British Standard

BRITISH STANDARD

BS 4929-2: 1973

Specification for

Steel hexagon prevailing-torque type nuts —

Part 2: Unified (inch) series

Co-operating organizations

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

Associated Offices Technical Committee
Association of Consulting Engineers
Association of Hydraulic Equipment Manufacturers Ltd.*
Association of Mining Electrical and Mechanical Engineers
British Compressed Air Society
British Electrical and Allied Manufacturers' Association
British Gear Manufacturers' Association
British Internal Combustion Engine Manufacturers' Association
British Mechanical Engineering Confederation
British Pump Manufacturers' Association
British Steel Industry*
Crown Agents for Overseas Governments and Administrations
Department of Employment
Department of the Environment*
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Department of Trade and Industry National Engineering Laboratory*
Electricity Council the Central Electricity Generating Board and the Area Boards in England and Wales
Engineering Equipment Users' Association
Gas Council*
Institution of Civil Engineers
Institution of Gas Engineers
Institution of Heating and Ventilating Engineers
Institution of Mechanical Engineers
Institution of Mechanical Engineers (Automobile Division)
Institution of Plant Engineers
Institution of Production Engineers*
London Transport Executive
Machine Tool Trades Association*
Ministry of Defence
Ministry of Defence, Army Department
National Coal Board*
National Physical Laboratory (Department of Trade and Industry)
Process Plant Association
Railway Industry Association of Great Britain
Royal Institute of British Architects
Telecommunications Engineering Manufacturing 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 British Standard:

Black Bolt and Nut Association of Great Britain
British Bolt. Nut. Screw and Rivet Federation
British Constructional Steelwork Association
British Railways Board
Constructional Steel Research and Development Organisation
Fasteners and Turned Parts Institute
Institute of iron and Steel Wire Manufacturers
Ministry of Defence, Navy Department
Post Office
Power Generation Association
Precision Bolt and Nut Institute
Rolled Thread Screw Association
Scientific Instrument Manufacturers Association of Great Britain
Society of Motor Manufacturers and Traders Ltd.
Washer Manufacturers Association of Great Britain
Individual Manufacturers

This British Standard, having been approved by the Mechanical Engineering Industry Standards Committee, was published under the authority of the Executive Board on
15 June 1973

The following BSI references relate to the work on this standard:
Committee reference MEE/60
MEE/60/12
Draft for comment 69/4811

ISBN 0 580 07651 2

Amendments issued since publication

Amd. No.	Date of issue	Comments

Contents

Foreword

This part of this British Standard has been prepared under the authority of the Mechanical Engineering Industry Standards Committee as a result of requests received from industry for the provision of a new standard covering steel hexagon prevailing-torque type nuts.

This type of product has been standardized in the USA over a period of many years and the USA has submitted a draft ISO proposal, covering both metric and inch series products which has been adopted by ISO/TC2, "Bolts, nuts and accessories", as the basis for an ISO Recommendation. Where possible the provisions of the following ISO Recommendations and ISO Standard have also been incorporated in the text of this standard:

ISO Recommendation R 898/I, *"Mechanical properties of fasteners. Part I. Bolts, screws and studs"*.

ISO Recommendation R 898/II, *"Mechanical properties of fasteners. Part II. Nuts with specified proof load valves"*.

ISO Standard R 2359, *"Prevailing-torque type steel hexagon, locknuts. Dimensions. Inch units"*.

This standard purposely relates to inch series products only, since it was felt that confusion might arise if metric series products were included in a composite document having similar performance, functional and material requirements, but differing with regard to dimensional and identification characteristics. Thus, not withstanding the amount of duplication involved, it was considered advisable to prepare similar but separate documents for the metric and inch series products. The dimensional and identification requirements in this document are based on current ISO inch (Unified) practice.

NOTE 1 For BSI policy statement on screw threads see Appendix A.

NOTE 2 One property class 1 (equivalent to Class 8 from ISO/R 898/II) has been included in this standard.

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 8, 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

1.1 This part of this British Standard specifies the general dimensions and tolerances of prevailing-torque type nuts with ISO inch (Unified) threads in diameters from No. 8 (0.164 in) to 1½ in inclusive.

1.2 Mechanical properties and performance requirements are given only in respect of steel nuts, with or without non-metallic inserts such as nylon, which are not to be used for special applications such as those requiring weldability, corrosion resistance or the ability to withstand temperatures above 300 °C (120 °C for nuts with non-metallic inserts) or below – 50 °C.

