

Specification for

Fixing accessories for building purposes —

**Part 1: Fixings for Sheet, Roof and Wall
Coverings**

Co-operating organizations

The Hardware and Ironmongery Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives of the following Government departments and scientific and industrial organizations:

Aluminium Federation*
 British Ironfounders Association
 British Lock and Latch Manufacturers' Association
 British Plastics Federation
 British Waterworks Association
 Cast Butt Hinge Manufacturers' Association
 Copper Development Association*
 D.S.I.R. — Building Research Station
 Guild of Architectural Ironmongers
 Institution of Municipal Engineers
 London County Council
 Metal Window Association Ltd.
 Ministry of Public Building and Works
 National Brassfoundry Association*
 National Federation of Builders' and Plumbers' Merchants*
 National Federation of Building Trades Employers*
 National Federation of Ironmongers
 Royal Institute of British Architects*
 The Royal Institution of Chartered Surveyors
 Zinc Development Association

The Government departments and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this standard:

Asbestos Cement Manufacturers' Association
 Black Bolt and Nut Association of Great Britain
 Brass Shoe Rivet Association
 British Constructional Steelwork Association
 British Malleable Tube Fittings Association (1959)
 Cut Copper and Zinc Nail Manufacturers' Association
 National Federation of Roofing Contractors
 Steel Nail Association

This British Standard, having been approved by the Hardware and Ironmongery Industry Standards Committee, and endorsed by the Chairman of the Building Divisional Council, was published under the authority of the General Council on 13 July 1964

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Foreword

This standard makes reference to the following British Standards and Codes of Practice:

BS 84, *Parallel screw threads of Whitworth form.*

BS 729, *Zinc coatings on iron and steel articles — Part 1: Hot-dip galvanized coatings — Part 2: Sherardized coatings.*

BS 916, *Black bolts, screws and nuts. Hexagon and square. B.S.W. and B.S.F.*

BS 1202, *Wire nails and cut nails for building purposes — Part 3: Aluminium nails.*

BS 1470, *Wrought aluminium and aluminium alloys. Sheet and strip.*

BS 1473, *Wrought aluminium and aluminium alloys. Rivet, bolt and screw stock for forging.*

BS 1475, *Wrought aluminium and aluminium alloys. Wire.*

BS 1476, *Wrought aluminium and aluminium alloys. Bars, rods and sections.*

BS 1580, *Unified screw threads.*

BS 1706, *Electroplated coatings of cadmium and zinc on iron and steel.*

BS 3382, *Electroplated coatings on threaded components.*

CP 3, *Code of functional requirements of buildings — Chapter IX: Durability.*

CP 143, *Sheet, roof and wall coverings.*

This British Standard is issued under the authority of the Hardware and Ironmongery Industry Standards Committee and specifies the materials, dimensions, etc., for fixing accessories for building purposes.

BS 1494, "*Fixing accessories for building purposes*" was first published in 1948 and revised in 1951. This standard covered products manufactured chiefly from steel, malleable iron, copper and brass. Owing to the development of increasingly wider uses of aluminium roofing and cladding, it later became apparent that a number of products covered by BS 1494 were being made of aluminium and consequently BS 2465, "*Aluminium fixing accessories for building purposes*" was published in 1954.

When in 1962 it became apparent that revisions were necessary to both BS 1494 and BS 2465, the Technical Committee concerned decided that it would be appropriate to combine the two standards. It was further decided to divide the standard, which will include products manufactured from all appropriate materials, into three parts as follows:

BS 1494, "*Fixing accessories for building purposes*".

— *Part 1: Fixings for sheet, roof and wall coverings;*

— *Part 2: Sundry fixings;*

— *Part 3: Fixings for pipes and gutters.*

For all details of roofing nails in steel, copper and aluminium, including spring head nails, reference should be made to BS 1202, "*Wire nails and cut nails for building purposes*".

NOTE Metric equivalents are given in Appendix A. The figures in British units are to be regarded as the standard. The metric conversions are approximate. More accurate conversions should be based on the tables in BS 350, "*Conversion factors and tables*".

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 to iv, pages 1 to 20, 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

Part 1 of this British Standard specifies requirements in respect of the materials for manufacture and the essential dimensions of the following fixing accessories:

- Hook bolts and nuts
- Drive screws
- Washers
- Self-tapping screws
- Roofing bolts, nuts and clips
- Roofing screws
- Sheeting clips.

2 Material

The materials used for the manufacture of the fixing accessories shall comply with the relevant requirements specified in the appropriate section.

The products covered by this British Standard may be used in securing roof and wall claddings made from asbestos cement, steel, aluminium, plastics, etc., to structures of steel, aluminium, concrete, brickwork or timber. Protection against corrosion may be necessary, and when dissimilar metals are in contact with each other protection against galvanic action should also be provided. It is intended that components used in conjunction with each other, e.g. nuts, bolts and washers, should always be of the same material in order to reduce any risk of galvanic corrosion from this source.

Reference should be made to British Standard Codes of Practice CP 3, “*Code of functional requirements of buildings*”, Chapter IX, “*Durability*” and the appropriate part numbers of CP 143, “*Sheet, roof and wall coverings*”.

3 Protective finishes

a) *General*. The protective finish can greatly affect the durability of the fitting and the performance of the structure. Consequently, the protective finish must be carefully selected and specified, taking account of the material from which the product is manufactured and the conditions of service likely to be encountered. Unless ordered otherwise the following products shall have the protective finish specified which is adequate for normal conditions of use. For abnormal conditions of use the protective finish shall be agreed between manufacturer and user.

By arrangement between manufacturer and user certain accessories, where practicable, may be coated with plastics.

b) *Steel products with machine screw threads*. These products shall be coated with cadmium or zinc in accordance with BS 3382¹⁾, Parts 1 and 2, and passivated as required by that standard.

c) *Steel unthreaded products or products with wood screw threads*. These products shall be coated with cadmium or zinc by one of the following methods:

- i) Electroplating in accordance with BS 1706²⁾ and passivated in accordance with that standard.
- ii) Sherardizing in accordance with BS 729, Part 2³⁾.
- iii) Hot-dip galvanizing in accordance with BS 729, Part 1⁴⁾.

d) *Self-tapping screws*. These screws shall be coated with zinc or cadmium by electroplating in accordance with BS 1706²⁾ and passivated in accordance with that standard, unless made from stainless steel.

4 Workmanship

All articles shall be free from excessive burrs and flashes which may be detrimental to their use.

¹⁾ BS 3382, “*Electroplated coatings on threaded components*”.

²⁾ BS 1706, “*Electroplated coatings of cadmium and zinc on iron and steel*”.

³⁾ BS 729, Part 2, “*Sherardized coatings*”.

⁴⁾ BS 729, Part 1, “*Hot-dip galvanized coatings*”.

5 Inspection

The customer or his representative shall, if desired, be granted facilities for the inspection of finished goods prior to delivery.

6 Manufacturer's certificate

The customer shall, on request, be entitled to a certificate stating that the articles comply with the requirements of this British Standard.

Hook bolts and nuts

7 General

- a) Hook bolts are made in several patterns and shall conform to the dimensions specified in Clauses 9 and 10, Table 1 and Figure 1 to Figure 6.
- b) Hook bolts shall, unless otherwise specified, be supplied complete with square nuts which shall conform to Clause 10.

8 Material

Special attention is directed to Clause 2, where a warning regarding the dangers of using dissimilar metals is given.

- a) *Steel hook bolts and nuts.*
 - i) Steel hook bolts shall be manufactured from rod or wire having a tensile strength of not less than 40 tonf/in² in the case of rolled thread hook bolts, and 28 tonf/in² for cut thread hook bolts.
 - ii) Steel nuts for hook bolts shall be manufactured from bar or strip having a tensile strength of not less than 28 tonf/in².
- b) *Aluminium hook bolts and nuts.*
 - i) Aluminium rolled thread or cut thread hook bolts shall be manufactured from one of the following alloys:
 - HG20-WDP as specified in BS 1475⁵⁾
 - or NG6-1/2H as specified in BS 1475⁵⁾.
 - ii) Aluminium nuts for hook bolts shall be manufactured from one of the following alloys:
 - HG9-WD as specified in BS 1475⁵⁾
 - HE30-WP as specified in BS 1476⁶⁾
 - or NS6-1/4H as specified in BS 1470⁷⁾.

