

Specification for

Engineers' cold chisels and allied tools

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Machine Engineers and Hand Tools Standards Policy Committee (MTE/-) 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
- Ministry of Defence

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

- British Steel Industry
- Coopted members

This British Standard, having been prepared under the direction of the Machine Engineers and Hand Tools Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 January 1995

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Foreword

This British Standard has been prepared under the direction of the Machine, Engineers and Hand Tools Standards Policy Committee, and supersedes BS 3066:1981 which is withdrawn.

Matters concerning safety cannot be too strongly emphasized and it is a prime requirement that a safe tool should be offered to the user.

Since publication of the original specification, the design of chisels and manufacturing techniques employed have continued to improve. It is not the intention of this standard to impose restrictions on the types of materials from which chisels may be manufactured, and so inhibit development in this direction, but greater importance is placed on tests and testing procedures.

It should be recognized that cold chisels and allied tools are prone to work hardening and that the hardness values quoted in Table 13 to Table 15 apply only at the time of manufacture.

In so far as the user is concerned, reports on accidents continue to indicate that such accidents occur as a result of abnormal usage and failure to maintain tools in a safe condition. A responsibility is therefore placed on the users, in their own interests, to ensure that their tools are properly maintained.

A leaflet on safety recommendations is available from manufacturers. An extract is reproduced as Annex A.

Fitted hand guards are available on selected chisels and allied tools, as optional extras.

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 18, 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 nominal sizes, dimensions, quality, finish and testing of engineers' cold chisels and allied tools for hand use as follows:

- flat chisels;
- cross-cut chisels;
- half-round nose chisels;
- diamond-point chisels;
- brick bolsters;
- floorboard chisels;
- plugging chisels;
- concrete or moil points;
- parallel pin punches;
- taper punches (including nail and reaper punches);
- centre punches.

2 References

2.1 Normative references

This British 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 British 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.

2.2 Informative references

This British Standard refers to other publications that provide information or guidance. Editions of these publications current at the time of issue of this standard are listed on the inside back cover, but reference should be made to the latest editions.

3 Material

Chisels and allied tools shall be manufactured from carbon or alloy steels. Carbon steel tools shall be manufactured in accordance with the requirements of Table 1. In alloy steel tools, sulfur, phosphorus and residual elements shall comply with the requirements of BS 970-2:1988, except that the main alloying element shall be not less than 0.9 % (*m/m*).

Chisels and allied tools shall not be manufactured from free cutting or semi-free cutting steel.

Hand grips shall be manufactured from high impact plastics material, natural rubber 70° hardness or from other suitable material capable of meeting the requirements of clause 8.

**Table 1 — Material specification
for carbon steel tools**

Element	Minimum % (<i>m/m</i>)	Maximum % (<i>m/m</i>)
Carbon	0.50	0.75
Manganese	0.50	0.90
Sulfur	—	0.05
Phosphorus	—	0.05
Silicon	—	0.40

4 Types and dimensions

4.1 Types

Cold chisels and allied tools shall be manufactured in either octagonal, hexagonal, square, round or oval sections. Round sections may be knurled if required.

Head types shall be of those shown in Figure 1 to Figure 11. Tools of body section below 13 mm shall have chamfered type head.

Tools of 13 mm body section and above shall have either a domed anti-mushroom type head or a conical head. The conical head dimensions shall be as stated in Table 2 to Table 9 and Table 11 to Table 12.

NOTE It is permissible for tools of 13 mm body section to have a chamfered head.

Illustrations of typical hand guards are shown in Figure 12.

4.2 Dimensions

4.2.1 Dimensions, other than length, shall be in accordance with the Table 2 to Table 12. Unless otherwise agreed between the purchaser and the manufacturer, lengths of chisels and allied tools shall be as stated in Table 2 to Table 12. Unless otherwise agreed between the purchaser and manufacturer, tolerances shall be in accordance with BS 4114:1967.

4.2.2 The designating size of chisels and bolsters shall be the nominal width of the cutting edge, and length where appropriate.

4.2.3 Concrete or moil points shall be designated by length and section (see Table 9).

4.2.4 For oval section steels the body section dimensions referred to in Table 2 to Table 9 are major axis dimensions. The minor axis shall be not less than half the major axis.

4.2.5 Punches shall be designated by the point diameter.

4.2.6 Hand guards shall be so dimensioned that they are a tight fit on the tool shaft and provide protection to the user's hand from misdirected hammer blows. They shall be designed to provide a comfortable grip.

5 Heat treatment and hardness

5.1 General

Both plain carbon and alloy steel tools shall be through-hardened, followed by tempering or stress relieving, to achieve the hardness values given in Table 13 and Table 14 when tested in accordance with 8.1.

5.2 Hardness zone at the cutting edge/tool points

5.2.1 Chisels and bolsters

The tool blade shall be heat treated to give readings within the hardness range specified in Table 13 over the appropriate minimum distance from the extreme cutting end as given in Table 15.

5.2.2 Concrete points

The hardness zone for concrete or moil points shall be calculated on the body section (see Table 9) substituted for the cutting edge size in Table 15.

5.2.3 Punches

The blade shall be heat treated to give readings within the range specified in Table 14 and the hardened zone shall extend from the tool point (working end) to a minimum point 5 mm into the body section.

5.3 Hardness zone at the head

5.3.1 Chisels, bolsters and concrete points

The tool head shall give readings within the maximum Figure specified in Table 13 over a minimum distance of 25 mm from the extreme end of the head.

5.3.2 Punches

The tool head shall give readings within the maximum Figure specified in Table 14 over a minimum distance of 20 mm from the extreme end of the head.

6 Finish

The tools shall be supplied with an effective coating of corrosion inhibitor and shall be free from flaws, seams and any other deleterious defects.

