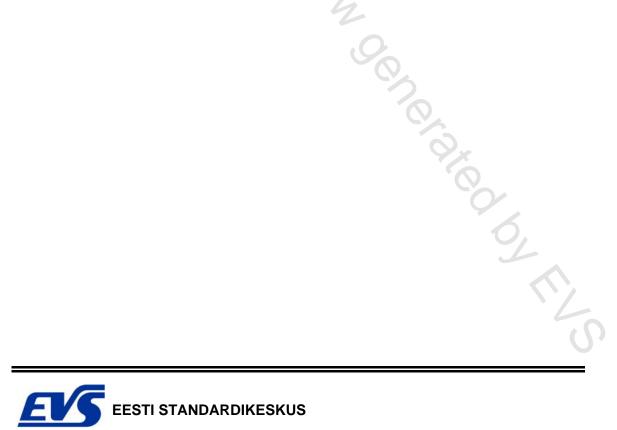
# Welding - Welding of reinforcing steel -Part 2: Non-load bearing welded joints

Welding - Welding of reinforcing steel - Part 2: Nonload bearing welded joints



### EESTI STANDARDI EESSÕNA

### NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 17660-2:2006 sisaldab Euroopa standardi EN ISO 17660-2:2006 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 17660-2:2006 consists of the English text of the European standard EN ISO 17660-2:2006.
Käesolev dokument on jõustatud 27.10.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 27.10.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

Käsitlusala: This part of ISO 17660 is applicable to the welding of weldable reinforcing steel and stainless reinforcing steel of non load- bearing welded joints, in workshops or on site. It specifies requirements for materials, design and execution of welded joints, welding personnel, quality requirements, examination and testing.	Scope: This part of ISO 17660 is applicable to the welding of weldable reinforcing steel and stainless reinforcing steel of non load- bearing welded joints, in workshops or on site. It specifies requirements for materials, design and execution of welded joints, welding personnel, quality requirements, examination and testing.
ICS 25.160.10 Võtmesõnad:	
	12

# **EUROPEAN STANDARD** NORME EUROPÉENNE **EUROPÄISCHE NORM**

### EN ISO 17660-2

September 2006

ICS 25,160,10

**English Version** 

### Welding - Welding of reinforcing steel - Part 2: Non load-bearing welded joints (ISO 17660-2:2006)

Soudage - Soudage des aciers d'armatures - Partie 2: Assemblages non transmettants (ISO 17660-2:2006)

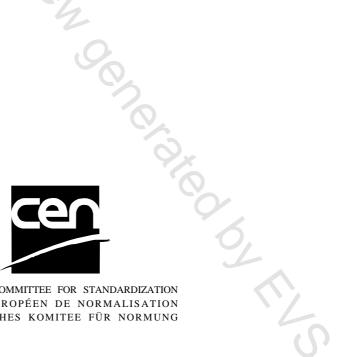
Schweißen - Schweißen von Betonstahl - Tel 2: Nichttragende Schweißverbindungen (ISO 17660-2:2006)

This European Standard was approved by CEN on 2 August 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, 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: rue de Stassart, 36 B-1050 Brussels

© 2006 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN ISO 17660-2:2006: E

### Foreword

This document (EN ISO 17660-2:2006) has been prepared by Technical Committee CEN/TC 121 "Welding", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 44 "Welding and allied processes".

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 March 2007, and conflicting national standards shall be withdrawn at the latest by March 2007.

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

# **INTERNATIONAL STANDARD**

# ISO 17660-2

First edition 2006-09-01

# v v Welding — Welding of reinforcing steel — Part 2: Non load-bearing welded joints

Assem. Soudage — Soudage des aciers d'armatures — Partie 2: Assemblages non transmettants



Reference number ISO 17660-2:2006(E)

#### PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

<text> Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below

© ISO 2006

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office Case postale 56 • CH-1211 Geneva 20 Tel. + 41 22 749 01 11 Fax + 41 22 749 09 47 E-mail copyright@iso.org Web www.iso.org Published in Switzerland

### Contents

Forewo	ord	iv
Introdu	uction	v
1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	Symbols and abbreviated terms	2
5	Welding processes	3
6	Non load-bearing welded joints	3
7	Materials	5
8	Quality requirements	5
9	Welding personnel	5
10	Welding procedure specification (WPS)	6
11	Welding procedures	6
12	Production weld test	8
13	Execution and inspection of production welding of reinforcing steel	8
14	Examination and testing of test specimens	9
15	Production log	10
	A (informative) Technical knowledge of welding coordinator for welding reinforcing steel bars	
Annex	B (informative) Test specimens	12
	C (informative) Evaluation of testing of welded joints	
Annex	D (informative) Example for production log	14
Annex	E (informative) Examples of diameter combinations for welding cross joints using welding processes 21 and 23	15
Bibliog	Jraphy	16

### Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 17660-2 was prepared by the European Committee for Standardization (CEN) Technical Committee CEN/TC 121, *Welding*, in collaboration with Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 10, *Unification of requirements in the field of metal welding*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

ISO 17660 consists of the following parts, under the general title *Welding* — *Welding* of reinforcing steel:

- Part 1: Load-bearing welded joints
- Part 2: Non load-bearing welded joints

Requests for official interpretations of any aspect of this part of ISO 17660 should be directed to the Secretariat of ISO/TC 44/SC 10 via your national standards body. A complete listing of these bodies can be found at www.iso.org.

iv

### Introduction

Reinforcing steel bars are produced by a number of process routes and usually have a ribbed profile. Taking s cou. ) know. these issues into account, it is apparent that both the welder and the welding coordinator require a specific level of skill and job knowledge and that special procedures for quality assurance need to be adopted.

## Welding — Welding of reinforcing steel —

# Part 2: Non load-bearing welded joints

### 1 Scope

This part of ISO 17660 is applicable to the welding of weldable reinforcing steel and stainless reinforcing steel of non load-bearing welded joints, in workshops or on site. It specifies requirements for materials, design and execution of welded joints, welding personnel, quality requirements, examination and testing.

Load-bearing welded joints are covered by ISO 17660-1.

### 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 3834-4, Quality requirements for fusion welding of metallic materials — Part 4: Elementary quality requirements

ISO 5817, Welding — Fusion-welded joints in steel, nickel, titanium and their alloys (beam welding excluded) — Quality levels for imperfections

ISO 14731:—<sup>1</sup>), Welding coordination — Tasks and responsibilities

ISO 15609-1, Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 1: Arc welding

ISO 15609-5, Specification and qualification of welding procedures for metallic materials — Welding procedure specification — Part 5: Resistance welding

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 15614-12, Specification and qualification of welding procedures for metallic materials — Welding procedure test — Part 12: Spot, seam and projection welding

ISO 15630-1, Steel for the reinforcement and prestressing of concrete — Test methods — Part 1: Reinforcing bars, wire rod and wire

ISO 16020, Steel for the reinforcement and prestressing of concrete — Vocabulary

EN 10079, Definition of steel products

EN 10080, Steel for the reinforcement of concrete — Weldable reinforcing steel — General

<sup>1)</sup> To be published (revision of ISO 14731:1997, EN 719:1994).