1.3 Two nut heights are specified, designated "normal" and "high" respectively. The particular design used by the nut manufacturer will determine which of these height categories is applicable.

1.4 Unless otherwise specified by the purchaser either normal or high nuts, with or without non-metallic inserts, may be supplied.

NOTE The titles of the Publications referred to in this standard are listed on the inside back cover.

2 Definition

For the purposes of this part of this British Standard, the following definition applies:

2.1 prevailing-torque type nut

a nut which is frictionally resistant to rotation due to a self-contained prevailing-torque feature, and not because of a compressive load developed at first assembly against the bearing surface of the nut. The term prevailing-torque is not intended to imply an indefinite permanence of fixity

3 Property class designation system

3.1 This standard specifies one property class 1 as indicated below:

Property class	**Proof load stress** (Sp) **lbf/in²**
1	120 000

NOTE Property class designation 1, which is equivalent to strength grade 8 given in ISO/R 898/II, has been utilized in order to help differentiate between inch series and metric series products.

4 Material and manufacture of steel nuts

4.1 Material. Nuts shall be made of carbon or alloy steel of a grade adequate for the nut to meet the mechanical performance requirements of this standard. The prevailing-torque element of insert design nuts may be of a material other than steel.

4.2 Heat treatment. Class 1 nuts may be heat treated as necessary.

4.3 Finish. Nuts shall be finished plain (bare metal) or with a protective coating (electro-deposited plating or chemical conversion coating) as specified on the order. Plating shall be in accordance with BS 3382.

All nuts shall be provided with a supplementary lubricant if necessary to meet the stated performance requirements without galling and shall be clean and dry to touch.

5 Dimensional requirements

5.1 Basic dimensions. Nuts shall be in accordance with the dimensions given in Table 2. The portion of the nut containing the prevailing-torque feature may have a special contour within the maximum permitted width across flats and thickness. The minimum width across flats shall not apply at a depressed portion of the nut at the prevailing-torque feature.

5.2 Thread form, series and tolerances. The threads of the nuts shall be to the ISO Unified (inch) coarse or fine pitch series in accordance with BS 1580.

The tolerance class shall be "2B". The portion of the nut containing the prevailing-torque element need not be in accordance with this requirement.

5.3 Thread start. The nuts shall assemble a minimum of one full turn by hand on a basic GO thread plug gauge. The plug gauge shall be chamfered at 45° to at least the full depth of the thread.

5.4 Defects. The nuts shall be free from burrs, loose scale, sharp edges and all other defects that might adversely affect their service.

6 Mechanical requirements

6.1 Proof load. The nuts shall withstand the proof stresses specified in Table 3 and Table 4 when tested as specified in **8.1**.

6.2 Hardness. The nuts shall have a hardness not in excess of the hardness specified in Table 1 when tested as specified in **8.2**.

Table 1 — Mechanical properties of steel nuts

Property class	1
Proof load stress[a] (S_p), min.	lbf/in^2 120 000
Vickers hardness HV, max.	310
Rockwell hardness[b] HRC, max.	32.2
Brinell hardness[b] HB, max.	294.5

[a] The proof load is calculated by multiplying the proof load stress by the tensile stress area of the bolt.
[b] The conversion from Vickers hardness into Rockwell hardness and Brinell hardness has been taken from BS 860.

7 Performance requirements

7.1 Prevailing-torque. The prevailing-torque developed by the nuts during their first installation, or any subsequent installation or removal, shall not exceed the torque specified in Table 3 and Table 4 when tested as specified in **8.3**. In addition the maximum and minimum prevailing-torque developed by the nuts during their first and fifth removals shall not be less than the "highest" and "lowest" reading removal torques specified in Table 3 and Table 4 when tested as specified in **8.3**.

7.2 Definition. The prevailing-torque developed by a nut is the torque necessary to rotate the nut on its mating externally threaded component, with the torque being measured while the nut is in motion, and with no axial load in the mating component.

