
INTERNATIONAL STANDARD



3766

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Building and civil engineering drawings – Symbols for concrete reinforcement

Dessins de bâtiment et de génie civil – Représentation symbolique des armatures de béton

First edition – 1977-02-15

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UDC 744.43 : 624

Ref. No. ISO 3766-1977 (E)

Descriptors : architecture, civil engineering, reinforcement, prestressing steels, engineering drawings, graphic symbols.

Price based on 5 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

International Standard ISO 3766 was developed by Technical Committee ISO/TC 10, *Technical drawings*, and was circulated to the member bodies in May 1975.

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It has been approved by the member bodies of the following countries :

Australia	Germany	Romania
Austria	Hungary	South Africa, Rep. of
Belgium	India	Sweden
Brazil	Italy	Turkey
Canada	Mexico	United Kingdom
Chile	New Zealand	U.S.S.R.
Denmark	Norway	Yugoslavia
Finland	Pakistan	
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The member bodies of the following countries expressed disapproval of the document on technical grounds :

Netherlands
Switzerland



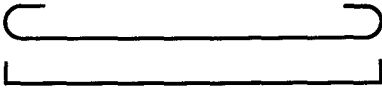

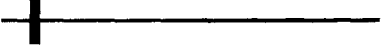

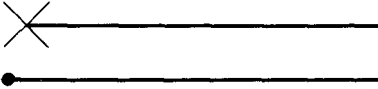
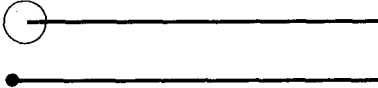
Building and civil engineering drawings – Symbols for concrete reinforcement

1 SCOPE AND FIELD OF APPLICATION







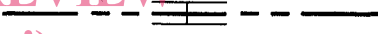

This International Standard establishes a system of symbols for use on drawings for reinforcement in reinforced concrete and in prestressed concrete.

2 GRAPHICAL SYMBOLS

2.1 Ordinary reinforcement

No.	Designation and description	Symbol
2.1.1	Reinforcing bar, continuous extra-thick line	
2.1.2	Section of reinforcing bar	
2.1.3	Bar with end anchorages a) with hooks b) with right angle bends	
2.1.4	Bar without end anchorages If necessary to indicate ends of the bar where bars are not separated on the drawing	
2.1.5	Anchorage ring or plate	
2.1.6	End view of anchorage	
2.1.7	Bar bent at right angle away from the reader Alternatively, for clarity, where bars are very close and for microfilming	
2.1.8	Bar bent at right angle towards the reader Alternatively, for clarity, where bars are very close and for microfilming	

2.2 Prestressed reinforcement

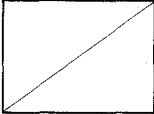
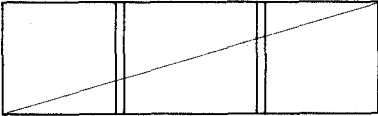
No.	Designation and description	Symbol
2.2.1	Prestressing bar or cable, long chain double-dashed extra-thick line ¹⁾	
2.2.2	Section of post-tensioned reinforcement in pipes or conduits	
2.2.3	Section of prestressed reinforcement	
2.2.4	Anchorage at tensioning end ¹⁾	
2.2.5	Fixed anchorage ¹⁾	
2.2.6	End view of anchorage	
2.2.7	Movable splice ¹⁾	
2.2.8	Fixed splice ¹⁾	

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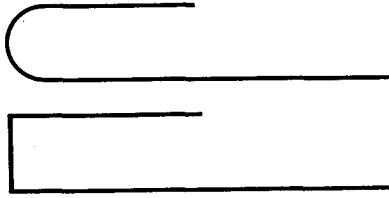

