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International Standard



3189/2

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**Sockets for wire ropes for general purposes —  
Part 2: Special requirements for sockets produced  
by forging or machined from the solid**

*Douilles pour câbles en acier d'usages courants — Partie 2: Exigences particulières concernant les douilles forgées ou usinées à partir d'une masse solide*

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Descriptors : lifting equipment, wire rope, sockets (ropes), specifications, tests.

## 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3189/2 was prepared by Technical Committee ISO/TC 111, *Round steel link chains, lifting hooks and accessories*.

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# Socketts for wire ropes for general purposes — Part 2: Special requirements for sockets produced by forging or machined from the solid

## 1 Scope and field of application

This part of ISO 3189 specifies the special requirements for materials and method of manufacture of sockets produced by forging or by machining from the solid. The general characteristics, critical dimensions, prototype test requirements, general quality control and conditions of acceptance are dealt with in ISO 3189/1.

## 2 References

ISO 261, *ISO general purpose metric screw threads — General plan.*

ISO 643, *Steels — Micrographic determination of the ferritic or austenitic grain size.*

ISO 965, *ISO general purpose metric screw threads — Tolerances.*

ISO 3189/1, *Socketts for wire ropes for general purposes — Part 1: General characteristics and conditions of acceptance.*

## 3 General conditions of acceptance

Socketts shall comply with the requirements of ISO 3189/1 as well as with those in this part of ISO 3189.

## 4 Materials and heat treatment

### 4.1 Quality of material

The steel used shall be produced by the open hearth or electric process, or by oxygen blown process.

It shall be fully killed and, when heat-treated, be capable of producing in the finished socket the mechanical properties required by this specification.

In its finished state as supplied to the socket-maker, the steel shall meet the following requirements, as determined by check analysis on the finished socket.

Its sulfur and phosphorus content shall be restricted as follows:

	Cast analysis	Check analysis
Sulfur, max.	0,045 %	0,050 %
Phosphorus, max.	0,040 %	0,045 %

The steel shall be made in conformity with a suitable deoxidation practice to obtain an austenitic grain size of 5 or finer, when tested in accordance with ISO 643.

This could be achieved, for example, by ensuring that it contains sufficient aluminium, or an equivalent element, to permit the manufacture of socketts stabilized against strain age embrittlement during service; a minimum value of 0,020 % metallic aluminium is given for guidance.

Within the above limitations, it is the responsibility of the socket-maker to select steel so that the finished socket, suitably heat-treated, meets the mechanical properties specified in this part of ISO 3189.

### 4.2 Heat treatment

Socketts shall, after forging or gas cutting, be subjected to a suitable heat treatment.

## 5 Socket manufacture

Socketts complying with this part of ISO 3189 shall be (open) type I or (closed) type II, and shall conform to the critical dimensions specified in ISO 3189/1 (see table 1 and figures 1 and 2).

### 5.1 Bodies

Bodies for this type of socket shall be produced in one piece by drop forging, hand forging or machining from the solid; the body shall be neatly and cleanly made. All flashes or fins produced in manufacture shall be removed. All sharp edges shall be suitably radiused. Welding shall not be permitted.