8 Test methods

8.1 Proof load test. The test sample nut shall be assembled on a test bolt (see **8.1.1**) or on a hardened mandrel (see **8.1.2**) with a minimum of three full threads projecting through the nut. For referee test purposes, the hardened mandrel shall be used. The maximum torque occurring during the assembly of the nut on the test bolts or mandrel shall be recorded. A tensile load equal to the specified proof load for the nut, as given in Table 3 and Table 4 shall be applied through the test bolt or mandrel against the nut bearing surface in an axial direction. The nut shall resist this load without thread stripping or rupture. The torque necessary to remove the nut from the test bolt or mandrel shall not exceed the maximum torque occurring during assembly.

8.1.1 *Test bolt.* The bolt used for proof load testing a nut shall have threads in accordance with class "2A" of BS 1580. The test bolt shall have a yield strength in excess of the specified proof load of the nut being tested.

8.1.2 *Hardened mandrel.* The hardened mandrel used for proof load testing a nut shall have threads in accordance with BS 1580, tolerance class "3A" except that the tolerance on the major diameter shall be the minimum with a tolerance of + 0.002 in. The mandrel shall be heat treated to a hardness of Rockwell C45 – 50 or Brinell HB 430-486.

8.2 Hardness test. The hardness of a sample nut shall be determined on a suitable surface. The preparation of the test specimen and the method of performing the test shall be in accordance with the following British Standards:

Vickers hardness	BS 427-1
Brinell hardness	BS 240-1
Rockwell hardness	BS 891-1

8.3 Prevailing-torque test. The prevailing-torque test shall be conducted at room temperature using a load measuring device (see **8.3.1**). A test bolt (see **8.3.2**) shall be inserted in the load measuring device a hardened washer (see **8.3.3**) placed on the bolt and the sample nut then assembled on the bolt. The nut shall be advanced on the bolt until a minimum of two full bolt threads protrude through the nut. At that time, the maximum torque occuring while the nut is being advanced through the next 360° of nut rotation shall be recorded. This torque shall not exceed the first installation prevailing-torque value as specified in Table 3 and Table 4.

Tightening shall be continued until the nut is seated against the hardened washer. The length of the test bolt should be such that seating of the nut shall occur when a length equivalent to four to seven thread pitches of the test bolt protrude through the top of the nut measured from the end of the bolt. The nut shall then be tightened until a tensile load equal to the clamp load, as specified in Table 3 and Table 4, is developed in the bolt. The hardened washer shall be prevented from turning during nut tightening. The nut shall then be backed off by the application of reverse torque until the tensile load in the bolt has been reduced to zero. The maximum and minimum torques occurring while the nut is being backed off throughout the next 360° of rotation shall be recorded. The maximum torque shall not be less than the first removal "highest reading" prevailing-torque value as specified in Table 3 and Table 4. The minimum torque shall not be less than the first removal "lowest reading" prevailing-torque values as specified in Table 3 and Table 4. The nuts shall then be backed off until the prevailing-torque element is disengaged from the bolt thread. The nut shall be reassembled and removed four more times. On each assembly, the nut shall be advanced sufficiently to allow a length equivalent to four to seven pitches to protrude through the nut. This position of the test need not be conducted in the load cell; however, regardless of method used, the test washer shall not be removed. At no time during these four additional installations and removals should the torque exceed the maximum first installation prevailing-torque value as specified in Table 3 and Table 4. During the fifth removal, the maximum and minimum torques occurring while the nut is being backed off throughout the first 360° of rotation shall be recorded. The maximum torque shall not be less than the fifth removal "highest reading" prevailing-torque value as specified in Table 3 and Table 4 and the minimum torque shall not be less than the fifth removal "lowest reading" prevailing-torque value as specified in Table 3 and Table 4. Sufficient time shall elapse between torquing cycles to prevent overheating of the test assembly.

Torque measuring devices shall be accurate within ± 3 % of the maximum of the specified torque range of the device.

Driving speed shall not exceed 30 rev/min and shall be continuous and uniform.

8.3.1 *Load measuring device*. The load measuring device used in the prevailing-torque test shall be an instrument capable of measuring the actual tension induced in the test bolt as the nut is tightened. The device shall be accurate within ± 5 % of the test clamp load being used. The diameter and tolerance of the bolt clearance hole in the backing plate shall be the same as for the test washer.

8.3.2 *Test boil*. The test bolt used in the prevailing-torque test shall have a zinc phosphate and oil finish. The bolt shall have threads in accordance with class "2A" of BS 1580. Threads on all bolts l in diameter and smaller shall bc produced by rolling. Bolt length shall be such that a minimum length of four to seven pitches as measured from the end of the bolt will protrude through the nut when the nut is seated against the test washer. The thread length shall be such that a minimum of two full threads are within the grip after the nut is seated.