9 Shank diameter

The diameter of the unthreaded portion of the shank is closely associated with the method of manufacture; it will be near the maximum major diameter of the thread for cut thread bolts and near the minimum effective diameter for those with rolled threads. The unthreaded portion of the shank on rolled thread hook bolts will therefore be approximately $\frac{3}{64}$ inch smaller than the nominal thread diameter.

10 Screw threads

- a) *General.* Screw threads on bolts and nuts shall be Unified Coarse (UNC) in accordance with BS 1580⁸⁾ or British Standard Whitworth (B.S.W.) in accordance with BS 84⁹⁾.

⁵⁾ BS 1475, "Wrought aluminium and aluminium alloys. Wire".

⁶⁾ BS 1476, "Wrought aluminium and aluminium alloys. Bars, rods and sections".

⁷⁾ BS 1470, "Wrought aluminium and aluminium alloys. Sheet and strip".

⁸⁾ BS 1580, "Unified screw threads".

⁹⁾ BS 84, "Parallel screw threads of Whitworth form".

b) *Hook bolts.*

i) Hook bolts may be supplied with either rolled or cut threads.

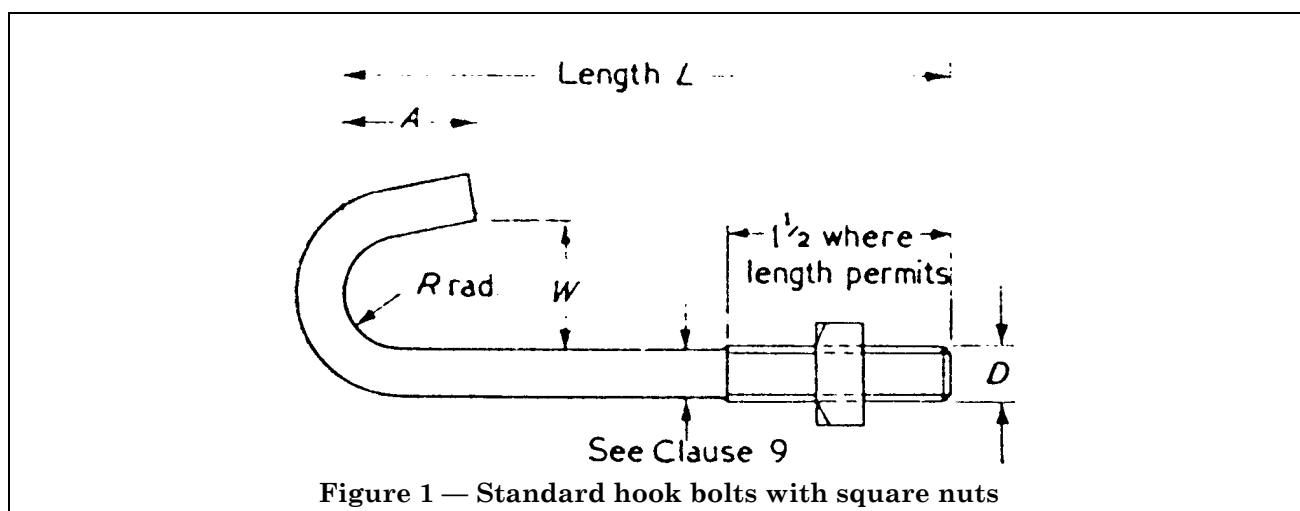
ii) Screw threads on bolts shall conform to the "Class 2A" limits and tolerances for UNC threads or the "Medium Class" limits and tolerances for B.S.W. threads.

c) *Nuts for hook bolts.* Screw threads in nuts shall conform to the "Class 1B" limits and tolerances for UNC threads or the "Normal Class" limits and tolerances for B.S.W. threads.**11 Information to be specified by the purchaser**

a) Description and BS number

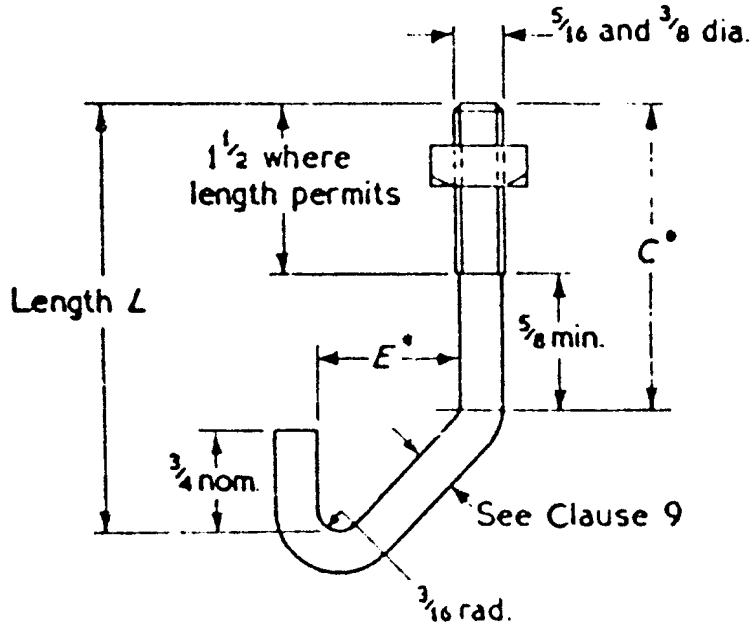
b) Material and finish

c) Diameter and length

d) Dimensions *C* and *E* for cranked pattern, Dimension *E* for "L", "U" and "J" patterns.**Table 1 — Standard hook bolts**

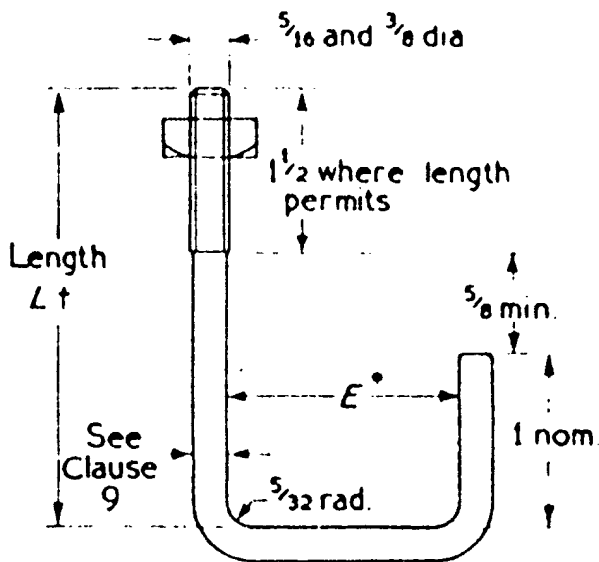
Nominal diameter <i>D</i>	Inside rad of hook <i>R</i>	Depth inside hook <i>A</i>	Width inside mouth of jaw <i>W</i>	Standard lengths ^a
	nominal	nominal	nominal	
in	in	in	in	in
$\frac{1}{4}$ ^b	$\frac{1}{4}$	$\frac{5}{8}$	$\frac{9}{16}$	3 to 6 in $\frac{1}{2}$ inch increments
$\frac{5}{16}$	$\frac{9}{32}$	$\frac{3}{4}$	$\frac{5}{8}$	3 to 8 in $\frac{1}{2}$ inch increments
$\frac{3}{8}$	$\frac{11}{32}$	$\frac{3}{4}$	$\frac{11}{16}$	3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, 5 and 6

^a The above lengths are those normally available, other lengths in $\frac{1}{2}$ inch increments may be obtained when specially ordered.
^b Suitable for light duty applications only.



* It is essential that dimensions C and E be specified when ordering in addition to diameter and length.

Figure 2 — Cranked hook bolts with square nuts



* It is essential that dimension E be specified when ordering in addition to diameter and length. The standard widths of E normally available are $2\frac{1}{8}$, $2\frac{5}{8}$, $3\frac{1}{8}$, $3\frac{5}{8}$ and $4\frac{1}{8}$ inches.

† The standard lengths L normally available are from 4 to 12 inches in increments of $\frac{1}{2}$ inch.

