

**MAURITIAN  
STANDARD**

**MS 34:2015**  
**(BS 4482:2005 + A1:2007)**

Third edition  
2015 -04-11

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**Steel wire for the reinforcement of  
concrete products- Specification**

ICS 77.140.15; 91.080.40

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**Mauritius Standards Bureau  
Moka**

## National foreword

**MS 34:2015** was drawn up by the Mauritius Standards Bureau on the recommendation of the **Building and Construction Standards Committee** and approved by the **Standards Council** on 5 March 2015. It was notified in the Government Gazette on **11 April 2015\***.

This Mauritian Standard is an adoption of the British Standard **BS 4482:2005 +A1:2007**, and was implemented with the permission of the British Standards Publishing Ltd.

This new edition cancels and replaces MS 34:2002 which is withdrawn. This edition incorporates a full revision of the standard and the main changes are as follows:

- (i) the characteristic strength has been increased to 500 MPa;
- (ii) the ductility requirements have been aligned with grade B500A of MS 10:2015;
- (iii) for sizes up to and including 12 mm in coil, plain round wire of grade 250 MPa is now covered by this standard.

For the purposes of this standard the following editorial change should be made:

the words 'British Standard' should be substituted by 'Mauritian Standard';

\* **General Notice No. 622 of 2015**



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# Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
<hr/>	
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Symbols	4
5 Designations	5
6 Steelmaking and manufacturing processes	5
7 Product characteristics	5
8 Evaluation of conformity	10
9 Test methods	12
10 Identification	13
11 Verification of properties in the case of dispute	13
<hr/>	
Annex A (normative) Bond test for ribbed and indented steel wire — Beam test	14
Annex B (normative) Identification requirements	22
<hr/>	
Bibliography	24
<hr/>	
Figure 1 — Rib geometry example with two rows of transverse ribs	8
Figure 2 — Indentation geometry (example with three rows of indentations)	9
Figure A.1 — Dimensions of the hinge for beam type A ( $d < 16$ mm)	14
Figure A.2 — Dimensions of the hinge for beam type B ( $d \geq 16$ mm)	15
Figure A.3 — Beam test type A ( $d < 16$ mm)	15
Figure A.4 — Beam test type B ( $d \geq 16$ mm)	16
Figure A.5 — Bond test type A ( $d < 16$ mm) — Reinforcement of beam specimens	18
Figure A.6 — Bond test type B ( $d \geq 16$ mm) — Reinforcement of beam specimens	19
Figure B.1 — Example of manufacturer's identification mark (using widened ribs)	22
<hr/>	
Table 1 — List of symbols	4
Table 2 — Chemical composition (maximum % by mass)	5
Table 3 — Characteristic tensile properties	6
Table 4 — Nominal cross-sectional area and mass per metre of preferred diameters	7
Table 5 — Ranges for rib parameters	8
Table 6 — Characteristic relative rib area	8
Table 7 — Ranges for the indentation parameters	9
Table 8 — Depth of indentations	9
Table 9 — Absolute minimum values of tensile properties	10
Table 10 — Coefficient $k$ as a function of the number $n$ of test results (for a reliable failure rate of 5 % [ $p = 0.95$ ] at a probability of 90 %)	12
Table 11 — Coefficient $k$ as a function of the number ( $n$ ) of test results (for a reliable failure rate of 10 % [ $p = 0.90$ ] at a probability of 90 %)	12
Table A.1 — Series of reinforcing wire diameters for testing of bond	16
Table B.1 — Identification of the country of origin	23
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## Foreword

This British Standard has been prepared by Subcommittee ISE/9/1, and is a revision of BS 4482:1985, which will be withdrawn on 1 January 2006. This edition incorporates a full revision of the standard. The standard now contains provisions for plain, indented and ribbed wire. Requirements are also specified for any of these wires in the decoiled condition. The characteristic strength has been increased to 500 MPa, and ductility requirements have been aligned with grade B500A of BS 4449:2005.

The start and finish of text introduced by Amendment No. 1 is indicated in the text by tags **[A1]** **[A1]**.

For sizes up to and including 12 mm in coil, plain round wire of grade 250 MPa is now covered by this standard. For larger sizes, for example for dowel bar applications, reference should be made to BS EN 10025-1. For dowel bars for use in concrete pavements, reference should be made to BS EN 13877-3.