The thread surface shall be free of scale, iron oxide, burrs or other contamination that might affect an accurate determination of the prevailing-torque developed by the nut.

The bolt shall have an ultimate tensile strength not less than the specified proof load of the nuts to be tested.

A new bolt shall be used for testing each nut.

8.3.3 *Test washer*. Test washers shall be unplated and shall be in accordance with dimensional, metallurgical and mechanical requirements given in Table 5. Alternative configurations are acceptable provided they meet the minimum requirements of Table 5.

9 Marking and identification

9.1 Nuts size ¼ in and above may carry some form of manufacturer's identification (trade) marking and shall be appropriately marked for strength class designation by one of the following alternative methods[1)]:

1) The property class symbol l should be indented into one of the faces of the nut. In the case of nuts turned from hexagon bar the symbol may be indented singularly, or rolled continuously into the side of one of the hexagon flats.

2) Three equally spaced identical configurations (dot, line letter or other character) 120° apart on the chamfered surface on the top of the nut. Raised marks shall not project beyond the specified maximum height or width of the nut as given in Table 2.

3) A circumferential notch (60° to 90° included angle) in the cross corners of the hexagon flats.

[1)] Other forms of marking may be used subject to agreement between the manufacturer and the purchaser.

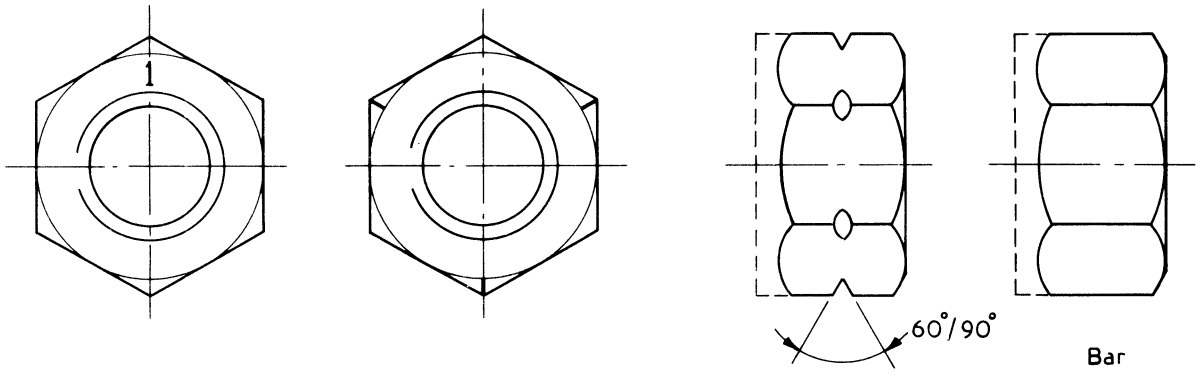


Figure 1 — Marking for strength class designation

10 Inspection

The manufacturer shall take the necessary steps to ensure that the requirements of this standard are fulfilled, but if in addition, the purchaser desires the manufacturer to certify or demonstrate that the nuts are in accordance with this standard, the details and costs of any further inspection shall be the subject of agreement between the purchaser and the manufacturer.

11 Complete designation for the purpose of an enquiry or order

11.1 Information to be provided. When designating prevailing-torque type nuts for the purpose of an enquiry or order, the following information shall be given:

1) General product description, i.e. thickness of nut (normal or high), type of insert and nut material if other than steel.

2) Nominal size or thread diameter, threads per in and thread series designation, e.g. "¼ – 20 UNC".

