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Specification for

Hot-Rolled Structural Steel Sections —

Part 4: Equal and unequal angles

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British Constructional Steelwork Association*	Lloyds Register of Shipping*
British Ironfounders' Association	Ministry of Defence
British Mechanical Engineering Confederation	Ministry of Defence, Army Department
British Steel Industry*	National Association of Drop Forgers and Stampers
Council of Iron Producers	National Physical Laboratory (Department of Trade and Industry)
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British Electrical and Allied Manufacturers' Association	Generating Board and the Area Boards in England and Wales
British Independent Steel Producers' Association	Greater London Council
British Industrial Measuring and Control Apparatus Manufacturers' Association	Ministry of Defence, Navy Department
Bureau Veritas	National Association of Steel Stockholders
Electricity Council, The Central Electricity	National Coal Board
	Royal Institution of Naval Architects
	Welding Institute

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Contents

	Page
Co-operating Organizations	Inside front cover
Foreword	ii
1 Scope	1
2 Basis of calculation	1
3 Tolerances	1
4 Dimensions and sectional properties of equal and unequal angles in British Standard range	1
Appendix A Dimensions and properties of ISO equal and unequal angles not included in the British Standard range	9
Table 2 — Equal angles	2
Table 3 — Unequal angles	6
Table A1 — Equal angles	10
Table A2 — Unequal angles	12
List of references	Inside back cover

Foreword

This British Standard has been prepared under the authority of the Iron and Steel Industry Standards Committee.

The adoption of a new range of metric unit based beams, columns and channels will require large capital expenditure and, if the maximum benefit is to be gained from the change, it is important that the new ranges align with the practice of other metric using countries.

Since there is less standardization internationally in relation to metric sections than is the case with inch sections, the practice of metric using countries will be influenced by work on this subject presently taking place under the auspices of International Organization for Standardization (ISO). Thus, a change cannot be justified before the choice of metric sections can be clearly identified as both meeting the technical requirements of the consumer and matching as far as possible the practice of other metric using countries.

It will be seen, therefore, that an essential prerequisite of a change to metric sections in the United Kingdom is the outcome of the discussions now taking place within ISO. Whilst considerable progress is now being made, it will inevitably be a matter of years before a full range of co-ordinated metric sized sections will be in production and fully available in the UK.

In the circumstances, and in order to meet the proposed timing for the change to the metric system in the construction industry as laid down in PD 6030, "Programme for the change to the metric system in the construction industry", a "*metric equivalent*" version of BS 4-1 has been prepared. It is emphasized that the physical dimensions of the sections included in that version of BS 4-1 have not been altered from those included in BS 4-1:1962, but in order to provide convenience to users in the construction industry in changing to the metric system, the version includes designations based on the nominal metric dimensions and mass per unit length of the sections and expresses the actual dimensions and physical properties in metric units.

For introducing the new standards for the *co-ordinated metric size ranges* based on the ISO agreements, it has been decided to produce the revision in five separate parts.

The series will include a specification for hollow sections, currently covered in BS 4-2, and to avoid confusion with BS 4 a new BS number has been allocated. The separate publications for the different section shapes will be as follows:

BS 4848-1¹⁾, *Beams and columns and Tee bars cut therefrom.*

BS 4848-2¹⁾, *Hollow sections.*

BS 4848-3¹⁾, *Channels.*

BS 4848-4, *Equal and unequal angles.*

BS 4848-5¹⁾, *Long stalk Tee bars, bulb angles and bulb flats.*

Part 4 of this series presents the British Standard range of metric sizes of equal and unequal angles. This range is selected from ISO/R 657 "Dimensions of hot-rolled steel sections", Part 1 "Equal leg angles" and Part 2 "Unequal leg angles". The remaining sizes and thicknesses in ISO/R 657-1 and ISO/R 657-2 (see Appendix A), especially other thicknesses of the British Standard range, may be available in special circumstances by advance arrangement with the supplier. Where such arrangements are made, these angles will also be supplied in accordance with the general requirements of this British Standard.

Amendment No. 4 to BS 4848-4:1972 deleted the requirements for tolerances and made reference to BS EN 10056-2.

¹⁾ In course of preparation.

Work is continuing in the European Committee ECISS/TC11 to agree a range of sizes for equal and unequal angles. When the resulting European Standard is available it will be published as BS EN 10056-1 and BS 4848-4 will be withdrawn.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 14, 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 British Standard specifies the dimensions and properties of a co-ordinated metric range of hot-rolled steel equal and unequal angles.

2 Basis of calculation

For the purposes of this standard, the mass is calculated on the basis that steel weighs 0.785 kilogram per square centimetre per metre run.

3 Tolerances

Rolling tolerances are given in BS EN 10056-2.

4 Dimensions and sectional properties of equal and unequal angles in British Standard range

The dimensions and sectional properties shall be as shown in Table 2 and Table 3.

The sizes of the toe radii are specified but the sectional properties have been calculated assuming a toe radius equal to half the root radius.