

## **Bolted bonnet steel gate valves for the petroleum, petrochemical and allied industries**

Bolted bonnet steel gate valves for the petroleum, petrochemical and allied industries

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 10434:2004 sisaldab Euroopa standardi EN ISO 10434:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 26.10.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 10434:2004 consists of the English text of the European standard EN ISO 10434:2004.</p> <p>This document is endorsed on 26.10.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<p><b>Käsitlusala:</b></p> <p>This International Standard specifies the requirements for a heavy-duty series of bolted bonnet steel gate valves for petroleum refinery and related applications where corrosion, erosion and other service conditions would indicate a need for full port openings, heavy wall sections and large stem diameters.</p>	<p><b>Scope:</b></p> <p>This International Standard specifies the requirements for a heavy-duty series of bolted bonnet steel gate valves for petroleum refinery and related applications where corrosion, erosion and other service conditions would indicate a need for full port openings, heavy wall sections and large stem diameters.</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ICS 75.180.20

Võtmesõnad:

**English version**

**Bolted bonnet steel gate valves for the petroleum,  
petrochemical and allied industries  
(ISO 10434 : 2004)**

Robinets-vannes en acier à chapeau  
boulonné pour les industries du  
pétrole, de la pétrochimie et les indus-  
tries connexes (ISO 10434 : 2004)

Schieber aus Stahl mit geflanschem  
Oberteil für die Erdöl-, petroche-  
mische und verwandte Industrien  
(ISO 10434 : 2004)

This European Standard was approved by CEN on 2004-07-01.

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.

The European Standards exist 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, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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

## Foreword

International Standard

ISO 10434 : 2004 Bolted bonnet steel gate valves for the petroleum, petrochemical and allied industries, which was prepared by ISO/TC 153 'Valves' of the International Organization for Standardization, has been adopted by Technical Committee CEN/TC 69 'Industrial valves', the Secretariat of which is held by AFNOR, as a European Standard.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, and conflicting national standards withdrawn, by January 2005 at the latest.

In accordance with the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard:

Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland, and the United Kingdom.

## Endorsement notice

The text of the International Standard ISO 10434 : 2004 was approved by CEN as a European Standard without any modification.

## Contents

Page

<b>Foreword</b> .....	<b>2</b>
<b>Introduction</b> .....	<b>2</b>
<b>1 Scope</b> .....	<b>3</b>
<b>2 Normative references</b> .....	<b>3</b>
<b>3 Terms and definitions</b> .....	<b>5</b>
<b>4 Pressure/temperature ratings</b> .....	<b>5</b>
<b>5 Design</b> .....	<b>5</b>
<b>6 Materials</b> .....	<b>20</b>
<b>7 Testing, inspection and examination</b> .....	<b>23</b>
<b>8 Marking</b> .....	<b>26</b>
<b>9 Preparation for despatch</b> .....	<b>27</b>
<b>Annex A (informative) Information to be specified by the purchaser</b> .....	<b>29</b>
<b>Annex B (informative) Identification of valve terms</b> .....	<b>30</b>
<b>Bibliography</b> .....	<b>32</b>

## Introduction

The purpose of this International Standard is to establish the basic requirements and practices for flanged and butt-welding end steel gate valves of bolted bonnet construction that parallel those given in American Petroleum Institute API Standard 600, eleventh edition, 2001 (ISO 10434:1998). It is not the purpose of this International Standard to replace ISO 6002 or any other International Standard that is not identified with petroleum refinery, petrochemical or natural gas industry applications.

## 1 Scope

This International Standard specifies the requirements for a heavy-duty series of bolted bonnet steel gate valves for petroleum refinery and related applications where corrosion, erosion and other service conditions would indicate a need for full port openings, heavy wall sections and large stem diameters.

This International Standard sets forth the requirements for the following gate valve features:

- bolted bonnet;
- outside screw and yoke;
- rising stems;
- non-rising handwheels;
- single or double gate;
- wedge or parallel seating;
- metallic seating surfaces;
- flanged or butt-welding ends.

It covers valves of the nominal sizes DN:

- 25; 32; 40; 50; 65; 80; 100; 150; 200; 250; 300; 350; 400; 450; 500; 600;

corresponding to nominal pipe sizes NPS:

- 1; 1 1/4; 1 1/2; 2; 2 1/2; 3; 4; 6; 8; 10; 12; 14; 16; 18; 20; 24;

and applies for pressure Class designations:

- 150; 300; 600; 900; 1500; 2500.

## 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*

ISO 5208, *Industrial valves — Pressure testing of valves*

ISO 5209, *General purpose industrial valves — Marking*

ISO 5210, *Industrial valves — Multi-turn valve actuator attachments*

ISO 5752, *Metal valves for use in flanged pipe systems — Face-to-face and centre-to-face dimensions*

ISO 9606-1, *Approval testing of welders — Fusion welding — Part 1: Steels*

ISO 15607, *Specification and qualification of welding procedures for metallic materials — Part 1: General rules*

ISO 15609-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding<sup>1)</sup>*

ISO 15610, *Specification and qualification of welding procedures for metallic materials — Qualification based on tested welding consumables*

ISO 15614-1, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 1: Arc and gas welding of steels and arc welding of nickel and nickel alloys*

ISO 15614-2, *Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 2: Arc welding of aluminium and its alloys<sup>2)</sup>*

ASME B1.1, *Unified inch screw threads (UN and UNR thread form)*

ASME B1.5, *Acme screw threads*

ASME B1.8, *Stub acme screw threads*

ASME B1.12, *Class 5 interference-fit thread*

ASME B1.20.1, *Pipe threads, general purpose (inch)*

ASME B16.5, *Pipe flanges and flanged fittings*

ASME B16.10, *Face-to face and end-to-end dimensions of valves*

ASME B16.11, *Forged fittings, socket-welding and threaded*

ASME B16.34:1996, *Valves — Flanged, threaded and welding end*

ASME B18.2.2, *Square and hex nuts — Inch series*

ASME BPVC-IX, *BPVC Section IX — Welding and brazing qualifications*

ASTM A193, *Standard specification for alloy-steel and stainless steel bolting materials for high temperature service*

ASTM A194, *Standard specification for carbon and alloy steel nuts for bolts for high pressure or high temperature service, or both*

---

1) To be published. (Replaces ISO 9956-2:1995)

2) To be published. (Replaces ISO 9956-4:1995)