The cutting edges/tool points shall be ground and free from burrs. The blade shall be free from roughness and excessive oxide scale. The body shall be free from excessive oxide scale.

7 Marking

The following shall be legibly stamped or embossed on the body of the tool:

- a) manufacturer's name or trademark;
- b) if alloy, the word "alloy";
- c) where space permits the number of this British Standard, i.e. BS 3066:1995;
- d) where space permits, a warning advising the user to wear safety glasses, e.g. "wear safety glasses".

8 Tests

8.1 General

Cold chisels and allied tools shall be capable of passing the tests in 8.2 to 8.4 and, where applicable, 8.5.

8.2 Hardness

When tested in accordance with BS 891:1989, chisels and tools shall comply with the requirements specified in clause 5.

NOTE Hardness testing in accordance with BS 427: 1990 is permissible¹⁾.

8.3 Crack test

When tested by using one of the methods described in BS 6072:1981, there shall be no cracks.

8.4 Impact test

When tested in accordance with B.1, visual examination of the tool shall reveal no defects, damage to the cutting edge or "mushrooming" of the head.

8.5 Hand guards

When tested in accordance with B.2 there shall be no breakage or distortion of the guard.

The guard shall be resistant to damage from commonly used oils and chemicals.

¹⁾ A conversion chart for HRC to HV is given in BS 860:1967.

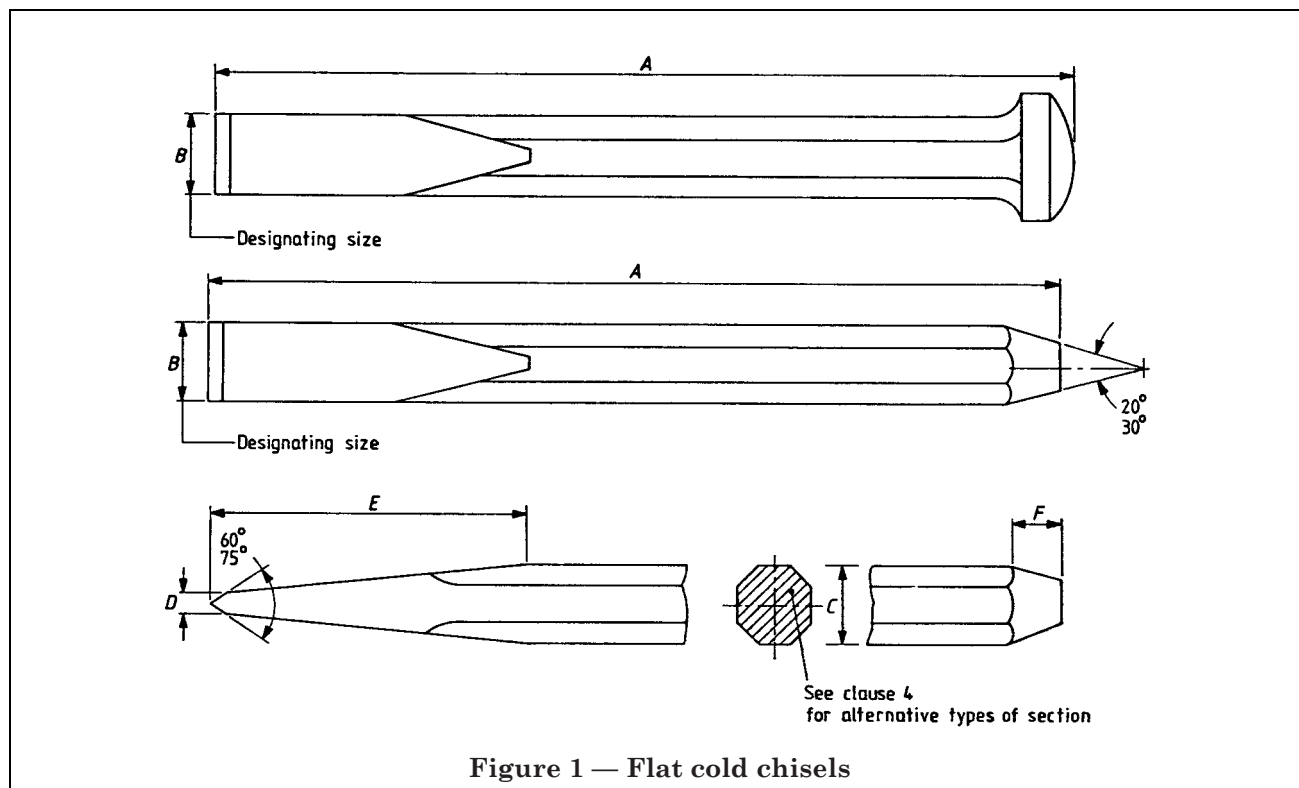


Figure 1 — Flat cold chisels

Table 2 — Nominal dimensions of flat cold chisels (see Figure 1)

Designating size		Body section across flats or diameter <i>C</i>	Blade thickness <i>D</i>	Length of blade <i>E</i>		Length of conical head <i>F</i>	
Overall length $A \pm 5.0$	Width of Cut $B \pm 0.5$			min.	max.	min.	max.
mm	mm	mm	mm	mm	mm	mm	mm
100 150	6	5.5 to 6	1.2	28	31	Chamfered	
100 125 150 200	10	8.0 to 10	1.5	35	38	Chamfered	
150 200 250	13	10.0 to 13	2.4	50	56	Chamfered	
175 200 250 300 450	16	13.0 to 16	2.8	56	63	10	13
200 225 250 300 350 450 600	19	16.0 to 19	3.0	69	75	13	16
225 250 300 450 600	22	19.0 to 22	3.0	75	88	13	19
225 250 300 450 600	25	22.0 to 25	4.0	88	100	13	19