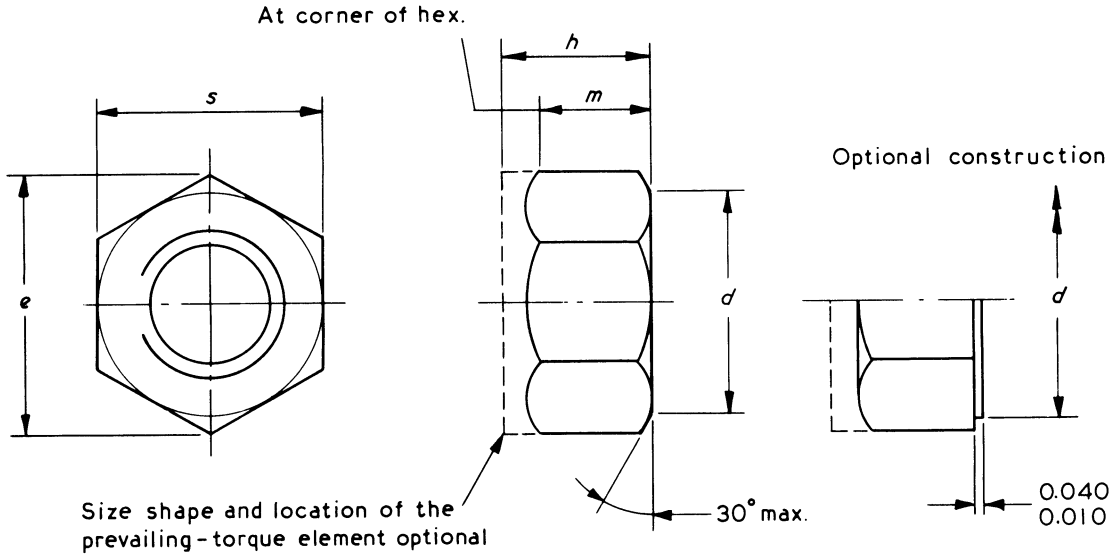
3) The number of this British Standard, i.e. BS 4929-2.

4) The plating (if required), in accordance with BS 3382.

11.2 Example. Nuts of normal thickness ¼ – 20 UNC manufactured from steel (property class 1) and cadmium plated, with nylon insert are designated.

Normal nuts ¼ – 20 UNC to BS 4929-2 property class 1 cadmium plated to BS 3382-1, nylon insert.

Table 2 — Dimensions of inch series prevailing-torque type nuts



Nominal size and thread diameter		Width across flats		Width across corners	Thickness		Height of hex	Diameter of bearing surface		Tolerance on squareness of thread to face of nut
					h					
		S		e	high	normal	m	d		
		max.	min.	max.	max.	max.	min.	max.	**min.**	max.
No. 8	0.164	0.3438	0.3320	0.397	0.246	0.210	0.083	0.344	0.309	0.006
No. 10	0.190	0.3750	0.3620	0.433	0.285	0.241	0.083	0.375	0.337	0.006
1/4	0.250	0.4375	0.4305	0.505	0.328	0.295	0.120	0.438	0.394	0.007
5/16	0.312	0.5000	0.4930	0.577	0.406	0.345	0.150	0.500	0.450	0.009
3/8	0.375	0.5625	0.5545	0.650	0.487	0.415	0.198	0.563	0.506	0.010
7/16	0.437	0.6875	0.6795	0.794	0.568	0.482	0.223	0.688	0.619	0.011
1/2	0.500	0.7500	0.7420	0.866	0.650	0.573	0.262	0.750	0.675	0.013
9/16	0.562	0.8750	0.8670	1.010	0.731	0.621	0.286	0.875	0.787	0.013
5/8	0.625	0.9375	0.9295	1.083	0.812	0.731	0.329	0.938	0.844	0.014
3/4	0.750	1.1250	1.1150	1.300	0.975	0.827	0.382	1.125	1.012	0.017
7/8	0.875	1.3125	1.3005	1.515	1.135	0.975	0.450	1.313	1.181	0.020
1	1.000	1.5000	1.4880	1.732	1.300	1.100	0.513	1.500	1.350	0.020
1 1/8	1.125	1.6875	1.6575	1.948	1.460	1.242	0.576	1.688	1.519	0.024
1 1/4	1.250	1.8750	1.8300	2.165	1.625	1.382	0.628	1.875	1.687	0.024
1 3/8	1.375	2.0625	2.0175	2.382	1.790	1.520	0.681	2.063	1.856	0.026
1 1/2	1.500	2.2500	2.2050	2.598	1.950	1.650	0.757	2.250	2.025	0.026

Dimensions are in inches.

NOTE Design of the method of producing prevailing-torque characteristics and the design of the prevailing-torque feature shall be in accordance with the practice of the manufacturer.

