



**International  
Standard**

**ISO 6934-5**

**Steel for the prestressing of  
concrete —**

**Part 5:  
Hot-rolled steel bars with or  
without subsequent processing**

*Acier pour armatures de précontrainte —*

*Partie 5: Barres en acier laminées à chaud avec ou sans  
transformation ultérieure*

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**Second edition  
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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.

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 document 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](http://www.iso.org/directives)).

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For an explanation of the voluntary nature of standards, 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 [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 17, *Steel*, Subcommittee SC 16, *Steels for the reinforcement and prestressing of concrete*.

This second edition cancels and replaces the first edition (ISO 6934-5:1991), which has been technically revised.

The main changes are as follows:

- the normative references, steel grade and test method have been revised;
- [Table 1](#) have been split to [Table 1](#) and [Table 2](#);
- retest requirements have been added (see [Clause 9](#)).

A list of all parts in the ISO 6934 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

# Steel for the prestressing of concrete —

## Part 5: Hot-rolled steel bars with or without subsequent processing

### 1 Scope

This document specifies requirements for round high tensile strength steel bars for the prestressing of concrete. The surface can be plain or threaded.

### 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.

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

ISO 6934-1, *Steel for the prestressing of concrete — Part 1: General requirements*

ISO 15630-3, *Steel for the reinforcement and prestressing of concrete — Test methods — Part 3: Prestressing steel*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 6934-1 apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 4 Conditions of manufacture

#### 4.1 Steel

The bars shall be manufactured from steel in accordance with ISO 6934-1.

The steel shall be hot rolled into bars and, if required, subsequently processed to give the specified mechanical properties.

The nominal diameter of the bars shall be in the range of 15 mm to 75 mm. Recommended nominal diameters,  $d$ , are given in [Table 1](#).

By agreement between the manufacturer and purchaser, threaded bars for which the nominal diameters are other than those shown in [Table 1](#) may be used.

Longitudinal cracks which do not impair the specified properties of the bar shall not be considered as defects.

Table 1 — Dimensions, mass per unit length and permissible deviations

Nominal diameter $d$ mm	Nominal cross-sectional area $S_n$ mm <sup>2</sup>	Mass per unit length		
		Reference kg/m	Permissible deviation %	
15	177	1,44	+6/-2	
17	227	1,84		
(17,5) 18	255	1,95		
20	314	2,55		
23	415	3,38		
25	491,0	4,10		
26	531	4,31		
26,5	552	4,48		
32	804	6,53		
36	1 018	8,27		
40	1 257	10,21		
47	1 735	14,10		
50	1 964	15,95		+6/-5
57	2 552	20,73		
60	2 827	23,36		
63,5	3 167	26,50		
65	3 318	26,96		
70	3 848	31,80		
75	4 418	35,89		

NOTE 1 The nominal cross-sectional area is for information only.  
NOTE 2 If agreed between the purchaser and manufacturer, different mass per length can be applied.

4.2 Welds

There shall be no welds or other joints in the bar supplied to the purchaser.

4.3 Threaded ends

Where the bars have threaded ends, the threads shall be cold rolled to a profile agreed upon by the purchaser and manufacturer.

5 Surface configuration

The surface configuration may be either plain or threaded. A typical figure of threaded bars has been given in [Figure 1](#).

The declared thread parameters should not be outside the thresholds shown in the following [Table 2](#).

Table 2 — Ranges for the thread parameters

Core diameter		Rib height	Rib spacing	Rib inclination	Rib top width	Rib bottom width
$d_h$	$d_v$	$a$	$c$	$\beta$	$b_k$	$b_F$
0,95d-1,02d	0,92d-1,02d	0,025d-0,10d	0,30d-0,60d	75°-85°	0,05d-0,20d	0,10d-0,50d