Figure 3 — Square bend "L" hook bolts with square nuts

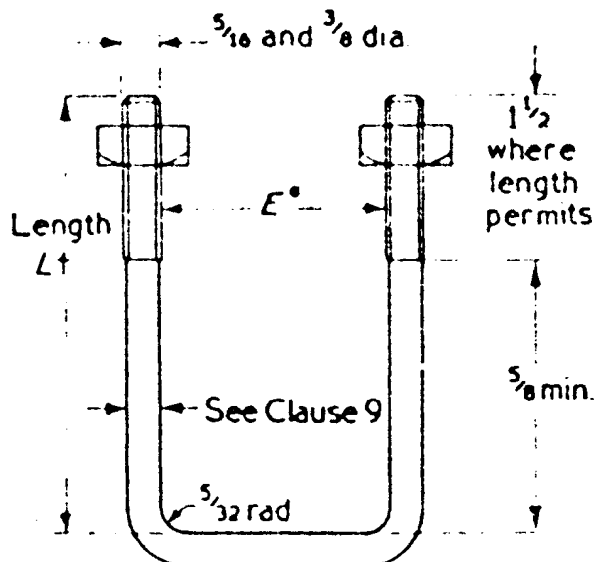
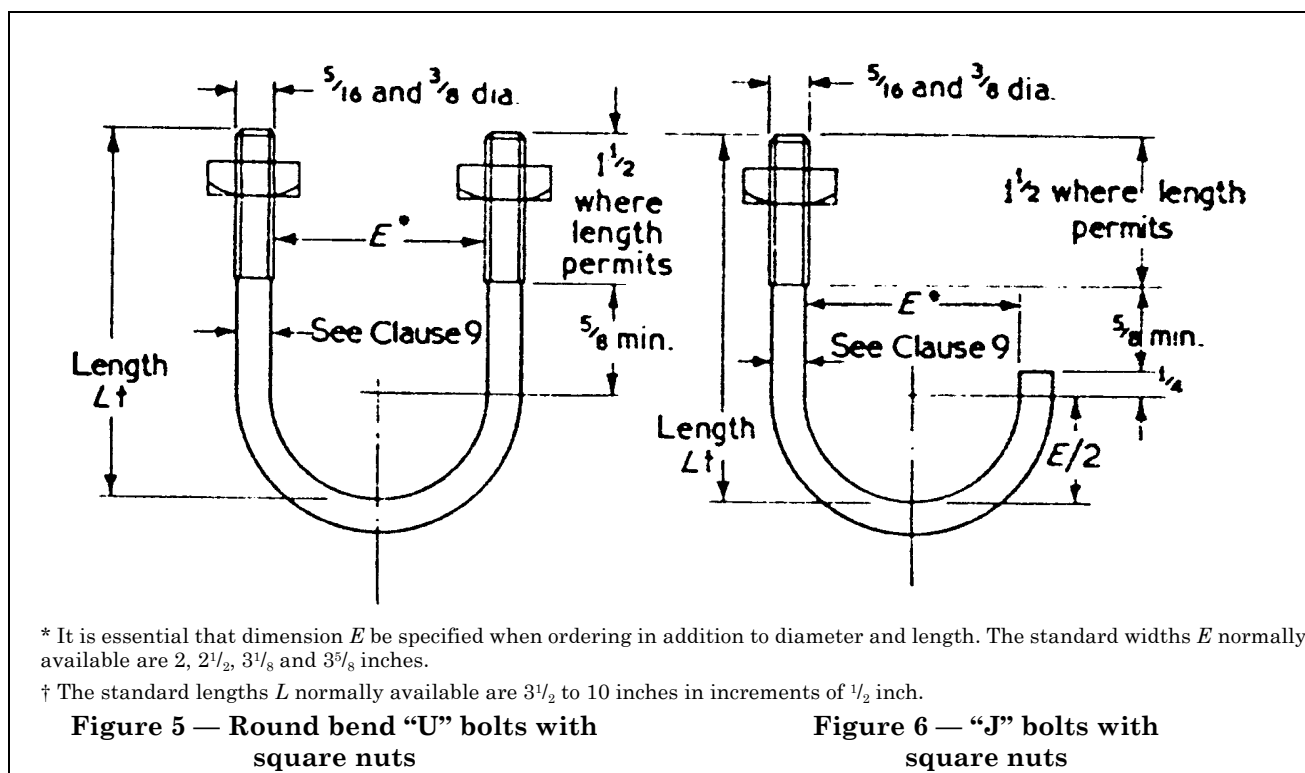


Figure 4 — Square bend "U" bolts with square nuts



Drive screws

12 General

- Steel drive screws shall have either round or mushroom heads and shall conform to Figure 7 and Figure 8 and Table 2.
- Aluminium drive screws shall have pan heads and shall conform to Figure 9 and Table 2.

13 Material

Special attention is directed to Clause 2, where a warning regarding the dangers of using dissimilar metals is given.

- Steel drive screws.* Steel drive screws shall be made from rod or wire having a tensile strength of not less than 28 tonf/in².
- Aluminium drive screws.* Aluminium drive screws shall be made from alloy NB6- $\frac{1}{2}$ H as specified in BS 1473¹⁰.

14 Information to be specified by the purchaser

- Description, BS number
- Material and finish
- Diameter and length.

¹⁰ BS 1473, "Wrought aluminium and aluminium alloys. Rivet, bolt and screw stock for forging".

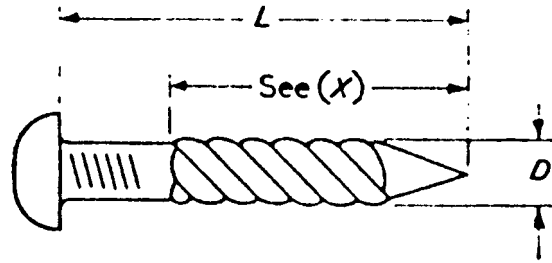


Figure 7 — Round head drive screws

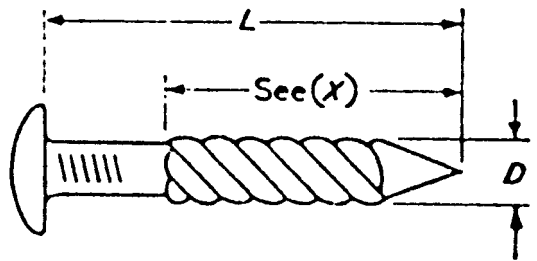


Figure 8 — Mushroom head drive screws

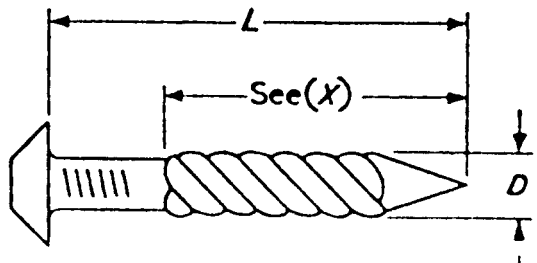


Figure 9 — Pan head drive screws

(X). On lengths up to 4 inches long, the length of thread shall be a minimum of $\frac{2}{3}L$, and on drive screws over 4 inches long the length of thread shall be 3 inches.

Table 2 — Drive screws

Nominal diameter <i>D</i>	Length <i>L</i> (inches)									
	Screw gauge									
14 (0.248 in)	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	—	—	—
16 (0.276 in)	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6
18 (0.304 in)	—	—	—	3	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6
20 (0.332 in)	—	—	—	—	3 $\frac{1}{2}$	4	4 $\frac{1}{2}$	5	5 $\frac{1}{2}$	6

Washers

15 General

Washers are made in several different patterns and shall conform to the dimensions specified in Figure 10 to Figure 14 and Table 3 to Table 5:

- a) Diamond curved washers (Figure 10), Round flat washers (Figure 12) and Round curved washers (Figure 13) are available in steel, aluminium and non-metallic materials.
- b) Diamond cranked washers (Figure 11) are normally available in aluminium.
- c) Conical washers (Figure 14) are only available in lead.
- d) *Plastics washers and caps*. Other types of washers, not shown in this standard are also widely used. These washers may be of shaped plastics and may incorporate a nut within the washer. They may also have a separate cap to screen and protect the nut, screw thread or head.

16 Material

Special attention is directed to Clause 2, where a warning regarding the dangers of using dissimilar metals is given.

- a) *Steel washers*. Steel washers shall be made from material of good commercial quality.
- b) *Aluminium washers*. Aluminium washers shall be made from one of the following materials:
 - HG9-WD as specified in BS 1475¹¹⁾
 - HE30-WP as specified in BS 1476¹²⁾
 - or NS6-1/4H as specified in BS 1470¹³⁾.
- c) *Felt or fibre washers*. Washers, such as felt or fibre, shall be suitably impregnated.
- d) *Plastics washers and caps*. Plastics washers and caps shall be made from a material suitable for external use.

