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Ductile iron pipes, fittings and accessories - Sanitary characteristics and test methods

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Ductile iron pipes, fittings and accessories - Sanitary characteristics and test methods

Tuyaux, raccords et accessoires en fonte ductile - Aspects sanitaires et methodes d'essais

Rohre, Formstücke und Zubehör aus duktilem Gusseisen - Trinkwasserhygienische Eigenschaften und Prüfverfahren

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (CEN/TR 16950:2016) has been prepared by Technical Committee CEN/TC 203 “Cast iron pipes, fittings and their joints”, the secretariat of which is held by AFNOR.

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Introduction

This Technical Report is in conformity with the general requirements already established by CEN/TC 164 in the field of water supply (e.g. potable water).

This Technical Report contains the essential sanitary characteristics to be verified in performance tests by materials of pipes, fittings, accessories of ductile cast iron and their joints within the scope of this Technical Report, which are in contact with water intended for human consumption. In addition, the national regulations of member states apply, including positive lists of substances for organic and inorganic materials.

Tests carried out using EN test methods to demonstrate compliance with existing national regulations may be used to show that the sanitary characteristics of pipes, fittings, accessories of ductile cast iron and their joints are verified, e.g. compliance with the sanitary requirements applicable either in F, G, NL or UK ensures compliance with the properties of this Technical Report. Since the sanitary requirements of construction products remain in the framework of the national regulations, Annex A of this Technical Report contains a compilation of the different national requirements.

1 Scope

This Technical Report contains the sanitary characteristics and test methods applicable to those factory applied lining-, coating- and jointing materials of ductile iron pipes and fittings conforming to EN 545 that are in contact with water intended for human consumption for use at operating temperatures up to 50 °C. Ductile cast iron itself is not in direct contact with the conveyed water and therefore no characteristics in respect to the sanitary behaviour are necessary. As ductile cast iron is impermeable against diffusion of organic substances, the water quality is maintained in service. Different surface/volume ratios are used in the tests for pipes, fittings and joints to reflect the different impact of their surface areas exposed to the water in the overall pipeline.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1420, *Influence of organic materials on water intended for human consumption — Determination of odour and flavour assessment of water in piping systems*

EN 1622, *Water quality — Determination of the threshold odour number (TON) and threshold flavour number (TFN)*

EN 12873-1, *Influence of materials on water intended for human consumption — Influence due to migration — Part 1: Test method for factory-made products made from or incorporating organic or glassy (porcelain/vitreous enamel) materials*

EN 14718, *Influence of organic materials on water intended for human consumption — Determination of the chlorine demand — Test method*

EN 14944-1, *Influence of cementitious products on water intended for human consumption — Test methods — Part 1: Influence of factory made cementitious products on organoleptic parameters*

EN 14944-3, *Influence of cementitious products on water intended for human consumption — Test methods — Part 3: Migration of substances from factory-made cementititous products*

EN 16421, *Influence of materials on water for human consumption — Enhancement of microbial growth (EMG)*

EN ISO 7027-1, *Water quality — Determination of turbidity — Part 1: Quantitative methods (ISO 7027-1)*

EN ISO 7393-1, *Water quality — Determination of free chlorine and total chlorine — Part 1: Titrimetric method using N, N-diethyl-1,4-phenylenediamine (ISO 7393-1)*

EN ISO 7887, *Water quality — Examination and determination of colour (ISO 7887)*

EN ISO 14402, *Water quality — Determination of phenol index by flow analysis (FIA and CFA) (ISO 14402)*

EN ISO 17993, *Water quality — Determination of 15 polycyclic aromatic hydrocarbons (PAH) in water by HPLC with fluorescence detection after liquid-liquid extraction (ISO 17993)*