
British Standard Specification for
**Malleable cast iron and cast copper alloy
threaded pipe fittings**

Raccords de tuyauteries filetés en fonte malléable et alliages de cuivre moulés — Spécifications

Rohrverschraubungen aus Temperguß und Kupfer-Gußlegierung

Foreword

This British Standard has been prepared under the direction of the Piping Systems Components Standards Committee. This standard constitutes a revision of BS 143 and BS 1256 : 1968 which is withdrawn.

The standard for malleable cast iron fittings was originally published in 1922 as BS 143 and complemented BS 154 for malleable and soft cast iron fittings. These standards were revised in 1938 and combined into one standard, BS 143. In 1945, BS 1256 was published for fittings with parallel internal threads and taper external threads, and both BS 143 and BS 1256 were again revised in 1952. In 1968, the two standards were revised and incorporated into one standard BS 143 and BS 1256. This combined standard was aligned as far as possible with ISO R 49 'Malleable cast iron fittings screwed in accordance with ISO Recommendation R 7', published by the International Organization for Standardization (ISO) in 1957, but certain fittings which could not be aligned were retained in their previous format, or not included in the British Standard.

This revision of BS 143 and BS 1256 is related to and follows the general format of ISO 49 'Malleable cast iron fittings threaded to ISO 7/1', published by ISO in 1983.

The main differences in this revision are the inclusion of bushes, backnuts, unions and certain types of sockets, plugs and caps previously specified in ISO R 49. The fittings have been updated, additional technical requirements and definitions have been included, and provision for BS 1256 design fittings in blackheart malleable iron has been made. The range of fittings specified has been reduced to align with the current production of UK manufacturers, and is published in metric dimensions only. This standard gives details of sizes and types of fittings in general demand, but is equally applicable to basically similar types of fittings deleted from earlier editions of BS 143 and BS 1256.

All drawings in this standard are diagrammatic without prejudice to the manufacturer's form.

Appendix A lists information to be supplied by the purchaser.

Compliance with a British Standard does not of itself confer immunity from legal obligations.



Amendment No. 1
published and effective from 28 August 1987
to BS 143 & 1256 : 1986

Specification for malleable cast iron
and cast copper alloy threaded
pipe fittings

Revised text

AMD 5542
 August 1987

Table 1. Index of fitting types, symbols and index to tables

In column 2 against types A, B, C, D, E, G, Kb, M and N, delete 'Pipe ends' and substitute 'Outlets'.

AMD 5542
 August 1987

Table 2. Pressure/temperature ratings

In the heading to column 3 delete 'temperature' and substitute 'pressure'.

AMD 5542
 August 1987

7.1 Fitting dimensions

Delete note 2 and substitute the following.

'NOTE 2. Dimensions are in agreement with ISO 49 for the majority of fittings specified. Fittings standardized and in regular production in the United Kingdom but which are not included in ISO 49 are indicated by bold type in tables 9 to 25.'

AMD 5542
 August 1987

8.1 Jointing threads

In line 1 after 'be' insert 'in'.

AMD 5542
 August 1987

9.1.1 Malleable cast iron

Delete the existing clause and substitute the following.

'**9.1.1 Malleable cast iron.** Fittings in accordance with BS 143 and BS 1256 designs shall be made of blackheart malleable cast iron or whiteheart malleable cast iron complying with BS 6681.'

AMD 5542
 August 1987

10.7 Unions

Insert the following cautionary note at the end of the existing text.

'**Caution.** Unions should only be used as complete assemblies because component parts of unions made by different manufacturers, or component parts of different types of union made by the same manufacturer, are not necessarily interchangeable.'

AMD 5542
August 1987

Table 10. Elbows, reducing A1, male and female elbows, reducing A4

In column 1 of the tabular text, delete '2 x 3/4' and substitute '2 x 3/4' and delete '4 x 3' and substitute '4 x 3'.