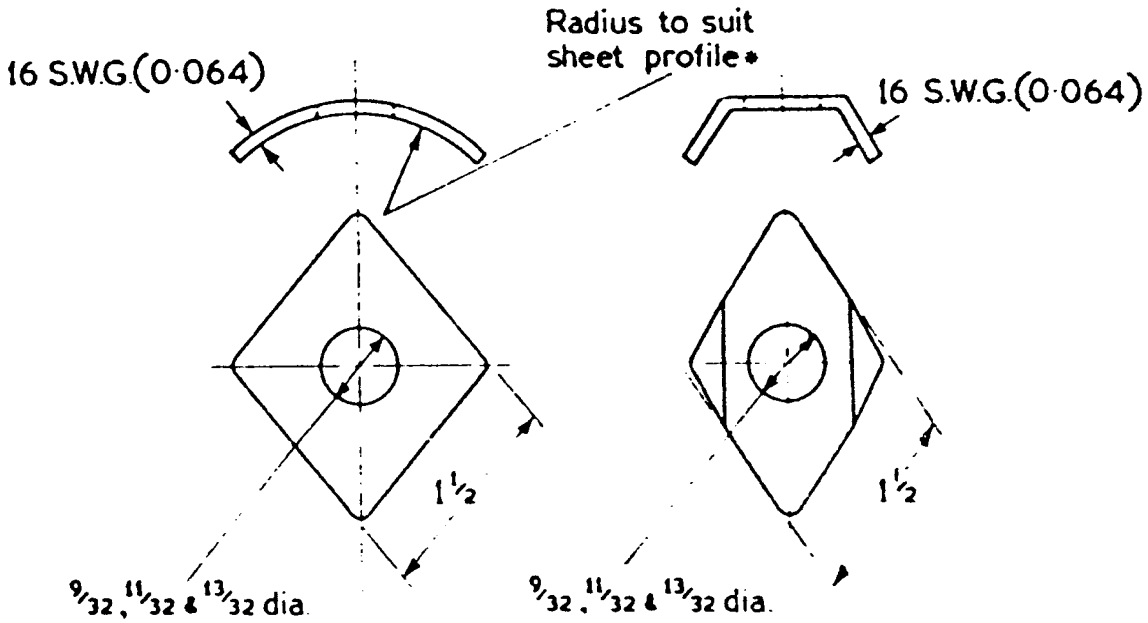
17 Information to be specified by the purchaser

- a) Description, BS number
- b) Material and finish
- c) Diameter
- d) Any additional information specified on the appropriate figure.

¹¹⁾ BS 1475, "Wrought aluminium and aluminium alloys. Wire".

¹²⁾ BS 1476, "Wrought aluminium and aluminium alloys. Bars, rods and sections".

¹³⁾ BS 1470, "Wrought aluminium and aluminium alloys. Sheet and strip".



* Additional information from purchaser

Figure 10 — Diamond curved washers

Figure 11 — Diamond cranked washers

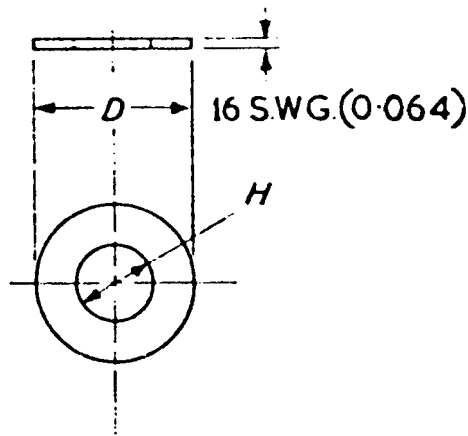
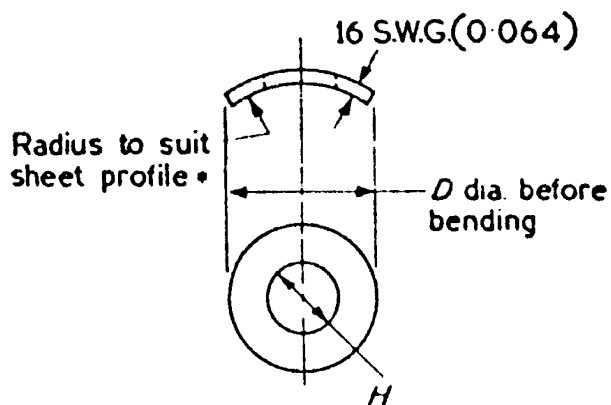


Figure 12 — Round flat washers

Table 3 — Round flat washers

Size of hole <i>H</i> nominal	Outside diameter <i>D</i>
in	in
7/32	5/8
9/32	3/4
11/32	7/8
13/32	1



* Additional information from purchaser
Figure 13 — Round curved washers

Table 4 — Round curved washers

Size of hole H nominal	Outside diameter D
in	in
$\frac{9}{32}$	$\frac{3}{4}$
$\frac{11}{32}$	$\frac{7}{8}$
$\frac{13}{32}$	1

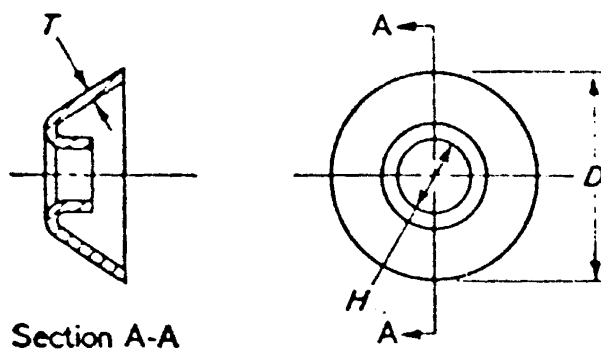


Figure 14 — Lead sleeve conical washers

Table 5 — Lead sleeve conical washers

Size of hole H nominal	Outside diameter D	Thickness T nominal
in	in	SWG
$\frac{1}{4}$	1	^a
$\frac{5}{16}$	$1\frac{1}{16}$	16, 14
$\frac{3}{8}$	$1\frac{1}{16}$	

^a 16 SWG = 4 lb Sheet Lead
 14 SWG = 5 lb Sheet Lead

Self-tapping screws

18 General

Self-tapping screws for the fixing of sheet, roof and wall coverings are available in the following types:

- Hexagon head type "Z" with sealing ring for fixing sheet to purlins. These screws shall conform to the dimensions in Table 6 (Figure 15).
- Hexagon head type "A" with sealing ring for fastening sheet to sheet. These screws shall conform to the dimensions in Figure 16.
- 12-point plastics head type "Z" cone pointed with sealing ring for either fixing sheet to purlins or sheet to sheet. These screws shall conform to the dimensions in Figure 17.
- Round and countersunk head self-tapping screws shall conform to the requirements in Figure 18 and Figure 19.

NOTE Type "Z" are also sometimes used in conjunction with spring steel nuts, to fasten sheet to sheet.

19 Material

Special attention is directed to Clause 2, where a warning regarding the dangers of using dissimilar metals is given.

Self-tapping screws shall be made from low-carbon steel suitably heat-treated.

NOTE By agreement between manufacturer and purchaser, other materials may be used.

20 Information to be specified by the purchaser

- Description, BS number
- Material and finish
- Diameter and length
- Colour of plastics head, where applicable.

