

Steel strip intended for the manufacture of springs —

Part 1: Specification for hot rolled carbon and low alloy steel

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The organizations marked with an asterisk in the above list, together with the following, were directly represented on the Technical Committee entrusted with the preparation of this British Standard:

- Agricultural Machine Parts Export Association
- Cold Rolled Sections Association
- Spring Research and Manufacturers' Association
- Individual expert

This British Standard, having been prepared under the direction of the Iron and Steel Standards Committee, was published under the authority of the Executive Board and comes into effect on 30 January 1981

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Foreword

BS 5770, prepared under the direction of the Iron and Steel Standards Committee, is a revision and extension of the requirements for carbon steel spring materials in the 1956 edition of BS 1449 “*Steel plate, sheet and strip*” which, for the time being, will continue to apply to flat wire for springs. The revision of the requirements for these steels, which have been extended by the introduction of requirements for low alloy and stainless steels, has been prepared under the new number BS 5770 to avoid confusion with BS 1449 in regard to designations and tolerances on dimensions and also to reflect the enlargement of the range of materials specified for use in the manufacture of springs.

BS 5770 comprises four Parts as follows:

- *Part 1: Specification for hot rolled carbon and low alloy steel;*
- *Part 2: Specification for cold rolled carbon and low alloy steel;*
- *Part 3: Specification for pre-hardened and tempered carbon steel;*
- *Part 4: Specification for martensitic and austenitic stainless steel.*

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This Part of this British Standard specifies requirements for five grades of hot rolled carbon steel strip and two grades of low alloy steel strip intended for the manufacture of springs.

It covers material from 1.25 mm to 15 mm inclusive in thickness and from 12.5 mm to 450 mm inclusive in width, and supplied in either the hot rolled or annealed condition, having any one of three edge conditions and with one of three surface finishes.

This Part covers strip supplied in any one of five forms.

2 References

The titles of the standards publications referred to in this Part of this British Standard are listed on the inside back cover.

3 Definitions

For the purposes of this British Standard the following definitions apply.

3.1 Edge conditions

3.1.1

mill edge (E2)

the natural edge produced when strip is rolled

3.1.2

sheared or slit edge (E3)

the edge of strip that has been cut to size by guillotine or rotary cutters

3.1.3

rolled square edge (E6)

the edge produced by edge rolling to give an approximately square edge

3.2 Surface finish

3.2.1

pickled finish (P)

a hot rolled or a hot rolled and annealed material from which the scale has been removed by chemical means

3.3.2

mechanically descaled finish (D)

a hot rolled or a hot rolled and annealed material from which the scale has been removed by mechanical means

4 Designation system

4.1 Symbols for material condition. The following symbols shall be used to denote the material conditions:

HS = Hot rolled (see note),

HSA = Hot rolled and annealed.

NOTE The hot rolled condition will have a black oxide scale coating unless an alternative finish is specified.

4.2 Symbols for surface finishes

(other than as rolled). The following symbols shall be used to denote the surface finishes:

P = pickled,

D = mechanically descaled.

4.3 Symbols for edge conditions. The following symbols shall be used to denote the edge conditions:

E2 = mill edge,

E3 = sheared or slit edge,

E6 = rolled square edge.

4.4 Symbols for tolerances on length of

cut lengths. The following symbols shall be used to denote the tolerances on length of cut lengths (see 13.3 and Table 11):

L1 = normal tolerance,

L2 = precision tolerance.

4.5 Symbols for tolerances on flatness of

cut lengths. The following symbols shall be used to denote the tolerances on flatness of cut lengths (see 13.5 and Table 13):

F1 = normal tolerance,

F2 = precision tolerance.

4.6 Order of designation. The symbols given in 4.1 to 4.5 shall be used in the following sequence to describe the material required:

- material condition symbol, followed by the grade of steel;
- surface finish symbol;
- dimensions, width and thickness;
- product form, i.e. coils or cut lengths;
- edge condition;
- length tolerance;
- flatness tolerance.