



BS 4848 : Part 5 : 1980

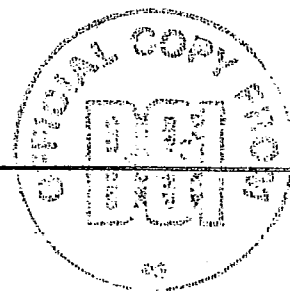
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British Standard Specification for
Hot-rolled structural steel sections

Part 5. Bulb flats

Spécification des profilés en acier de construction laminés à chaud
Partie 5. Plats à boudin

Spezifikation für warmgewalzte Profile aus Baustahl
Teil 5. Wulstflachstahl

**Foreword**

This Part of this British Standard has been prepared under the direction of the Iron and Steel Standards Committee.

The adoption of new ranges of sections based on metric units 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 countries using metric units.

The practice of countries that use metric units will be influenced by work on this subject presently taking place under the auspices of the International Organization for Standardization (ISO) and the European Coal and Steel Community (ECSC). 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 countries using metric units.

A change to metric units cannot therefore be made in the United Kingdom until the outcome of discussions now taking place within ISO and ECSC are known. Although considerable progress is being made, it will inevitably be years before a full range of co-ordinated metric-sized sections will be in production and fully available in the United Kingdom. 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 'Structural steel sections', Part 1 'Hot-rolled sections', was published in 1972 which is now under revision. It is emphasized that the physical dimensions of the sections included in BS 4 : Part 1 : 1972, for the convenience of users in the construction industry in changing to the metric system, 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.

In introducing the new standards for the co-ordinated metric size ranges based on ISO and ECSC work, it was decided to produce the revision in five separate Parts and, to avoid confusion with BS 4, a new BS number was allocated. The separate publications for the different section shapes will be as follows:

- BS 4848 : Part 1 Beams and columns and Tee bars cut therefrom
- BS 4848 : Part 2 Structural hollow sections
- BS 4848 : Part 3 Channels
- BS 4848 : Part 4 Equal and unequal angles
- BS 4848 : Part 5 Bulb flats

In recent years international agreements have resulted in certain types of structural steel sections being produced in metric based ranges which have replaced the former imperial based ranges. Such metric based sections have been standardized in BS 4848, the following Parts of which have so far been published:

- Part 2 Structural hollow sections
- Part 4 Equal and unequal angles

BS 4848 : Part 5 has been written to meet the requirements of the British shipbuilding industry and is based on Euronorm 67 'Hot rolled bulb flats', published by the Office for Official Publications of the European Communities.

Pending international agreement and subsequent BSI Committee consideration, all types of section other than those specified in Parts 2, 4 and 5 of BS 4848 are still being produced on an imperial dimensional basis although designated in equivalent metric terms.

British Standards Institution

BS 4848:Part 5:1980

1. Scope

This Part of this British Standard specifies the dimensions, tolerances and sectional properties of hot-rolled bulb flats with a bulb on one side in sizes ranging from 120 mm x 6 mm to 430 mm x 20 mm.

2. Basis of calculation

For the purposes of this standard the masses per unit length are calculated on the basis that steel weighs 0.785 kg/cm² per metre run.

3. Designation

A bulb flat shall be designated by its width and thickness in millimetres.

Example: a bulb flat 120 mm wide and 6 mm thick is designated as 120 x 6.

4. Dimensions, sectional properties and weld edge geometry

4.1 Dimensions and sectional properties. The dimensions of bulb flats illustrated in figure 1 shall be as specified in tables 1 and 4.

4.2 Weld edge geometry. The angle by which the weld edge deviates from the vertical (θ) shall not exceed 4°. The width of the bulb flat shall be measured on the longer side of the leg as illustrated in figure 2.

Table 1. Corner radius

Thickness		r_2 max.
over	up to and including	
mm	mm	mm
—	6	1.5
6	9	2.0
9	13	3.0
13	20	4.0

5. Tolerances

5.1 Dimensional tolerances. The dimensions of bulb flats shall be subject to the tolerances specified in table 2.

Table 2. Dimensional tolerances.

Nominal width b			Nominal thickness t		
over	up to and including	tolerance	over	up to and including	tolerance
mm	mm	mm	mm	mm	mm
—	120	± 1.5	—	8	+0.7, -0.3
120	180	± 2.0	6.5	11.5	+1.0, -0.3
180	300	± 3.0	8.5	13	+1.0, -0.4
300	430	± 4.0	11.5	20	+1.2, -0.4

5.2 Straightness tolerances. The maximum permitted variation, q , in straightness when measured over the overall length of the bulb flat shall be as shown in table 3.

Table 3. Straightness tolerances

Width b		Maximum permitted variation q
over	up to and including	
mm	mm	mm
—	200	$0.0030 \times \text{length}$
200	430	$0.0025 \times \text{length}$

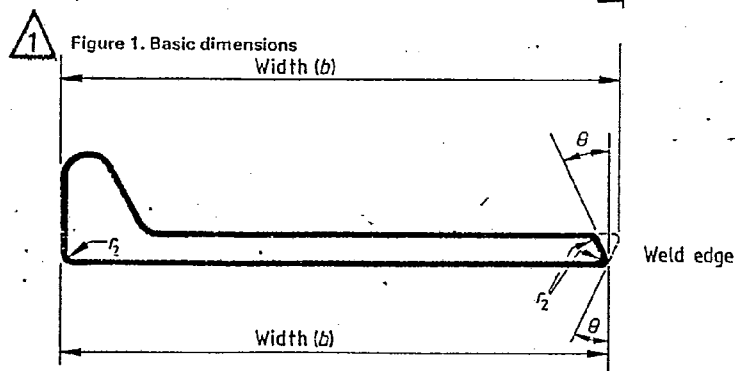
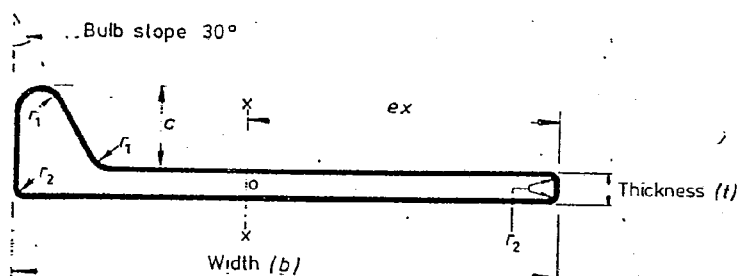


Figure 2. Weld edge geometry