Ventiilid. Ümbriskesta tugevus. Osa 3: Eksperimentaalmeetod

Valves - Shell design strength - Part 3: Experimental method

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12516-3:2003 sisaldab Euroopa standardi EN 12516-3:2002 + AC:2003 ingliskeelset teksti. Käesolev dokument on jõustatud 18.02.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 12516-3:2003 consists of the English text of the European standard EN 12516-3:2002 + AC:2003. This document is endorsed on 18.02.2003 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This standard specifies requirements for an experimental method to prove that representative samples of valve shells and their body ends, made in cast iron, steel or copper alloy materials, are designed to possess the required pressure containing capability, with an adequate margin of safety	**Scope:** This standard specifies requirements for an experimental method to prove that representative samples of valve shells and their body ends, made in cast iron, steel or copper alloy materials, are designed to possess the required pressure containing capability, with an adequate margin of safety

ICS 23.060.01

Võtmesõnad: compressive strength, enclosures, experimentation, industrial fittings, materials, strength of materials, strength tests, test pressure, testing, wall thicknesses, valves

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 12516-3

October 2002

ICS 23.060.01

English version

Valves - Shell design strength - Part 3: Experimental method

Appareils de robinetterie - Résistance mécanique des enveloppes - Partie 3: Méthode expérimentale

Armaturen - Gehäusefestigkeit - Teil 3: Experimentelles Verfahren

This European Standard was approved by CEN on 1 August 2002.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 12516-3:2002 E

Contents

Foreword

This document (EN 12516-3:2002) has been prepared by 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 April 2003, and conflicting national standards shall be withdrawn at the latest by April 2003.

EN 12516 consists of three parts :

— Part 1 : Tabulation method for steel valve shells ;

— Part 2 : Calculation method for steel valve shells ;

— Part 3 : Experimental method.

This document 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(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

Annex A is informative

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

Introduction

This standard establishes an experimental method of assessing the strength of valve shells by applying an elevated hydrostatic pressure test at room temperature.

The experimental test factor, *C*, for use in the equation to determine the elevated hydrostatic test pressure, takes into account the ductility of the various materials. Information on the origin of the experimental test factor, *C*, is given in annex A.

This standard may be used as an alternative method to those to be specified in Part 1 (Tabulation method) or Part 2, (Calculation method) within the limits specified in the scope.

1 Scope

This standard specifies requirements for an experimental method to prove that representative samples of valve shells and their body ends, made in cast iron, steel or copper alloy materials, are designed to possess the required pressure containing capability, with an adequate margin of safety.

This standard is not applicable to valves designed on the basis of time dependent strength values (creep) or valves designed for pulsating pressure applications (fatigue).

NOTE For valves needing to comply with the EU Directive 97/23/EC (PED), the upper limit for application of this standard without calculation, is when the maximum allowable pressure at room temperature, PS_{RT}, multiplied by the DN-number is less than 3000 bar. This standard may be used to supplement the Tabulation method for steel valves, Part 1, and the Calculation method for steel valves, Part 2 without limit.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 736-2, *Valves — Terminology — Part 2 : Definition of components of valves.*

EN 736-3, *Valves — Terminology — Part 3 : Definition of terms.*

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in EN 736-2 and EN 736-3 apply.

In this standard, the term component shall be taken to mean the body, the bonnet and the cover.

4 Symbols

The following symbols are used in this standard *:*

A is the percentage elongation after fracture, in per cent ;

C is the experimental test factor ;

C_b is the experimental test factor for the body ;

C_{bc} is the experimental test factor for the bonnet or cover ;

e_{mes} is the measured wall thickness, in millimetres ;