for pipelines carrying potable water

## 1 Scope

This International Standard lays down the material specifications of solid vulcanized rubber sealing rings used in ductile iron pipelines carrying potable water. It also specifies requirements for their effect on the organoleptic properties (colour, taste and odour) and the total organic carbon content of water.

In the case of composite seals (which comprise, for example, both rubbers which are rigid and rubbers which are flexible), this International Standard is applicable only to the requirement for their effect on the total organic carbon content of water.

Cellular and closed-cell rubber seals are not covered by this International Standard.

NOTE 1 This International Standard is applicable only in the absence of more stringent national standards and regulations.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4633:1983, *Rubber seals — Joint rings for water supply, drainage and sewerage pipelines — Specification for materials*.

ISO 7887:1985, *Water quality — Examination and determination of colour*.

ISO 8245:1987, *Water quality — Guidelines for the determination of total organic carbon (TOC)*.

## 3 Definitions

For the purposes of this International Standard, the following definitions apply.

**3.1 base liquid; initial test liquid:** Liquid used for the organoleptic tests and for the total organic carbon test.

**3.2 test liquid:** Base liquid in which the test specimen is immersed for 24 h, and which is examined for the determination of certain characteristics.

**3.3 blank test liquid; control liquid:** Base liquid that has been treated simultaneously with, and under identical conditions to, the test liquid but in which no test specimen has been immersed.

## 4 Requirements

### 4.1 Material specifications

The material shall meet the requirements specified in ISO 4633 except the second sentence of subclause 4.2.

### 4.2 Effect of the material on the organoleptic properties and the total organic carbon content of water

#### 4.2.1 Effect on organoleptic properties

##### 4.2.1.1 Colour

The difference in colour between each of the test liquids and the blank test liquid shall not exceed 5 mg/l Pt (standard units of colour). In addition, at least two of the three differences in colour shall be less than or equal to 5 mg/l Pt.