

Specification for

# Axes and hatchets

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# Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee MTE/15, upon which the following bodies were represented:

- British Coal Corporation
- British Telecommunications plc
- Consumer Policy Committee of BSI
- Federation of British Hand Tool Manufacturers
- Handle Manufacturers' Association
- Institute of Carpenters
- Institute of Trading Standards Administration
- Ministry of Defence

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

- Birmingham City Council
- British Engineers Cutting Tools Association
- County Surveyors' Society
- Department of Trade and Industry (Consumer Safety Unit, CA Division)
- London Borough of Barking and Dagenham

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## Foreword

This British Standard has been prepared under the direction of the Engineering Sector Board. It supersedes BS 2945:1958 which is withdrawn and includes the mine deputy's axe used by British Coal Corporation (BCC specification 689) and axes with non-wooden handles.

The axe types and masses have been rationalized to reflect those areas where demand remains, following the market effects of chain saws.

It will be appreciated that the usage and life of an axe or hatchet are such as to make it virtually impossible to devise tests which will fully simulate the day-to-day conditions of use. Nevertheless, it is felt that the quality of axes and hatchets made according to this standard will be such that they can be purchased with confidence.

Whilst it was stated in the previous edition of this standard that wall thickness around the eye was a critical point, with the deletion of the English felling axe and the superior design of the wedge axes specified in Figure 1, this is no longer a problem.

For the purpose of this specification, the axes and hatchets are regarded as being complete with the handles; however, vital dimensions are included so that when heads and handles are purchased separately, they will be dimensionally compatible.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

**Compliance with a British Standard does not of itself 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 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 British Standard specifies the dimensions, mass, quality and performance of the following types of tools:

- wedge axe (including hatchets);
- Kent axe;
- mine deputy's axe.

Methods of test for axes and hatchets are given in Annex A and guidance on the safe use of hatchets and axes is given in Annex B which also gives recommendations for the correct storage of wooden handles.

## 2 Normative references

This standard incorporates, by dated or undated reference, provisions from other publications. These normative references are made at the appropriate places in the text and the cited publications are listed on the inside back cover. For dated references, only the edition cited applies; any subsequent amendments to or revisions of the cited publication apply to this standard only when incorporated in the reference by amendment or revision. For undated references, the latest edition of the cited publication applies, together with any amendments.

## 3 Definitions

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

### 3.1

#### **hatchet**

a chopping tool up to and including a head mass of 1 kg

### 3.2

#### **axe**

a chopping tool having a head mass over 1 kg

## 4 Material

### 4.1 Heads

Axe and hatchet heads shall be manufactured from fully killed forging quality steel from either:

- a) within the basic analysis range specified in Table 1.
- b) steels of different composition but possessing at least equivalent mechanical properties to steel of the composition specified in Table 1.

The steels shall have a controlled grain size within the range 5 ASTM to 8 ASTM (see BS 4490).

**NOTE** It is recommended that, for heads of mass over 1.4 kg, the material specification should include a chromium content of 0.20 % (m/m) to 0.30 % (m/m).

**Table 1 — Composition of axe and hatchet heads**

| Element         | Min.<br>% (m/m) | Max.<br>% (m/m) |
|-----------------|-----------------|-----------------|
| C               | 0.55            | —               |
| Si              | 0.10            | 0.40            |
| Mn              | 0.60            | 0.80            |
| S               | —               | 0.050           |
| P               | —               | 0.050           |
| Cr <sup>a</sup> | 0.20            | 0.30            |

<sup>a</sup> Recommended masses for head above 1.4 kg.

### 4.2 Handles

#### 4.2.1 General

Handles shall be made from any of the materials specified in 4.2.2 to 4.2.4, provided that they withstand the appropriate tests specified in clause 9 and Annex A.

#### 4.2.2 Wooden handles

Wooden handles shall be manufactured from hickory of a grade not below BW/BR conforming to BS 3823:1990.

#### 4.2.3 Steel handles

Where steel handles are used, they shall be either:

- a) a forged or welded extension of the head; or
- b) a seamless or welded steel tube securely fastened to the head in such a manner that they will not loosen under normal working conditions.

There shall be no opening at either end of the handle tube when the complete tool is assembled.

The butt end of steel handles shall have, securely fixed, a grip made of a material that will suffer only minimal deterioration as a result of the action of oil and grease. The minimum length of such grips shall be 165 mm. The shape shall be similar to that specified for wooden handles.

**NOTE 1** The shape may be sculptured to improve grip.

**NOTE 2** A typical analysis for steel tube for steel handles is given in Table 2.

**Table 2 — Typical composition of steel tube for steel handles**

| Element | Min.<br>% (m/m) | Max.<br>% (m/m) |
|---------|-----------------|-----------------|
| C       | 0.40            | 0.50            |
| Mn      | 1.15            | 1.45            |
| Si      | 0.10            | 0.35            |
| Cr      | 0.15            | 0.35            |