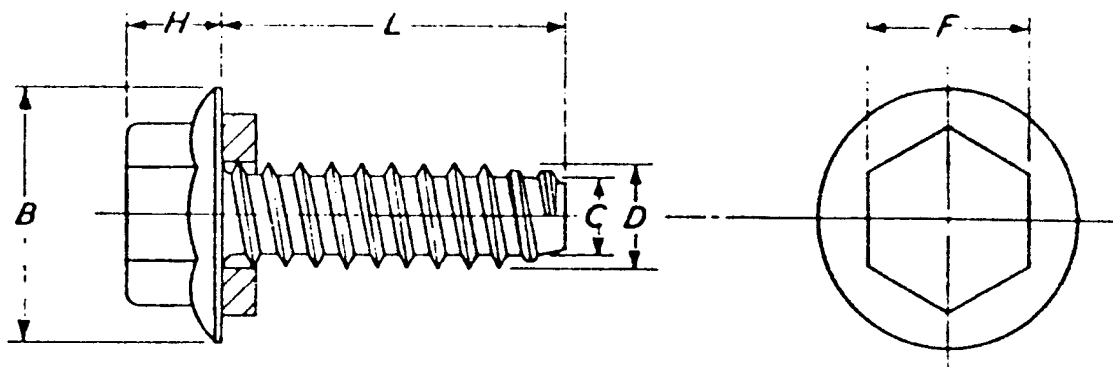
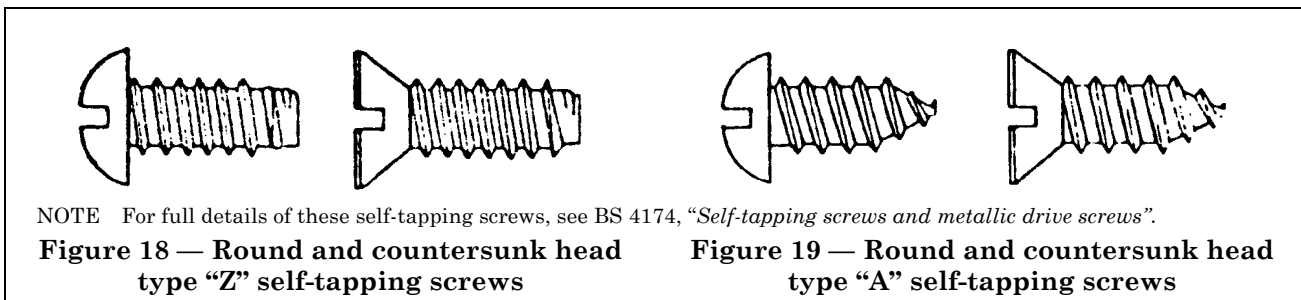
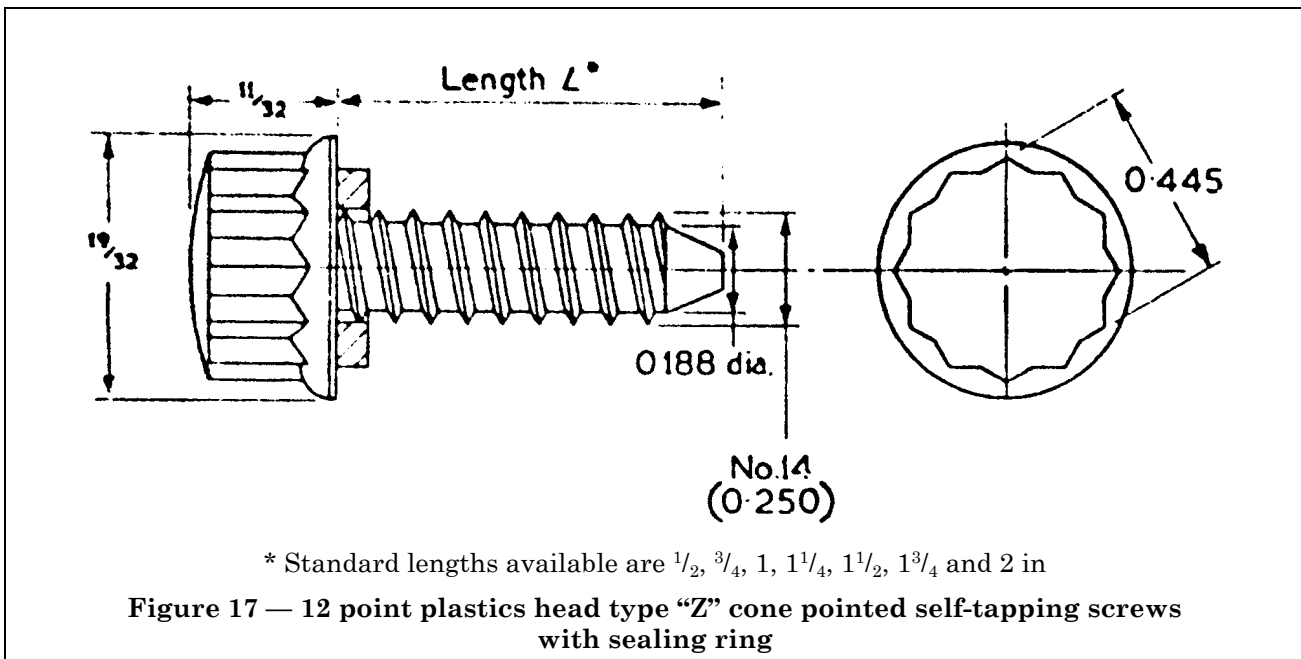
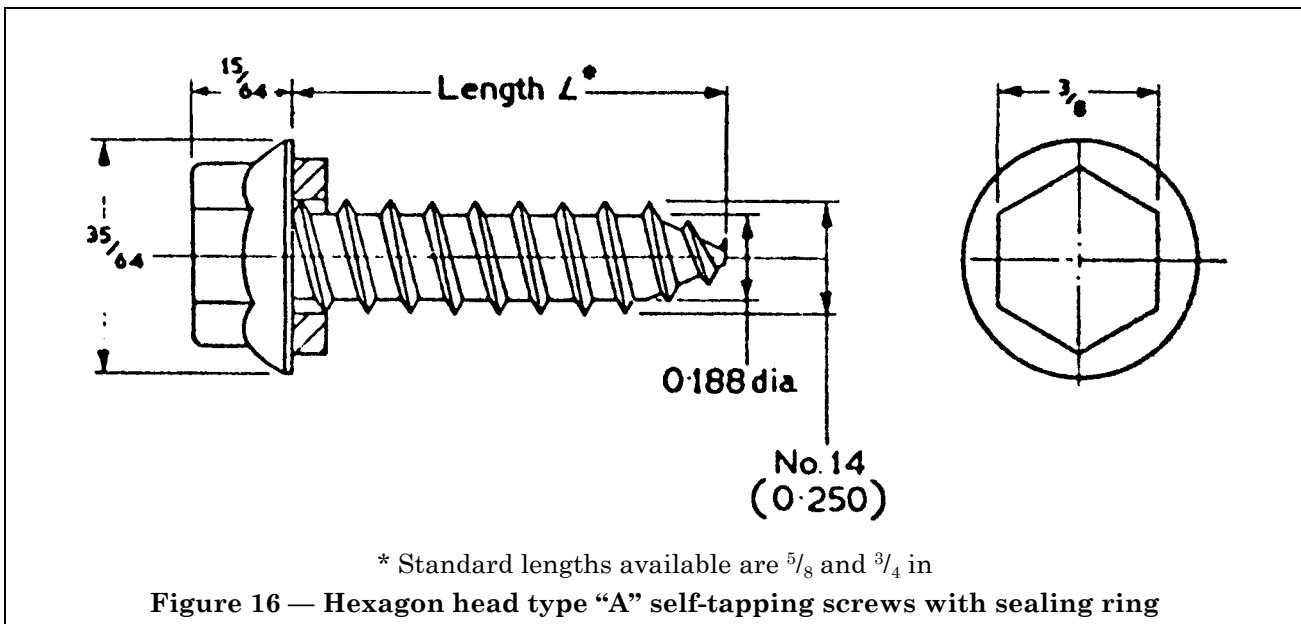


Figure 15 — Hexagon head type "Z" self-tapping screws with sealing ring

Table 6 — Hexagon head type "Z" self-tapping screws

Nominal diameter D	Diameter of head B nominal	Height of head H nominal	Distance across flats F nominal	Core diameter C nominal	Length L
Screw gauge	in	in	in	in	in
14 (0.250 in)	$\frac{35}{64}$	$\frac{15}{64}$	$\frac{3}{8}$	0.188	$\frac{5}{8}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, 2, $2\frac{1}{2}$
$\frac{5}{16}$ in	$\frac{21}{32}$	$\frac{1}{4}$	$\frac{3}{8}$		0.240



Roofing bolts, nuts and clips

21 General

- a) Roofing bolts shall have mushroom heads and shall conform to the requirements of Clauses **23** and **24**, Figure 20 and Figure 21 and Table 7 and Table 8. They shall be supplied complete with square or hexagon nuts or roofing clips. Square nuts shall be supplied unless otherwise specified.
- b) Roofing clips are supplied with tapped holes to suit the bolts or alternatively with clearance holes in which case a nut is also required. The roofing clips shall conform to the dimensions of Figure 22.

NOTE Roofing bolts and clips are used as an alternative to hook bolts and types are available for channel, R.S.J. or tubular sections (Figure 21 illustrates type used for angle purlins).

22 Material

Special attention is directed to Clause **2**, where a warning regarding the dangers of using dissimilar metals is given.

