Irish Standard
I.S. EN ISO 4885:2017

Ferrous materials - Heat treatments - Vocabulary (ISO 4885:2017)

I.S. EN ISO 4885:2017

Incorporating amendments/corrigenda/National Annexes issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation — recommendation based on the consensus of an expert panel and subject to public consultation.

SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

NOTE: The date of any NSAI previous adoption may not match the date of its original CEN/CENELEC document.

This document is based on:	*Published:*
EN ISO 4885:2017	2017-02-22

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2017-03-24	01.040.25 01.040.77 25.200 77.140.01 NOTE: If blank see CEN/CENELEC cover page

NSAI
1 Swift Square,
Northwood, Santry
Dublin 9

T +353 1 807 3800
F +353 1 807 3838
E standards@nsai.ie
W NSAI.ie

Sales:
T +353 1 857 6730
F +353 1 857 6729
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

National Foreword

I.S. EN ISO 4885:2017 is the adopted Irish version of the European Document EN ISO 4885:2017, Ferrous materials - Heat treatments - Vocabulary (ISO 4885:2017)

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

For relationships with other publications refer to the NSAI web store.

Compliance with this document does not of itself confer immunity from legal obligations.

In line with international standards practice the decimal point is shown as a comma (,) throughout this document.

This page is intentionally left blank

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 4885

February 2017

ICS 01.040.25; 01.040.77; 25.200; 77.140.01

Supersedes EN 10052:1993

English Version

Ferrous materials - Heat treatments - Vocabulary (ISO 4885:2017)

Matériaux ferreux - Traitements thermiques - Vocabulaire (ISO 4885:2017)

Eisenwerkstoffe - Wärmebehandlung - Begriffe (ISO 4885:2017)

This European Standard was approved by CEN on 14 February 2017.

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-CENELEC 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-CENELEC 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

European foreword

This document (EN ISO 4885:2017) has been prepared by Technical Committee ISO/TC 17 “Steel” in collaboration with Technical Committee ECISS/TC 100 “General issues” the secretariat of which is held by BSI.

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 2017, and conflicting national standards shall be withdrawn at the latest by August 2017.

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 10052:1993.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 4885:2017 has been approved by CEN as EN ISO 4885:2017 without any modification.

This page is intentionally left blank

INTERNATIONAL STANDARD

ISO 4885

Second edition
2017-02

Ferrous materials — Heat treatments — Vocabulary

Matériaux ferreux — Traitements thermiques — Vocabulaire

Reference number
ISO 4885:2017(E)

COPYRIGHT PROTECTED DOCUMENT

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 17, *Steel*.

This second edition cancels and replaces the first edition (ISO 4885:1996), which has been technically revised.

Ferrous materials — Heat treatments — Vocabulary

1 Scope

This document defines important terms used in the heat treatment of ferrous materials.

NOTE The term ferrous materials include products and workpieces of steel and cast iron.

Annex A provides an alphabetical list of terms defined in this document, as well as their equivalents in French, German, Chinese and Japanese.

Table 1 shows the various iron-carbon (Fe-C) phases.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
acicular structure
structure which appears in the form of needles in a micrograph

3.2
activity
effective concentration of species under non-ideal (e.g. concentrated) conditions; for *heat treatment* (3.108), this means the effective concentration of carbon or nitrogen (or both) in heat treatment media and in ferrous materials

Note 1 to entry: Ratio of the vapour pressure of a gas (usually carbon or nitrogen) in a given state (e.g. in *austenite* (3.12) of specific carbon/nitrogen concentration) to the vapour pressure of the pure gas, as a reference state, at the same temperature.

3.3
ageing
change in the properties of steels depending on time and temperature after hot working or *heat treatment* (3.108) or after cold-working operation due to the migration of interstitial elements

Note 1 to entry: The ageing phenomenon can lead to higher strength and lower ductility.

Note 2 to entry: The ageing can be accelerated either by cold forming and/or subsequent *heating* (3.109) to moderate temperatures (e.g. 250 °C) and soaking (e.g. for 1 h) to create the ageing effects.

3.4
air-hardening steel
DEPRECATED: self-hardening steel
steel, the *hardenability* (3.103) of which is such that *cooling* (3.45) in air produces a martensitic structure in objects of considerable size