SLOVENSKI STANDARD
SIST EN ISO 15758:2014

01-september-2014

Nadomešča:
SIST EN 14114:2002

Higrotermalno obnašanje opreme stavb in industrijskih inštalacij - Izračun difuzije vodne pare - Sistemi za izoliranje hladnih cevi (ISO 15758:2014)

Hygrothermal performance of building equipment and industrial installations - Calculation of water vapour diffusion - Cold pipe insulation systems (ISO 15758:2014)

Wärmedämmung von haus- und betriebstechnischen Anlagen in Gebäuden - Berechnung der Wasserdampfdiffusion - Dämmung von Kälteleitungen (ISO 15758:2014)

Performance hygrothermique des équipements de bâtiments et installations industrielles - Calcul de la diffusion de vapeur d'eau - Systèmes d'isolation de tuyauteries froides (ISO 15758:2014)

Ta slovenski standard je istoveten z: **EN ISO 15758:2014**

ICS:

91.120.10 Toplotna izolacija stavb Thermal insulation

SIST EN ISO 15758:2014 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 15758

May 2014

ICS 91.120.10; 91.140.01

Supersedes EN 14114:2002

English Version

Hygrothermal performance of building equipment and industrial installations - Calculation of water vapour diffusion - Cold pipe insulation systems (ISO 15758:2014)

Performance hygrothermique des équipements de bâtiments et installations industrielles - Calcul de la diffusion de vapeur d'eau - Systèmes d'isolation de tuyauteries froides (ISO 15758:2014)

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN ISO 15758:2014) has been prepared by Technical Committee ISO/TC 163 “Thermal performance and energy use in the built environment” in collaboration with Technical Committee CEN/TC 89 “Thermal performance of buildings and building components” the secretariat of which is held by SIS.

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of an identical text or by endorsement, at the latest by November 2014, and conflicting national standards shall be withdrawn at the latest by November 2014.

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The text of ISO 15758:2014 has been approved by CEN as EN ISO 15758:2014 without any modification.

INTERNATIONAL STANDARD

ISO 15758

Second edition
2014-05-01

Hygrothermal performance of building equipment and industrial installations — Calculation of water vapour diffusion — Cold pipe insulation systems

Performance hygrothermique des équipements de bâtiments et installations industrielles — Calcul de la diffusion de vapeur d'eau — Systèmes d'isolation de tuyauteries froides

Reference number
ISO 15758:2014(E)

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Published in Switzerland

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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The committee responsible for this document is ISO/TC 163, *Thermal performance and energy use in the built environment*, Subcommittee SC 2, *Calculation methods*.

This second edition cancels and replaces the first edition (ISO 15758:2004), which has been technically revised. The main changes are the following:

— in Clause 5, b), the alternative of using annual mean temperature and vapour pressure has been removed;

— the method of calculation given in 6.3 has been changed such that the total amount of condensation water in the whole pipe system is calculated based only on the outermost tangent to the saturation pressure, p_{sat};

— Figure 1 has been modified;

— the example given in A.3 has been changed;

— in Annex B, an explanation of the system with capacity for drying has been added;

— references have been added to the Bibliography.

Introduction

If the thermal insulation of a cold pipe system is not completely water vapour tight, there will be a flow of water vapour from the warm environment to the surface of the pipe, whenever the temperature of the surface of the cold pipe is below the dew point of the ambient air. This flow of water vapour leads to an interstitial condensation in the insulation layer and/or dew formation on the surface of the pipe itself. Interstitial condensation may cause the insulation material to deteriorate and dew formation on the surface of a metal pipe may cause corrosion over time. If the temperature is below 0 °C ice will be formed and the methods of this standard will not apply.

In period, when the dew point of the ambient air is higher than the temperature of the outer surface of the insulation, surface condensation will occur. This is dealt with in ISO 12241.

Different measures are available to control water vapour transfer and reduce the amount of condensation. The following are normally applied:

a) Installation of a vapour retarder;

b) Use of insulation materials with a high water vapour resistance factor (low permeability);

c) Use of a vapour retarder and a capillary active fabric to continuously remove condensed water from the pipe surface to the environment; see Annex B for an example.

Which protection measure is chosen depends on the ambient climate, the temperature of the medium in the pipe and the water vapour diffusion resistance of the insulation layer. The success of any system is strongly dependent on workmanship and maintenance. In any case anti-corrosion measures should be applied to a metal pipe in severe conditions.

The expected economic lifetime of an insulation system, assuming a maximum acceptable accumulated moisture content, can be calculated using the methods in this standard.