- a) *Steel bolts, nuts and clips.*
- i) Steel bolts shall be made from rod or wire having a tensile strength of not less than 28 tonf/in².
 - ii) Steel nuts for roofing bolts shall be made from bar or strip having a tensile strength of not less than 28 tonf/in².
 - iii) Steel roofing clips shall be made from strip having a tensile strength of not less than 28 tonf/in².
- b) *Aluminium bolts, nuts and clips.*
- i) Aluminium bolts shall be made from alloy NB6-1/2H as specified in BS 1473¹⁴⁾.
 - ii) Aluminium nuts shall be made from one of the following alloys:
 - HG9-WD as specified in BS 1475¹⁵⁾
 - HE30-WP as specified in BS 1476¹⁶⁾
 or NS6-1/4H as specified in BS 1470¹⁷⁾
 - iii) Aluminium roofing clips shall be made from one of the following alloys:
 - HS30-WP as specified in BS 1470¹⁷⁾
 - HE20-WP as specified in BS 1476¹⁶⁾
 - HE30-WP as specified in BS 1476¹⁶⁾
 or NS4-1/2H as specified in BS 1470¹⁷⁾.

23 Shank diameter

The diameter of the unthreaded portion of the shank (see note under Table 7) is closely associated with the method of manufacture; it will be near the maximum major diameter of the thread for cut thread bolts and near to minimum effective diameter for rolled threads. The unthreaded portions of the shank on rolled thread roofing bolts will therefore be approximately $\frac{3}{64}$ inch smaller than the nominal thread diameter.

24 Screw threads

- a) *General.* Screw threads on bolts and nuts shall be Unified coarse (UNC) in accordance with BS 1580¹⁸⁾ or British Standard Whitworth (B.S.W.) in accordance with BS 84¹⁹⁾.
- b) *Roofing bolts.*
- i) Roofing bolts may be supplied with either rolled or cut threads.

¹⁴⁾ BS 1473, "Wrought aluminium and aluminium alloys. Rivet, bolt and screw stock for forging".

¹⁵⁾ BS 1475, "Wrought aluminium and aluminium alloys. Wire".

¹⁶⁾ BS 1476, "Wrought aluminium and aluminium alloys. Bars, rods and sections".

¹⁷⁾ BS 1470, "Wrought aluminium and aluminium alloys. Sheet and strip".

¹⁸⁾ BS 1580, "Unified screw threads".

¹⁹⁾ BS 84, "Parallel screw threads of Whitworth form".

- ii) Screw threads on bolts shall conform to the “Class 2A” limits and tolerances for UNC threads or the “Medium class” limits and tolerances for B.S.W. threads.
- c) *Nuts for roofing bolts*. Screw threads in nuts shall conform to the “Class 1B” limits and tolerances for UNC threads or the “Normal Class” limits and tolerances for B.S.W. threads.

25 Information to be specified by the purchaser

- Description, BS number
- Material and finish
- Diameter, thread and length
- For roofing clips, whether tapped or with clearance hole complete with nuts.

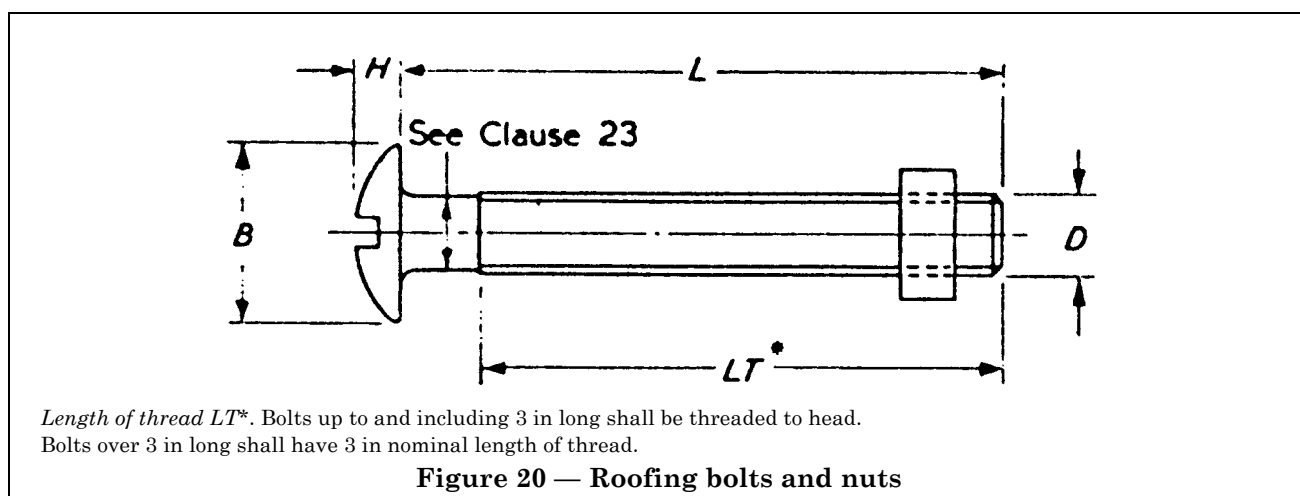


Table 7 — Roofing bolts and nuts

Nominal diameter D	B nominal	H nominal	Length L
in	in	in	in
$\frac{1}{4}$	$\frac{9}{16}$	$\frac{9}{84}$	$\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, 1, $1\frac{1}{4}$, $1\frac{1}{2}$, $1\frac{3}{4}$, 2 and in increments of $\frac{1}{2}$ in up to 12 in when required
$\frac{5}{16}$	$\frac{11}{16}$	$\frac{3}{16}$	
$\frac{3}{8}$	$\frac{13}{16}$	$\frac{7}{32}$	

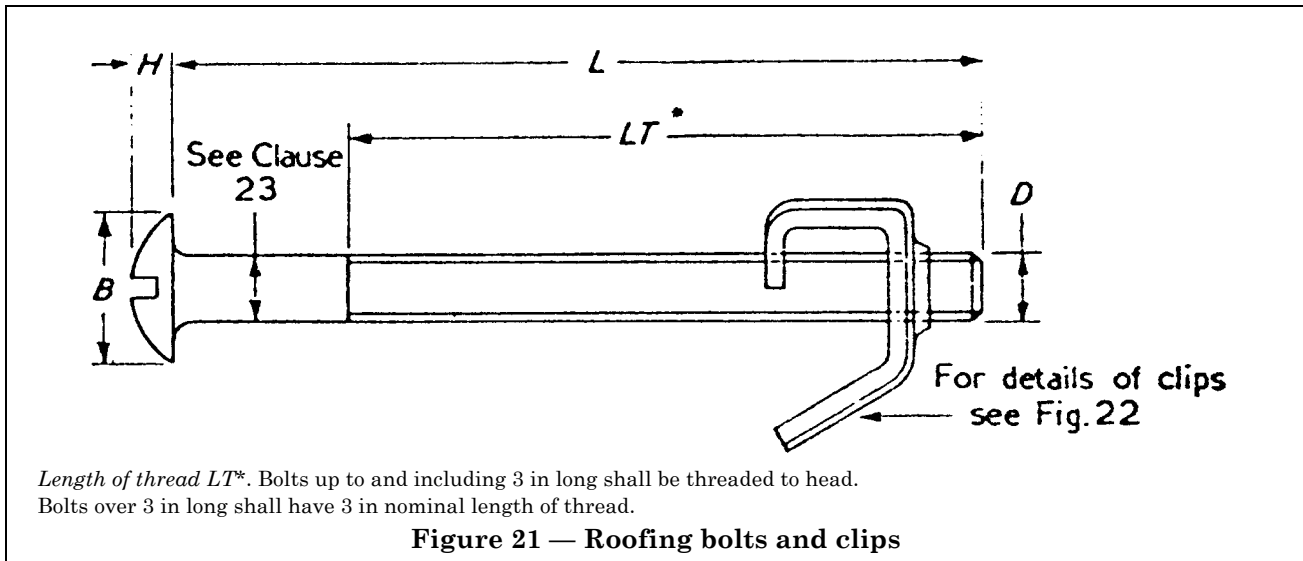


Table 8 — Roofing bolts and clips

Nominal diameter D	B nominal	H nominal	Length L
in	in	in	in
$\frac{1}{4}$	$\frac{9}{16}$	$\frac{9}{64}$	2½ to 12 in increments of ½ in
$\frac{5}{16}$	$\frac{11}{16}$	$\frac{3}{16}$	