AMD 5542
August 1987

Table 12. Tees, reducing on the branch B1, tees, increasing on the branch B1

In column 1 of the right-hand tabular text headed 'Tees, reducing on the branch',

delete '3 x 1/2' and substitute '3 x 1/2'
delete '3 x 3/4' and substitute '3 x 3/4'
delete '4 x 1' and substitute '4 x 1'
delete '4 x 1 1/4' and substitute '4 x 1 1/4'
delete '4 x 1 1/2' and substitute '4 x 1 1/2'
delete '4 x 2 1/2' and substitute '4 x 2 1/2'
delete '6 x 3' and substitute '6 x 3'
delete '6 x 4' and substitute '6 x 4'.

In column 1 of the right-hand tabular text headed 'Tees, increasing on the branch', delete '2 x 2 1/2' and substitute '2 x 2 1/2'.

AMD 5542
August 1987

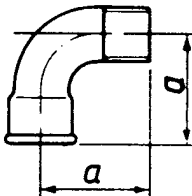
Table 13. Tees, reducing on the run and the branch B1, tees, reducing on the run and equal on the branch B1

In column 1 of the tabular text headed 'Tees, reducing on the run only', delete '3 x 2 x 3' and substitute '3 x 2 x 3' and delete '4 x 3 x 4' and substitute '4 x 3 x 4'.

AMD 5542
August 1987

Table 14. Bends D1, Male and female bends D4, Male bends D8, Pitcher tees E1, twin elbows E2

Delete the figure entitled 'Male and female bends D4' and substitute the following figure.



In the last column of the tabular text delete subheading 'b' and substitute 'c'.

AMD 5542
August 1987

Table 20. Bushes N4

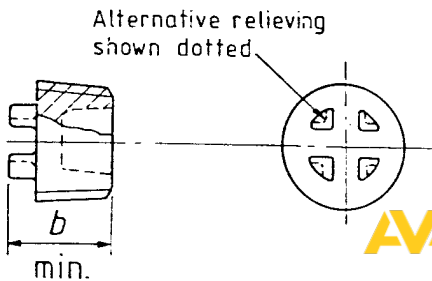
In column 1 of the left-hand tabular text, delete '1 1/2 x 1/4' and substitute '1 1/2 x 1/4'.

In column 1 of the right-hand tabular text, delete '4 x 1 1/2' and substitute '4 x 1 1/2'.

AMD 5542
August 1987

Table 23. Hexagon caps T1, round caps T2, plain plugs T8, beaded plugs T9, countersunk plugs T11 and alternative slotted head plugs for sizes 5 and 6

Delete the figure entitled 'Alternative slotted head plugs for sizes 5 and 6' and substitute the following figure.



AMD 5542
August 1987

Publications referred to

Delete 'BS 309 Whiteheart malleable iron castings' and 'BS 310 Blackheart malleable iron castings'.

Insert 'BS 6681 Specification for malleable cast iron' after the entry for BS 2779.



AMD 6632

Amendment No. 2
published and effective from 21 December 1990
to BS 143 & 1256 : 1986

Specification for malleable cast iron and cast
copper alloy threaded pipe fittings

Corrections

AMD 6632
December 1990

Clause 1 Scope

After paragraph 2, insert the following new paragraph:

'Fittings have dimensions that are not specified in this standard and requirements for these are outside the scope of this standard.'

AMD 6632
December 1990

Clause 7.1 Fitting dimensions (as amended by Amendment No. 1)

Delete note 1 and substitute the following:

'NOTE 1. Only basic dimensions are specified in this standard and other dimensions are at the discretion of the manufacturer.'



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Amendment No. 3
published and effective from 15 April 1993
to BS 143 & 1256 : 1986

Specification for malleable cast iron and cast copper
alloy threaded pipe fittings

Revised text

AMD 7692
April 1993

Contents

Delete the existing entry for appendix B and substitute the following.

'B Relationship between fitting size and nominal size (DN)'

AMD 7692
April 1993

Clause 2.3 nominal size (DN)

Delete note 3 and substitute the following.

'NOTE 3. The relationship between fitting size and nominal size (DN) is given in appendix B for guidance only.'

NOTE 4. Nominal size (DN) should not be used for the designation of fitting size.'

AMD 7692
April 1993

Clause 13. Marking

Delete the existing text and substitute the following.

