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**High yield strength steel plates and wide  
flats for cold forming —**

**Part 2:**

**Delivery condition for normalized,  
normalized rolled and as-rolled steels**

*Tôles et larges-plats en acier à haute limite d'élasticité pour formage  
à froid —*

*Partie 2: Conditions de livraison des aciers dans les états normalisé,  
de laminage normalisant et brut de laminage*



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## 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 6930-2 was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 3, *Steels for structural purposes*.

This first edition, together with ISO 6930-1:2001, cancels and replaces ISO 6930:1983 all clauses of which have been technically revised.

ISO 6930 consists of the following parts, under the general title *High yield strength steel plates and wide flats for cold forming*:

- *Part 1: Delivery conditions for thermomechanically-rolled steels*
- *Part 2: Delivery condition for normalized, normalized rolled and as-rolled steels*

# High yield strength steel plates and wide flats for cold forming —

## Part 2: Delivery condition for normalized, normalized rolled and as-rolled steels

### 1 Scope

**1.1** This part of ISO 6930 specifies the requirements for weldable high yield strength steels for cold forming.

This part of ISO 6930 applies to plates and wide-flats, hot-rolled on reversing mills, both having a thickness between 4 mm and 50 mm (inclusive) and supplied in the normalized, normalized rolled and as-rolled delivery condition.

**1.2** This part of ISO 6930 does not apply to weldable structural steels, whether or not of special quality, which are covered by other International Standards, namely:

- high yield strength steel products for cold forming delivered in thermomechanically rolled condition (ISO 6930-1);
- structural steels (ISO 630);
- high yield strength flat steel products (ISO 4950-1, ISO 4950-2 and ISO 4950-3);
- hot-rolled steel sheet of higher yield strength with improved formability (ISO 5951).

### 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 148, *Steel — Charpy impact test (V-notch)*

ISO 377, *Steel and steel products — Location and preparation of samples and test pieces for mechanical testing*

ISO 404:1992, *Steel and steel products — General technical delivery requirements*

ISO 2566-1:1984, *Steel — Conversion of elongation values — Part 1: Carbon and low alloy steels*

ISO 6892, *Metallic materials — Tensile testing at ambient temperature*

ISO 7438, *Metallic materials — Bend test*

ISO/TR 9769, *Steel and iron — Review of available methods of analysis*

ISO 10474, *Steel and steel products — Inspection documents*

ISO 14284, *Steel and iron — Sampling and preparation of samples for the determination of chemical composition*

### 3 Terms and definitions

For the purposes of this document, the following terms and definition apply.

- 3.1**  
**as-rolled steel (AR)**  
steel without any special rolling and/or heat treatment condition
- 3.2**  
**normalized steel (N)**  
steel obtained by a normalizing treatment, i.e. heat treatment consisting of austenitizing followed by cooling in air
- 3.3**  
**normalized rolled steel (N)**  
steel obtained by normalizing rolling
- 3.4**  
**normalizing rolling (N)**  
rolling process in which the final deformation is carried out within a certain temperature range leading to a material condition equivalent to that obtained after normalizing so that the specified values of the mechanical properties are retained even after normalizing
- 3.5**  
**wide flat**  
finished flat product of width greater than 150 mm and a thickness generally over 4 mm, always supplied in lengths, i.e. not coiled and whose edges are sharp

NOTE The wide flat is hot-rolled on the four sides (or in box passes) or produced by shearing or flame-cutting wider flat products. Wide flats rolled on all four sides are sometimes termed universal plates.

[ISO 6929:1987]

### 4 General requirements

#### 4.1 Steelmaking process

Unless otherwise specified at the time of the enquiry and the order, the steelmaking process is left to the discretion of the manufacturer; it shall, however, be possible to disclose it to the purchaser, if he so requests, at the time of the delivery.

#### 4.2 Method of deoxidation

The steels shall be fully killed and made to a fine grain practice.

#### 4.3 Production process

Unless otherwise specified at the time of the enquiry and the order, the production process is left to the discretion of the manufacturer.