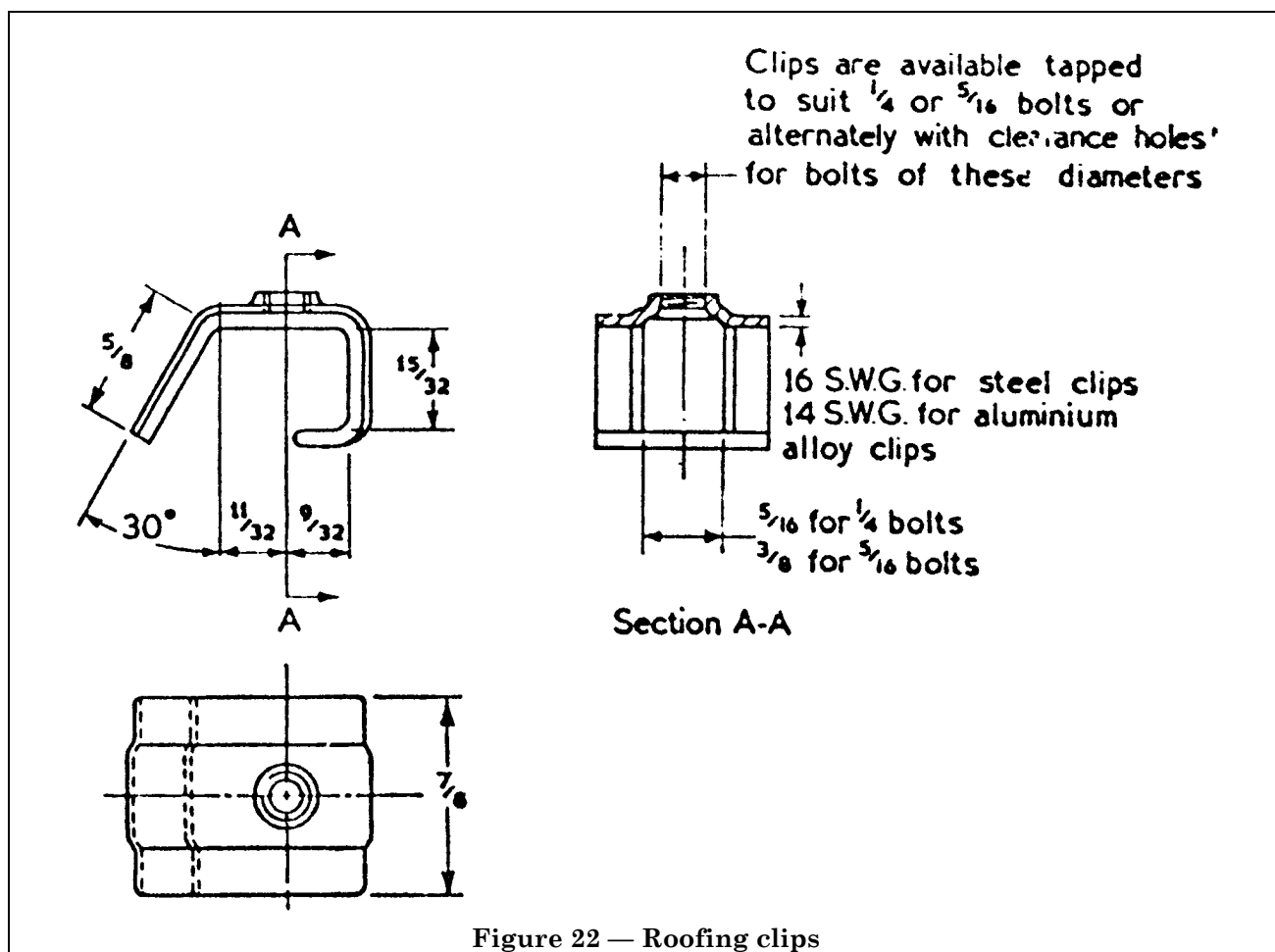


Figure 22 — Roofing clips

Roofing screws

26 General

Roofing screws shall have cone heads and shall conform to Figure 23 and Table 9.

27 Material

Special attention is directed to Clause 2 where a warning regarding the dangers of using dissimilar metals is given.

- Steel roofing screws.* Steel roofing screws shall be made from rod or wire having a tensile strength of not less than 28 tonf/in².
- Aluminium roofing screws.* Aluminium roofing screws shall be made from alloy NB6-1/2H as specified in BS 1473²⁰⁾.

28 Information to be specified by the purchaser

- Description, BS number
- Material and finish
- Diameter and length

²⁰⁾ BS 1473, "Wrought aluminium and aluminium alloys. Rivet, bolt and screw stock for forging".

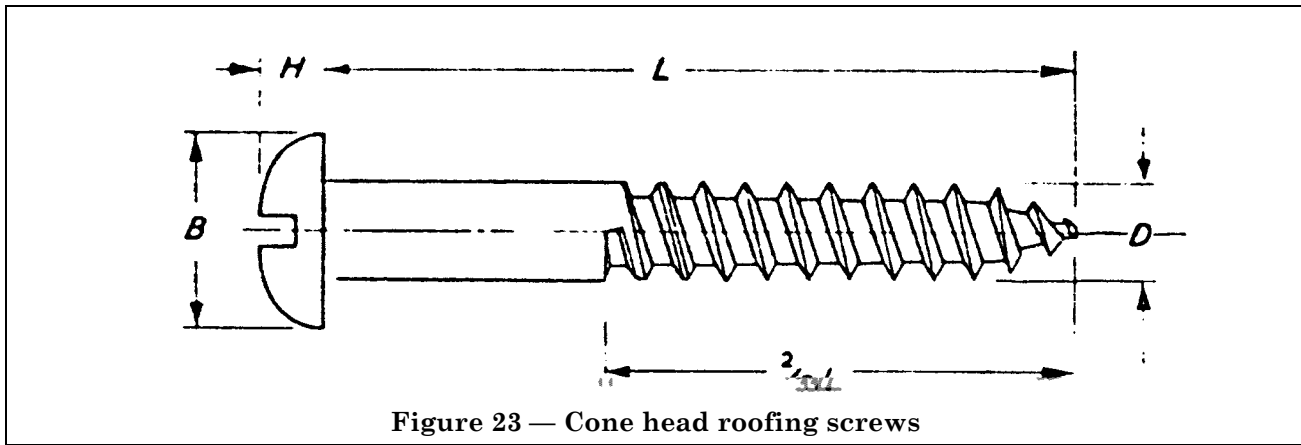


Figure 23 — Cone head roofing screws

Table 9 — Cone head roofing screws

Nominal diameter D	B nominal	H nominal	Length L
Screw gauge	in	in	in
12 (0.220 in)	$\frac{27}{84}$	$\frac{5}{32}$	$1\frac{1}{2}$, $1\frac{3}{4}$, 2, $2\frac{1}{2}$
14 (0.248 in)	$\frac{15}{32}$	$\frac{11}{84}$	$1\frac{1}{2}$, $1\frac{3}{4}$, 2, $2\frac{1}{2}$, 3, 4

Sheeting clips

29 General

- Owing to the wide range of sheeting clips which are in use it is impractical to lay down dimensions for standard shapes and sizes. Two of the more popular types are illustrated in Figure 24 and Figure 25.
- Except in the case of proved proprietary methods, sheeting clips should not be relied upon as the principal means of fixing if other methods are possible. Clips are manufactured to individual requirements and customers should specify all necessary dimensions.
- It is recommended that the minimum thickness of sheeting clips should be $\frac{1}{8}$ inch for steel clips and $\frac{3}{16}$ inch for aluminium clips.

30 Material

Special attention is directed to Clause 2, where a warning regarding the dangers of using dissimilar metals is given.

