

**Teras. Suhtelise pikenemise väärtuste
ümbearvestamine. Osa 1: Süsinikterased ja
madallegeerterased**

Steel - Conversion of elongation values - Part 1:
Carbon and low alloy steels

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN ISO 2566-1:2000 sisaldab Euroopa standardi EN ISO 2566-1:1999 ingliskeelset teksti.

Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN ISO 2566-1:2000 consists of the English text of the European standard EN ISO 2566-1:1999.

This document is endorsed on 11.01.2000 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 part of ISO 2566 specifies a method of converting room temperature percentage elongations after fracture obtained on various proportional and non-proportional gauge lengths to other gauge lengths.

Scope:

This part of ISO 2566 specifies a method of converting room temperature percentage elongations after fracture obtained on various proportional and non-proportional gauge lengths to other gauge lengths.

ICS 77.040.10

Võtmesõnad:

English version

Steel – Conversion of elongation values

Part 1: Carbon and low alloy steels
(ISO 2566-1 : 1984)

Acier – Conversion des valeurs
d'allongement – Partie 1: Aciers au
carbone et aciers faiblement alliés
(ISO 2566-1 : 1984)

Stahl – Umrechnung von Bruchdeh-
nungswerten – Teil 1: Unlegierte und
niedrig legierte Stähle
(ISO 2566-1 : 1984)

This European Standard was approved by CEN on 1999-04-25.

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CEN

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

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Foreword

International Standard

ISO 2566-1 : 1984 Steel – Conversion of elongation values – Part 1: Carbon and low alloy steels, which was prepared by ISO/TC 17 ‘Steel’ of the International Organization for Standardization, has been adopted by Technical Committee EC/SS/TC 1 ‘Steel testing’, 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 December 1999 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, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Endorsement notice

The text of the International Standard ISO 2566-1 : 1984 was approved by CEN as a European Standard without any modification.

0 Introduction

Several different gauge lengths are commonly in use for the determination of percentage elongation of steels in tensile testing. Fixed gauge lengths of 50, 80, 100 and 200 mm are used; proportional gauge lengths of $k\sqrt{S_0}$ are also used for flat and round test pieces, where k may be one of a number of values, i.e. 4; 5,65; 8,16; and 11,3.

The value $5,65\sqrt{S_0}$ is adopted as the internationally preferred proportional gauge length.

Arising from this choice and the existence of specifications stipulating minimum percentage elongations on different gauge lengths, a growing need has been evident for an International Standard which could be used to convert test results into values based on the different gauge lengths. This part of ISO 2566 accordingly includes tables of conversion factors, tables of actual conversions for some of the most commonly used gauge lengths and elongation values, and figures which may also be used for such conversions. When using these conversions, however, note should be taken of the limitations on their applicability as stated in clause 1.

While, as indicated, the conversions are considered to be reliable within the stated limitations, because of the various factors influencing the determination of percentage elongations, they shall be used for acceptance purposes only by agreement between the customer and supplier.

In cases of dispute, the elongation shall be determined on the gauge length stated in the relevant specification.

1 Scope and field of application

This part of ISO 2566 specifies a method of converting room temperature percentage elongations after fracture obtained on various proportional and non-proportional gauge lengths to other gauge lengths.

The formula (see clause 4) on which conversions are based is considered to be reliable when applied to carbon, carbon manganese, molybdenum and chromium molybdenum steels within the tensile strength range 300 to 700 N/mm² and in the hot-rolled, hot-rolled and normalized or annealed conditions, with or without tempering.

These conversions are not applicable to

- a) cold reduced steels;
- b) quenched and tempered steels;
- c) austenitic steels.

Neither should they be used where the gauge length exceeds $25\sqrt{S_0}$ or where the width to thickness ratio of the test piece exceeds 20.

Care should be exercised in the case of strip under 4 mm thickness, as the index in the formula given in clause 4 increases with decreasing thickness; the value to be used shall be the subject of agreement between the customer and the supplier.

2 Symbols

In this part of ISO 2566, the symbols shown in table 1 are used.

Table 1 — List of symbols

Symbol	Description
A	Percentage elongation on gauge length, L_0 , after fracture, obtained on test
A_r	Percentage elongation on a different gauge length, required by conversion
d	Diameter of test piece
L_0	Original gauge length
S_0	Original cross-sectional area of test piece

3 Definitions

For the purpose of this part of ISO 2566, the following definitions apply:

3.1 gauge length: Any length of the parallel portion of the test piece used for measurement of strain.

The term is hereafter used in this part of ISO 2566 to denote the original gauge length, L_0 , marked on the test piece for the determination of percentage elongation after fracture, A .