

Indian Standard

**HIGH STRENGTH DEFORMED
STEEL BARS AND WIRES FOR
CONCRETE REINFORCEMENT —
SPECIFICATION**

(Fourth Revision)

1 SCOPE

1.1 This standard covers the requirements of deformed steel bars and wires for use as reinforcement in concrete, in the following strength grades:

- a) Fe415, Fe 415D;
- b) Fe 500, Fe 500D;
- c) Fe 550, Fe 550D; and
- d) Fe 600.

NOTES

1 The figures following the symbol Fe indicate the specified minimum 0.2 percent proof stress or yield stress in N/mm².

2 The letter D following the strength grade indicates the category with same specified minimum 0.2 percent proof stress/yield stress but with enhanced specified minimum percentage elongation.

1.2 This standard allows the chemical composition and carbon equivalent to be limited so that the material can be readily welded by conventional welding procedures. Material not conforming to these limits is generally difficult to weld for which special care and precautions will have to be exercised.

1.3 This standard applies to hot-rolled steel without subsequent treatment, or to hot-rolled steel with controlled cooling and tempering and to cold-worked steel. The production process is at the discretion of the manufacturer.

1.4 This standard also applies to reinforcing bars and wires supplied in coil form but the requirements of this Indian Standard apply to the straightened product.

1.5 This standard also applies to reinforcing bars and wires which maybe subsequently coated.

1.6 Deformed bars produced by re-rolling finished products such as plates and rails (virgin or used or scrap), or by rolling material for which the metallurgical history is not fully documented or not known, are not acceptable as per this Indian Standard.

2 REFERENCES

The standards listed below contain provisions, which through reference in this text constitute provisions of

this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No</i>	<i>Title</i>
228 (Parts 1 to 24)	Methods for chemical analysis of steels
1387 : 1993	General requirements for the supply of metallurgical materials (<i>second revision</i>)
1599 : 1985	Method for bend test (<i>second revision</i>)
1608 : 2005	Metallic materials - Tensile testing at ambient temperature (<i>third revision</i>)
2062 : 2006	Hot rolled low, medium and high tensile structural steel (<i>sixth revision</i>)
2770 (Part 1):	Methods of testing bond in 1967 reinforced concrete: Part 1 Pull-out test.
9417 : 1989	Recommendations for welding cold-worked steel bars for reinforced concrete construction (<i>first revision</i>)
11587 : 1986	Structural weather resistant steels