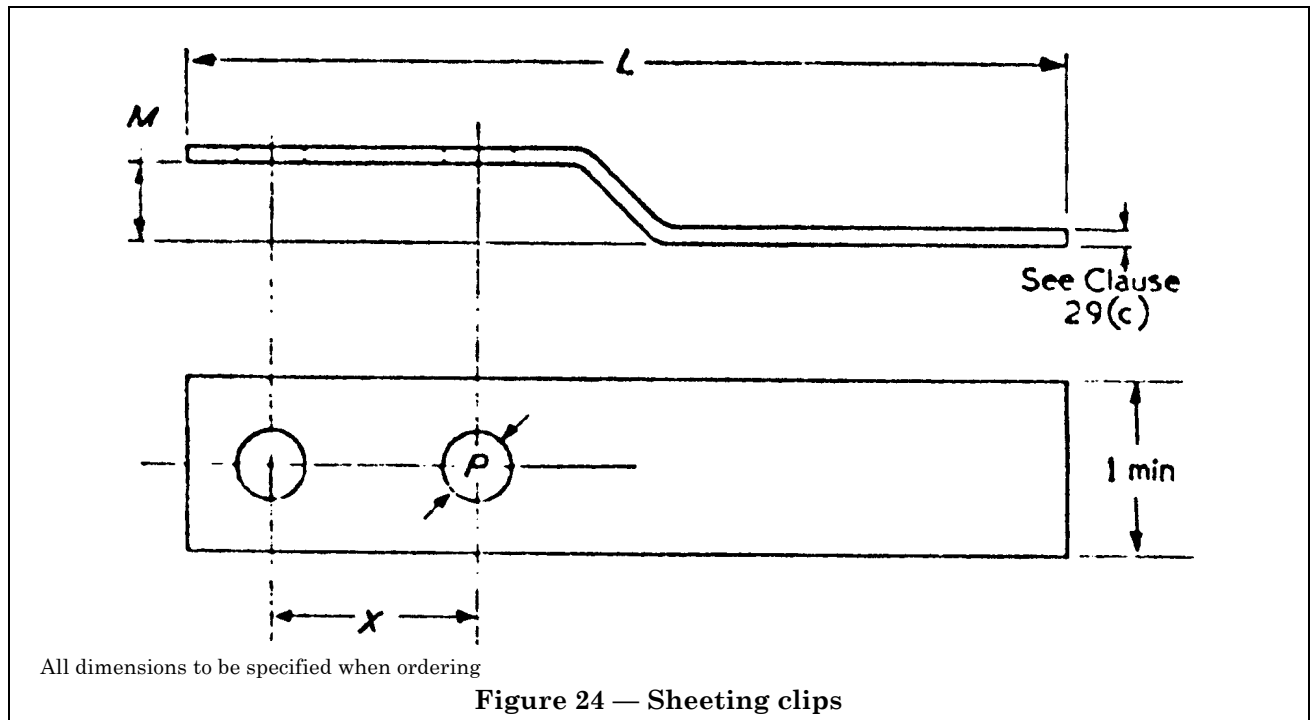
- Steel sheeting clips.* Steel sheeting clips shall be made from strip having a tensile strength of not less than 28 tonf/in².
- Aluminium sheeting clips.* Aluminium sheeting clips shall be made from one of the following alloys:
 - HS30-WP as specified in BS 1470²¹⁾
 - HE20-WP as specified in BS 1476²²⁾
 - or HE30-WP as specified in BS 1476²²⁾.

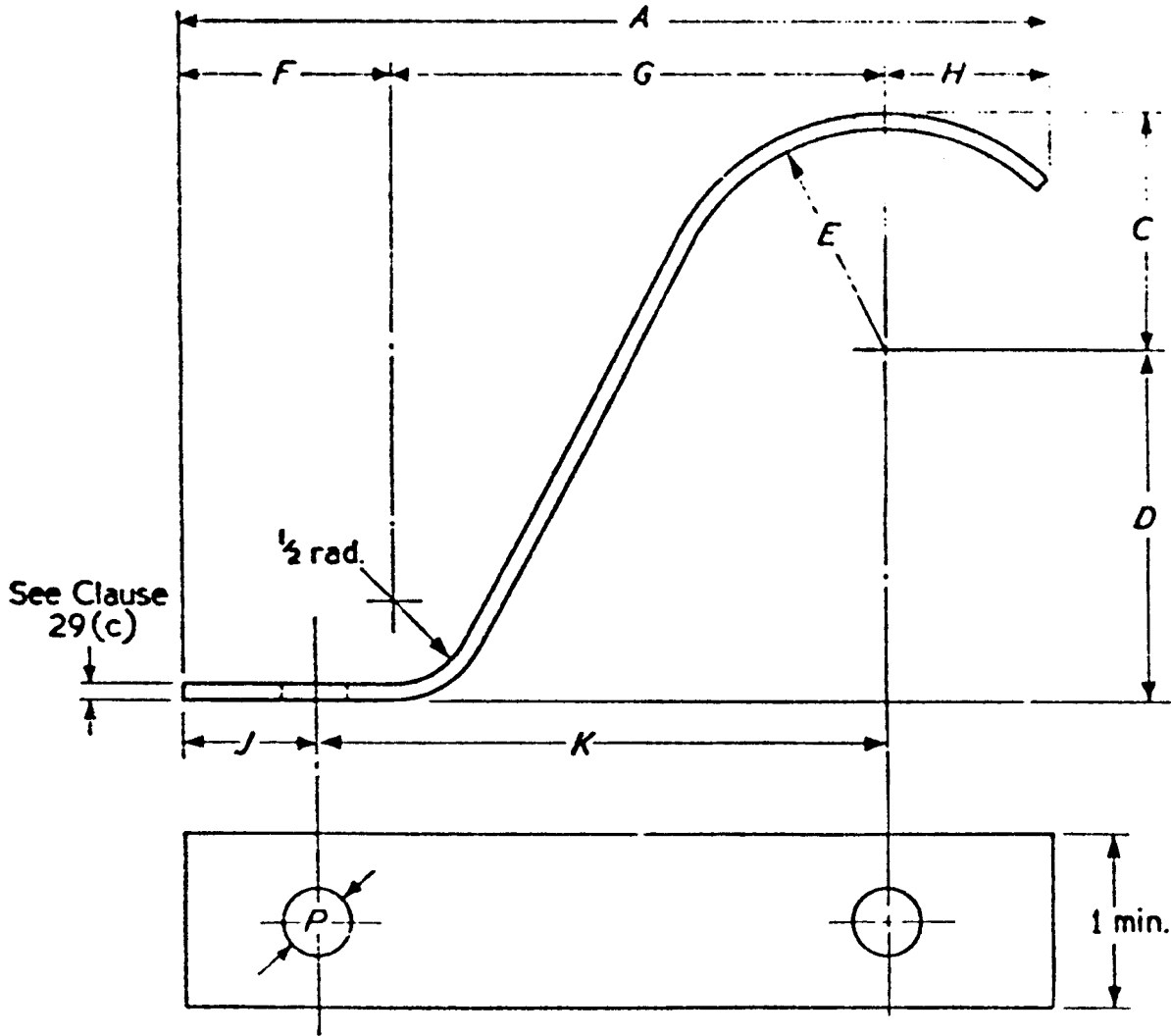
²¹⁾ BS 1470, "Wrought aluminium and aluminium alloys. Sheet and strip".

²²⁾ BS 1476, "Wrought aluminium and aluminium alloys. Bars, rods and sections".

31 Information to be specified by the purchaser

- a) Description, BS number
- b) Material and finish
- c) All dimensions





All dimensions to be specified when ordering

Figure 25 — Sheeting clips

Appendix A Metric equivalents

in	mm	in	mm
$\frac{1}{8}$	3.17	$\frac{11}{16}$	17.46
$\frac{9}{64}$	3.57	$\frac{3}{4}$	19.05
$\frac{5}{32}$	3.97	$\frac{13}{16}$	20.64
$\frac{11}{64}$	4.37	$\frac{7}{8}$	22.23
$\frac{3}{16}$	4.76	1	25.40
$\frac{13}{64}$	5.16	$\frac{11}{16}$	26.99
$\frac{7}{32}$	5.56	$\frac{11}{8}$	28.57
$\frac{1}{4}$	6.35	$\frac{11}{4}$	31.75
$\frac{17}{64}$	6.75	$\frac{11}{2}$	38.10
$\frac{9}{32}$	7.14	$\frac{13}{4}$	44.45
$\frac{5}{16}$	7.94	2	50.80
$\frac{21}{64}$	8.33	3	76.20
$\frac{11}{32}$	8.73	4	101.60
$\frac{3}{8}$	9.53	5	127.00
$\frac{13}{32}$	10.32	6	152.40
$\frac{17}{64}$	10.72	7	177.80
$\frac{7}{16}$	11.11	8	203.20
$\frac{5}{32}$	11.91	9	228.60
$\frac{1}{2}$	12.70	10	254.00
$\frac{9}{16}$	14.29	11	279.40
$\frac{5}{8}$	15.88	12	304.80

Standard Wire Gauge (SWG)	in	mm
16	0.064	1.63
14	0.080	2.03

Screw gauge	in	mm
14	0.248	6.30
16	0.276	7.01
18	0.304	7.72
20	0.332	8.43

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