This standard has been written so that it can be used in conjunction with BS EN 10080:2005. Definitions, symbols, steelmaking and manufacturing processes, routine inspection and testing, test methods, identification of the manufacturer and technical class and verification of mechanical properties in the case of dispute are all taken from BS EN 10080:2005.

BS EN 10080:2005 does not define steel grades or technical classes, and requires that technical classes should be defined in accordance with BS EN 10080:2005, by specified values of  $R_e$ ,  $R_m/R_e$ ,  $A_{gt}$ ,  $R_{eact}/R_{enom}$  (where appropriate), fatigue strength (where required), bend performance, weldability, bond strength, tolerances and dimensions. All wires in this standard meet the requirements of BS EN 10080:2005. No fatigue performance is specified.

BS EN 10080:2005 contains an informative Annex ZA, which describes how that standard can be used for the purposes of CE marking of reinforcing steels. Annex ZA and 8.2, 8.3 and 8.4 of BS EN 10080:2005 relate to the role of the notified body in assessing products for an EC certificate of conformity, and as such are not included in this standard. It is not a requirement of this British Standard that materials produced to it should meet the requirements for CE marking.

Where CE marking is required for the purposes of complying with the EU Construction Products Directive, reference ought to be made to BS EN 10080:2005.

Wires to this standard in sizes 8 mm and above meet the A class ductility of Annex C of BS EN 1992-1-1:2004, although this design code relates only to ribbed steels, and not plain or indented.

To avoid confusion, it is recommended that where wire is required for applications covered by BS EN 1992-1-1:2004, material should be specified to BS 4449:2005, and not to this standard. Similarly, this standard should not be used to specify wire for the manufacture of structural welded fabric according to BS 4483. In this case, material should be specified to BS 4449:2005.

This standard comes into effect on 1 January 2006.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

**Compliance with a British Standard cannot confer immunity from legal obligations.**

### Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 24, an inside back cover and a back cover.

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## 1 Scope

This British Standard specifies requirements for plain, indented and ribbed steel wire used for the reinforcement of concrete products.

The standard contains provisions for two grades, based on mechanical properties. Grade 500 is specified for plain, indented and ribbed wires. Grade 250 is specified as an option for plain wires only.

Bar or coil for the manufacture of structural welded fabric to BS 4483 is not covered by this standard. BS 4449:2005 covers bar or coil for this purpose.

Wire for the prestressing of concrete and wire used for ties, lifting and other general engineering or industrial purposes is not covered by this standard.

The nominal wire diameter (size) range specified in this standard is 2.5 mm to 12 mm.

## 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.

BS 4449:2005, *Steel for the reinforcement of concrete — Weldable reinforcing steel — Bar, coil and decoiled product — Specification.*

BS 4483, *Steel fabric for the reinforcement of concrete.*

BS EN 1766:2000, *Products and systems for the protection and repair of concrete structures — Test methods — Reference concretes for testing.*

BS EN 1992-1-1:2004, *Eurocode 2: Design of concrete structures — General rules for buildings (together with United Kingdom National Application Document).*

BS EN 10020:2000, *Definition and classification of grades of steel.*

BS EN 10027-1, *Designation systems for steel — Steel names, principal symbols.*

BS EN 10079, *Definition of steel products.*

BS EN 10080:2005, *Steel for the reinforcement of concrete — Weldable reinforcing steel — General.*

BS EN 12390-3, *Testing hardened concrete — Part 3: Compressive strength of test specimens.*

BS EN ISO 15630-1:2002, *Steel for the reinforcement and prestressing of concrete — Test methods — Part 1: Reinforcing bars, wire rod and wire.*

## 3 Terms and definitions

For the purposes of this British Standard, the terms and definitions given in BS EN 10020, BS EN 10027-1 and BS EN 10079 and the following (some of which are taken from BS EN 10080:2005) apply:

### 3.1

#### **reinforcing steel**

steel product with a circular or practically circular cross-section which is suitable for the reinforcement of concrete

### 3.2

#### **ribbed reinforcing steel**

reinforcing steel with at least two rows of transverse ribs, which are uniformly distributed over the entire length

### 3.3

#### **longitudinal rib**

uniform continuous protrusion parallel to the axis of the wire

### 3.4

#### **transverse rib**

rib on the surface of the wire other than a longitudinal rib