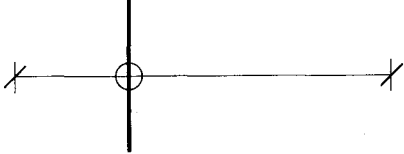
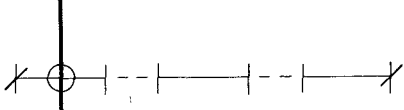
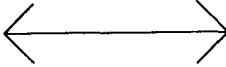
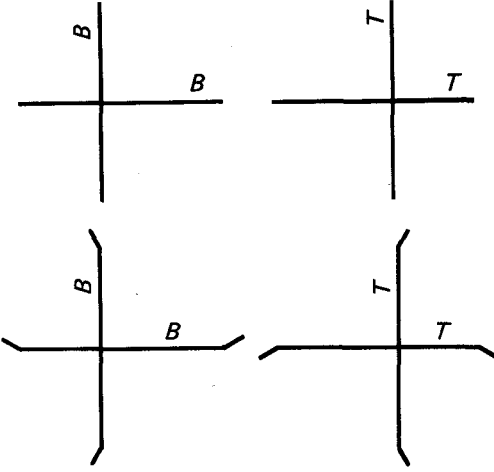
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2.3 Welded fabrics

No.	Designation	Symbol
2.3.1	One sheet of fabric, shown on plan	
2.3.2	Identical sheets of fabric in a row	

1) When no confusion with ordinary reinforcement can possibly arise, prestressed reinforcement can be drawn with a continuous extra-thick line.

3 DRAWING CONVENTIONS

No.	Convention	Symbol
3.1	<p>Bends shall normally be drawn to scale</p> <p>Bends with the smallest permitted bend radius may be drawn with intersecting straight lines</p>	
3.2	<p>A bundle of bars may be drawn with a single line, end markings indicating the number of bars in the bundle</p> <p><i>Example</i> : Bundle with three identical bars</p>	
3.3	<p>Each set of identical bars, stirrups or links shall be indicated by one bar, stirrup or link drawn with continuous extra-thick lines, with a continuous thin line across the set terminated by short oblique lines to mark the extreme bars, stirrups or links</p> <p>A circle drawn with a continuous thin line connects the "set line" with the correct bar, stirrup or link</p>	
3.4	<p>Bars placed in groups, each group spaced over the same distance and containing an identical number of identical bars, may be indicated as shown in the figure</p> <p>https://standards.iteh.ai/catalog/standards/sist/e4c3675-8729-467b-bacc-85a9db57a1b9/iso-3766-1977</p>	
3.5	<p>Two-way reinforcement shall be shown in section, or marked with text or symbol in order to show the direction of bars in the outside layer on each face of the construction in plan or elevation</p>	
3.6	<p>On plan drawing for simple arrangements the top-layer and bottom-layer reinforcement shall have letters indicating the location of the layer added to the symbols</p> <p>If end marks are used, the end marks shall be drawn upwards or to the left for the bottom-layer and downwards or to the right for the top-layer</p> <p>(B : bottom T : top)</p>	

No.	Convention	Symbol
<p>3.7</p>	<p>On elevations of walls with reinforcement on both faces, the reinforcement shall have letters added to the symbols, indicating the location of the layer</p> <p>If end marks are used, the end marks shall be drawn upwards or to the left for far face reinforcement, and downwards or to the right for near face reinforcement</p> <p>(NF : near face FF : far face)</p>	
<p>3.8</p>	<p>If the arrangement of the reinforcement is not clearly shown by the section, an additional sketch showing the reinforcement may be drawn outside the section</p>	
<p>3.9</p>	<p>All the types of stirrups or links present shall be indicated on the drawing. If the arrangement is complicated, it may be clarified by the aid of a sketch in connection with the notation</p>	

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4 NOTATIONS

Items of information concerning reinforcement shall be written in the longitudinal direction of the bars or along reference lines indicating the bars in question.

4.1 The following information concerning reinforcing bars shall be given :

- a) number;
- b) size;
- c) quality;
- d) length;
- e) spacing in millimetres;
- f) bar reference number;
- g) location in slab or wall.

4.2 The following information concerning bundles of reinforcing bars shall be given :

- a) number of bundles;
- b) number of bars in a bundle;
- c) size;
- d) quality;
- e) length;
- f) bar reference number;
- g) spacing of bundles in millimetres;
- h) location.

4.3 Items of information for welded fabric shall be written along the diagonal line. The number of sheets of fabric shall be indicated together with the fabric type reference.

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