Table 3 — Proof load, clamp load and prevailing-torques for property class 1 UNC threads

Nut size and threads per inch	Tensile stress area (As)	proof load	clamp load	Prevailing torque				
				First installation max.	First removal		Fifth removal	
					Highest reading min.	Lowest reading min.	Highest reading min.	Lowest reading min.
	in^2	lbf	lbf	lbf in	lbf in	lbf in	lbf in	lbf in
No. 8 – 32	0.0140	1 700	900	12	2.0	1.0	1.5	0.5
No.10 – 34	0.0175	2 100	1 100	13	2.5	1.0	2.0	1.0
1/4 – 20	0.0318	3 800	2 000	30	5.0	2.5	3.5	1.5
5/16 – 18	0.0524	6 300	3 350	60	8.0	4	5.5	2.5
3/8 – 16	0.0775	9 300	4 950	80	12	5	8.5	4
7/16 – 14	0.1063	12 800	6 800	100	17	7.5	12	5
1/2 – 13	0.1419	17 000	9 050	150	22	10	15	7.5
				lbf ft				
9/16 – 12	0.1820	21 800	11 600	17	30	15	21	10
5/8 – 11	0.2260	27 200	14 500	25	39	17.5	27	12.5
3/4 – 10	0.3340	40 100	21 300	35	58	25	41	20
7/8 – 9	0.4620	55 500	29 500	50	88	40	62	30
1 – 8	0.6060	72 800	38 700	70	120	60	84	40
1 1/8 – 7	0.7630	91 700	48 600	75	150	70	105	50
1 1/4 – 7	0.9690	116 000	61 600	85	188	90	132	60
1 3/8 – 6	1.1550	139 000	73 500	100	220	110	154	70
1 1/2 – 6	1.4050	169 000	89 500	110	260	130	182	90

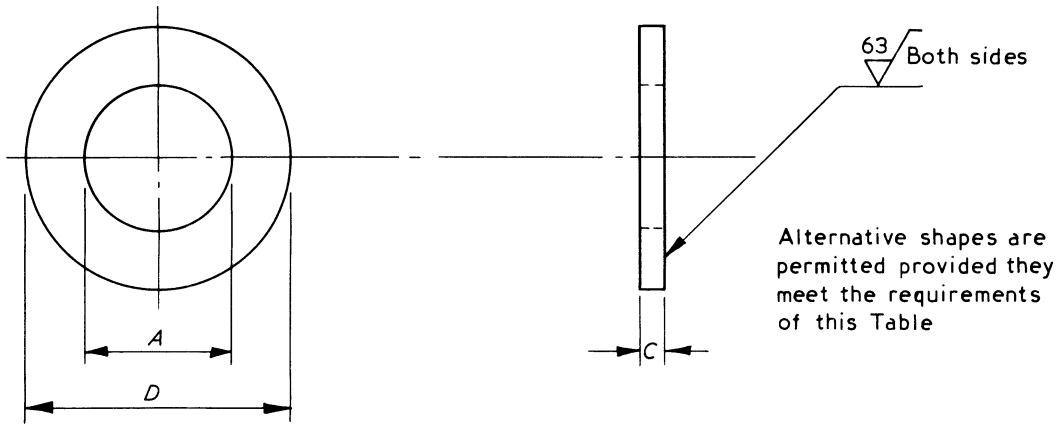
NOTE 1 Proof loads as ISO/R 898/II for property class 8 nuts, i.e. based on a proof load stress of 120 000 lbf/in^2.
NOTE 2 Clamp load equal 75 % of the proof loads for 8.8 bolts As ISO/R 898/I.
e.g clamp load = stress under proof load × tensile stress area × $\frac{75}{100}$ = 85 000 × A_s × $\frac{75}{100}$ lbf.

Table 4 — Proof load, clamp load and prevailing-torques for property class 1 UNF threads

