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## European foreword

This document (EN 10225-1:2019) has been prepared by Technical Committee CEN/TC 459 “ECISS - European Committee for Iron and Steel Standardization”<sup>1</sup>, 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of an identical text or by endorsement, at the latest by November 2019, and conflicting national standards shall be withdrawn at the latest by November 2019.

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

This document, together with EN 10225-2:2019, EN 10225-3:2019, and EN 10225-4:2019, supersedes EN 10225:2009.

This European Standard consists of the following parts, under the general title *‘Weldable structural steels for fixed offshore structures – Technical delivery conditions’*:

- Part 1: Plates
- Part 2: Sections
- Part 3: Hot finished hollow sections
- Part 4: Cold formed hollow sections

In comparison to the previous edition the following technical changes were made:

- split of the standard in four parts;
- the steel names were adapted to EN 10027-1;
- former grades of group 3 are no longer listed, new options with the same enhanced properties have been introduced (**Options 2 and 3**);
- an informative Annex F was added for the prequalification of steels for fixed offshore structures in arctic areas.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

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<sup>1</sup> Through its subcommittee SC 3 “Structural steels other than reinforcements” (secretariat: DIN)

## 1 Scope

This document specifies requirements for weldable structural steels, in the form of plates, to be used in the fabrication of fixed offshore structures.

The following thickness limitations are given in this standard:

- S355NLO up to and including 200 mm;
- S355MLO, S420MLO, S460MLO, S500MLO up to and including 120 mm;
- S420QLO, S460QLO, S500QLO, S550QLO, S620QLO, S690QLO up to and including 150 mm.

Greater thicknesses can be agreed, provided the technical requirements of this European Standard are maintained.

This European Standard is applicable to steels for offshore structures, designed to operate in the offshore sector, including plate for structural hollow sections (see EN 10225-4). It does not apply to plates supplied for the fabrication of subsea pipelines, risers, process equipment, process piping and other utilities. It is primarily applicable to the North Sea Sector, but may also be applicable in other areas provided that due consideration is given to local conditions e.g. design temperature.

**NOTE** This document has an informative Annex F on the prequalification of steels for fixed offshore structures in arctic areas.

Minimum yield strengths up to 690 MPa are specified together with impact properties at temperatures down to  $-40^{\circ}\text{C}$ .

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EN 1011-1, *Welding — Recommendations for welding of metallic materials — Part 1: General guidance for arc welding*

EN 10020, *Definition and classification of grades of steel*

EN 10021, *General technical delivery conditions for steel products*

EN 10027-1, *Designation systems for steels — Part 1: Steel names*

EN 10027-2, *Designation systems for steels — Part 2: Numerical system*

EN 10029, *Hot-rolled steel plates 3 mm thick or above — Tolerances on dimensions and shape*

EN 10051, *Continuously hot-rolled strip and plate/sheet cut from wide strip of non-alloy and alloy steels — Tolerances on dimensions and shape*

EN 10079, *Definition of steel products*

EN 10160, *Ultrasonic testing of steel flat product of thickness equal or greater than 6 mm (reflection method)*