'Unless it is not practicable because of casting method space limitations, fittings shall be marked at least with the following:

- (a) the manufacturer's name or trade mark;
- (b) the fitting size (as defined in 2.2).

Other markings shall not conflict with the markings given in (a) and (b)*.

When it is not practicable to mark fittings because of casting method space limitations, it is permissible to omit either or both of the markings given in (a) and (b), providing the omitted markings are given on the packing material, but in this case the fittings shall not be marked with any other markings.'

AMD 7692
April 1993

Appendix B. Relationship between thread designation and nominal size (DN)

Delete the existing title and text (not including table 27) and substitute the following.

'Appendix B. Relationship between fitting size and nominal size (DN)

The relationship between designation of thread size, which is the fitting size, and nominal size (DN) is given in table 27 for guidance only.'

Amendment No. 4
published and effective from 15 September 1995
to BS 143 & 1256 : 1986

Specification for malleable cast iron and cast copper
alloy threaded pipe fittings

NOTE. This amendment is being issued to delete from this standard the fittings covered by BS EN 10242 : 1995 *Threaded pipe fittings in malleable cast iron*.

Revised text

Foreword

After paragraph 3, insert the following new paragraph:

‘Not all fittings specified in this standard are in regular production in the United Kingdom. Reference should be made to the manufacturer for details of fittings available. A future revision of this standard will align the scope of the fittings sizes specified with those in regular production in the United Kingdom.’

AMD 8467/September 1995

Clause 1. Scope (as amended by Amendment No. 2)

Delete paragraph 1, excluding items a) and b), and substitute the following:

‘This British Standard specifies requirements for the design and performance of various fitting sizes and types which are not included in BS EN 10242. In addition, requirements for the design and performance of cast copper alloy pipe fittings are specified. Two basic designs of fittings are covered.’

Before the existing note, insert the following new note:

‘NOTE 1. Reference should be made to BS EN 10242 for those malleable cast iron pipe fittings not covered by this standard.’

Number the existing note ‘NOTE 2’.

AMD 8467/September 1995

Clause 5. Size range

Delete the existing clause entirely and substitute the following:

‘5. Size range

The fitting size shall be specified by the thread size(s) of the outlet(s) and shall be selected from the following range:

(a) for malleable cast iron: 1/8, 1/4, 1/2, 3/4, 3/8, 1, 1 $\frac{1}{4}$, 1 $\frac{1}{2}$, 2, 2 $\frac{1}{2}$, 3, 4, 5, 6;

(b) for cast copper alloy: 1/8, 1/4, 3/8, 1/2, 3/4, 1, 1 $\frac{1}{4}$, 1 $\frac{1}{2}$, 2.

NOTE 1. Malleable cast iron fittings conforming to BS 143 & BS 1256 designs having threads conforming to BS 21 (see **8.1**), but which are not covered by BS EN 10242 and ISO 49 are printed in bold type in tables 9 to 25.

Malleable cast iron fittings conforming to BS 143 design having threads conforming to ANSI/ASME B1.201 (see **8.1**) are printed in normal or bold type in tables 9 to 25.

Cast copper alloy fittings conforming to BS 143 design having threads conforming to BS 21 or ANSI/ASME B1.201 (see **8.1**) are printed in normal or bold type in tables 9 to 25 within the range of fitting sizes indicated in **5.1b**.

NOTE 2. Not all fittings specified in this standard are in regular production in the United Kingdom (see foreword). Reference should be made to the manufacturer for details of fittings available.’

AMD 8467/September 1995

Clause 7.1. Fitting dimensions (as amended by Amendment No. 1 and Amendment No. 2)

Delete note 2 entirely and substitute the following:

‘NOTE 2. Malleable cast iron fittings standardized and in regular production in the United Kingdom but which are not included in BS EN 10242 and ISO 49 are printed in bold type in tables 9 to 25.’

AMD 8467/September 1995

Table 7. Jointing threads

Add the following new column 4:

Fitting sizes applicable
See note 1
See note 2
See note 3

AMD 8467/September 1995
