Testing of valves - Fire type-testing requirements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 10497:2010 sisaldab Euroopa standardi EN ISO 10497:2010 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 10497:2010 consists of the English text of the European standard EN ISO 10497:2010.
Standard on kinnitatud Eesti Standardikeskuse 31.03.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 31.03.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 15.02.2010.	Date of Availability of the European standard text 15.02.2010.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 23.060.01

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 10497

February 2010

ICS 23.060.01

Supersedes EN ISO 10497:2004

English Version

Testing of valves - Fire type-testing requirements (ISO 10497:2010)

Essais des appareils de robinetterie - Exigences de l'essai au feu (ISO 10497:2010)

Prüfung von Armaturen - Anforderungen an die Typprüfung auf Feuersicherheit (ISO 10497:2010)

This European Standard was approved by CEN on 26 January 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN ISO 10497:2010: E

Foreword

This document (EN ISO 10497:2010) has been prepared by Technical Committee ISO/TC 153 "Valves" in collaboration with Technical Committee CEN/TC 69 “Industrial valves” the secretariat of which is held by AFNOR.

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 August 2010, and conflicting national standards shall be withdrawn at the latest by August 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN ISO 10497:2004.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of ISO 10497:2010 has been approved by CEN as a EN ISO 10497:2010 without any modification.

Contents

Page

Introduction

This International Standard covers the requirements and method for evaluating the performance of valves when they are exposed to defined fire conditions. The performance requirements establish limits of acceptability of a valve, regardless of size or pressure rating. The burn period has been established to represent the maximum time required to extinguish most fires. Fires of longer duration are considered to be of major magnitude, with consequences greater than those anticipated in the test.

The test pressure during the burn is set at 0,2 MPa (2 bar) for soft-seated valves rated PN 10, PN 16, PN 25 and PN 40, Class 150 and Class 300, to better simulate the conditions that would be expected in a process plant when a fire is detected and pumps are shut down. In this case, the source of pressure in the system is the hydrostatic head resulting from liquid levels in towers and vessels. This situation is approximated by this lower test pressure.

In production facilities, valves are typically of a higher rating and the pressure source is not easily reduced when a fire is detected. Therefore, for all other valves, the test pressure during the burn is set at a higher value to better simulate the expected service conditions in these facilities.

Use of this International Standard assumes that the execution of its provisions is entrusted to appropriately qualified and experienced personnel, because it calls for procedures that can be injurious to health, if adequate precautions are not taken. This International Standard refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage of the procedure.

Testing of valves — Fire type-testing requirements

1 Scope

This International Standard specifies fire type-testing requirements and a fire type-test method for confirming the pressure-containing capability of a valve under pressure during and after the fire test. It is not applicable to the testing requirements for valve actuators other than manually operated gear boxes or similar mechanisms when these form part of the normal valve assembly. Other types of valve actuators (e.g. electrical, pneumatic or hydraulic) can need special protection to operate in the environment considered in this valve test, and the fire testing of such actuators is outside the scope of this International Standard.

Fire test certificates of valves previously tested according to previous editions of ISO 10497 and to similar internationally recognized fire test standards are also acceptable.

NOTE For the purposes of this International Standard, the terms “fire type-test” and “fire test” are synonymous.

2 Normative references

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

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

IEC 60584-2, *Thermocouples — Part 2: Tolerances*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
nominal size
DN
alphanumeric designation of size for components of a pipework system, which is used for reference purposes, comprising the letters DN followed by a dimensionless whole number which is indirectly related to the physical size, in millimetres, of the bore or outside diameter of the end connections

NOTE Adapted from ISO 6708:—, definition 2.1.

3.2
nominal pressure
PN
numerical designation relating to pressure which is a convenient rounded number for reference purposes, and which comprises the letters PN followed by the appropriate reference number

NOTE 1 It is intended that all equipment of the same nominal size (DN) designated by the same PN number have compatible mating dimensions.