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Introduction

Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international and European standards, comments will be reviewed by the relevant UK national committee before submitting the consensus UK vote and comments. If the draft standard is approved, it is usual for the resulting published standard to be adopted as a British Standard.

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BS 4483, Steel fabric for the reinforcement of concrete – Specification

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Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 June 2025. It was prepared by Technical Committee ISE/104, *Concrete Reinforcing and Pre-Stressing Steels*. A list of organizations represented on these committees can be obtained on request to the committee manager.

Supersession

This British Standard supersedes BS 4483:2005, which is withdrawn.

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This British Standard is subject to review upon the publication of BS EN 10080 in line with the current UK Standards adoption agreements.

Use of this document

Users of this British Standard are advised to consider the desirability of using steel for the manufacturing of fabric reinforcement that have been demonstrated by third-party assessment to be suitable.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. “organization” rather than “organisation”).

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1 Scope

This British Standard specifies requirements for sheets of factory-made machine-welded fabric for the reinforcement of concrete, manufactured from ribbed bars conforming to this British Standard or BS 4449:2005+A3:2016, or manufactured from bar/wire conforming to BS 4482 for wrapping fabrics D49 and D98.

This British Standard covers reinforcement used only for predominantly static loading.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions, or limits the application, of this document¹⁾. 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+A3:2016, *Steel for the reinforcement of concrete – Weldable reinforcing steel – Bar, coil and decoiled product – Specification*

BS 4482, *Steel wire for the reinforcement of concrete products – Specification*

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

BS EN ISO 15630-2, *Steel for the reinforcement and prestressing of concrete – Test methods – Part 2: Welded fabric and lattice girders*

BS EN ISO 17660-1:2006, *Welding – Welding of reinforcing steel – Part 1: Load-bearing welded joints*

3 Terms, definitions and symbols

For the purposes of this British Standard, the following terms and definitions apply.

3.1 Terms and definitions

3.1.1 batch

quantity of welded fabric of one type produced by one manufacturer at any one time

3.1.2 characteristic value

value of a material or product having a prescribed probability of not being attained in a hypothetical unlimited test series

[SOURCE: BS 4449:2005+A3:2016, **3.14**, modified, Note deleted]

3.1.3 longitudinal bar/wire

reinforcing steel in the manufacturing direction of the welded fabric

3.1.4 maximum value

value not to be exceeded during testing

3.1.5 minimum value

value below which no test result shall fall

[SOURCE: BS 4449:2005+A3:2016, **3.15**]

3.1.6 nominal diameter

diameter of a circle with an area equal to the nominal cross-sectional area of the bar/wire

3.1.7 purpose-made welded fabric

welded fabric manufactured to the user's specific requirements

¹⁾ Documents that are referred to solely in an informative manner are listed in the Bibliography.

3.1.8 standard welded fabric

welded fabric reinforcement where the bar/wire and mesh arrangement is defined by an identifiable fabric reference

3.1.9 transverse bar/wire

reinforcing steel perpendicular to the manufacturing direction of the welded fabric

3.1.10 welded fabric

arrangement of longitudinal and transverse bars/wires of the same or different nominal diameter and length that are arranged substantially at right angles to each other and factory electrical resistance welded together by automatic machines at all points of intersection

3.2 Symbols

For the purposes of this British Standard, the following symbols given in BS 4449:2005+A3:2016 apply.

NOTE A comparison between the symbols used in this British Standard and those used in BS EN 1992-1-1:2004+A1:2014 is given in Annex A.

A_n	nominal cross-sectional area (mm ²)
A_{gt}	total elongation at maximum force (%)
B	length of transverse bar/wire in welded fabric (mm)
C_v	specified characteristic value (the unit depends on the property)
d	nominal diameter of the reinforcing steel (mm)
d_c	diameter of transverse bars/wires in welded fabric (mm)
d_L	diameter of longitudinal bars/wires in welded fabric (mm)
d_{max}	nominal diameter of the thickest bar/wire (mm)
d_{min}	nominal diameter of the crossing bar/wire (mm)
f_R	relative rib area
F_s	shear force of welded joints (kN)
k	coefficient as a function of the number of test results
L	length of longitudinal bar/wire in welded mesh (mm)
m	mean value for each performance characteristic
N_C	number of transverse bars/wires in welded fabric
N_L	number of longitudinal bars/wires in welded fabric
P_C	pitch of transverse bars/wires in welded fabric (mm)
P_L	pitch of longitudinal bars/wires in welded fabric (mm)
R_e	yield strength (MPa)
R_{eH}	upper yield strength (MPa)
R_m	tensile strength (MPa)
R_m/R_e	ratio tensile strength/yield strength
$R_{p0.2}$	0.2% proof strength, non-proportional extension (MPa)
S	estimate of the standard deviation (the unit depends on the property)
u_1, u_2	overhang of the longitudinal bars/wires in welded fabric (mm)
u_3, u_4	overhang of the transverse bars/wires in welded fabric (mm)
$\bar{x}$	average value of test results (the unit depends on the property)

4 Designation

Welded fabric shall be designated with the following information:

- a) the product form (welded fabric);
- b) the number of this British Standard (i.e. BS 4483:2025);
- c) the nominal dimensions of the product (dimensions of the bars/wires, dimensions of the sheet, pitch of the bars/wires, overhangs); and

NOTE 1 Brief designations are widely used to describe standard welded fabric (see Annex B and Annex C).

- d) the grades and standard of the steel(s) used to manufacture the welded fabric.

For ordering purposes, the notation specified in Annex B, Table B.1 shall be used.

NOTE 2 Purpose-made welded fabric may be described using the indications given in Annex B, or by a fully dimensioned drawing and should be identified by the user's reference.

5 Manufacturing processes

The joints, at the intersection of the longitudinal bars/wires and the transverse bars/wires, shall be made by electrical resistance welding to provide a specified shear resistance.

NOTE Welded fabric can be composed of a different steel grade in each direction.

6 Product characteristics

6.1 Chemical composition

The requirements for the chemical composition of the bars/wires that make up a sheet of fabric shall be in accordance with BS 4449:2005+A3:2016, 7.1.

6.2 Mechanical properties of welded fabric

6.2.1 General

The characteristic value shall be (unless otherwise indicated) the lower or upper limit of the statistical tolerance interval at which there is a 90% probability ($1 - \alpha = 0.90$) that 95 % ($p = 0.95$) or 90 % ($p = 0.90$) of the values are at or above the lower limit, or at or below the upper limit respectively.

NOTE 1 This quality level refers to the long-term quality level of production.

NOTE 2 Test methods are described in Clause 8.

6.2.2 Tensile properties

The specified values for the tensile properties (R_e , R_m/R_e , A_{gt}) shall be the corresponding specified characteristic value with $p = 0.95$ for R_e and $p = 0.90$ for A_{gt} and R_m/R_e . Tensile properties (R_e , R_m/R_e , A_{gt}) shall conform to 7.1.3.1.

The manufacturer shall determine R_e and R_m using the nominal cross-sectional area of the product.

For yield strength (R_e) the upper yield strength (R_{eH}) shall be used. The manufacturer shall determine the yield strength (R_e) from the 0.2 % proof strength ($R_{p0.2}$) if a yield phenomenon is not present.

The specified characteristic values for the tensile properties shall be in accordance with Table 1.