Nut size and threads per inch	Tensile stress area (As)	proof load	Clamp load	Prevailing torque				
				First installation max.	First removal		Fifth removal	
					Highest reading min.	Lowest reading min.	Highest reading min.	Lowest reading min.
	in^2	lbf	lbf	lbf in	lbf in	lbf in	lbf in	lbf in
No. 8 – 36	0.0147	1 750	930	12	2.0	1.0	1.5	0.5
No.10 – 36	0.0200	2 400	1 300	13	2.5	1.0	2.0	1.0
1/4 – 28	0.0364	4 350	2 300	30	5.0	2.5	3.5	1.5
5/16 – 24	0.0580	6 950	3 700	60	8.0	4	5.5	2.5
3/8 – 24	0.0878	10 500	5 600	80	12	5	8.5	4
7/16 – 20	0.1187	14 200	7 550	100	17	7.5	12	5
1/2 – 20	0.1599	19 200	10 200	150	22	10	15	7.5
				lbf ft				
9/16 – 18	0.2030	24 400	13 000	17	30	15	21	10
5/8 – 18	0.2560	30 700	16 300	25	39	17.5	27	12.5
3/4 – 16	0.3730	44 800	23 800	35	58	25	41	20
7/8 – 14	0.5090	61 000	32 400	50	88	40	62	30
1 – 12	0.6630	79 600	42 300	70	120	60	84	40
1 1/8 – 12	0.8560	103 000	54 600	75	150	70	105	50
1 1/4 – 12	1.0730	129 000	68 400	85	188	90	132	60
1 3/8 – 12	1.3150	158 000	83 700	100	220	110	154	70
1 1/2 – 12	1.5810	190 000	100 900	110	260	130	182	90

NOTE 1 Proof loads as ISO/R 898/II for property class 8 nuts, i.e. based on a proof load stress of 120 000 lbf/in^2.
NOTE 2 Clamp load equal 75 % of the proof loads for 8.8 bolts As ISO/R 898/I.
e.g clamp load = stress under proof load × tensile stress area × $\frac{75}{100}$ = 85 000 × A_s × $\frac{75}{100}$ lbf.

Table 5 — Test washer, inch series



Test bolt size	Washer dimensions			
	A		*D*	*C*
	max.	min.	min.	min.
in				
No. 8	0.184	0.174	13/32	0.058
No. 10	0.210	0.200	15/32	0.058
1/4	0.280	0.265	5/8	0.073
5/16	0.343	0.328	11/16	0.073
3/8	0.410	0.395	13/16	0.073
7/16	0.473	0.458	59/64	0.073
1/2	0.555	0.540	1 1/16	0.114
9/16	0.618	0.602	1 3/16	0.114
5/8	0.680	0.665	1 5/16	0.114
3/4	0.810	0.790	1 1/2	0.153
7/8	0.935	0.915	1 3/4	0.153
1	1.060	1.040	2	0.153
1 1/8	1.185	1.165	2 1/2	0.185
1 1/4	1.315	1.290	2 3/4	0.185
1 3/8	1.440	1.415	3	0.206
11/2	1.565	1.540	3 1/4	0.206

Dimensions are in inches.
NOTE 1 Material: Carbon steel quenched and tempered.
Surface hardness Rockwell 85 to 88 HR 15N.
Core hardness Rockwell 73 to 78 HRA.
NOTE 2 Finish: Plain.
NOTE 3 Washers shall be free from burrs and sharp edges

Appendix A BSI policy statement on screw threads and the metric system

The major sectors of British industry were represented at a conference organized by the BSI on 23rd November, 1965. They gave their approval to a policy statement which urged British firms to regard the traditional screw thread systems — Whitworth, B.A. and B.S.F. — as obsolescent, and to make the internationally-agreed ISO metric thread their first choice (with the ISO Unified thread as second choice) for all future designs.

Prior to the conference the statement had been endorsed by the Mechanical Engineering Industry Standards Committee, the Engineering Divisional Council and the General Council of BSI.
The following is the text of the policy statement:

"On 24th May, 1965 the Right Hon. Douglas Jay, the President of the Board of Trade, announced in Parliament that it would be desirable for this country to change to the metric system. An extract from his statement is given below:

"... British industries on a broadening front should adopt metric units sector by sector, until that system can become in time the primary system of weights and measures for the country as a whole ... the Government hope that within ten years the greater part of the country's industry will have effected the change ..."

The national need for increased exports coupled with maximum efficiency and economy of production lies behind the above statement and makes it essential to give urgent and serious consideration to the screw thread situation in the United Kingdom.

After many years' work the International Organization for Standardization (ISO) has reached agreement on ISO Recommendations for general purpose screw threads. This agreement will enable the industries of the world to align the usage of screw threads and to minimize the present diversities of practice.

The ISO Recommendations comprise a system of ISO metric threads[2)] and a system of ISO inch threads.[3)] The ISO inch threads are the same as the existing Unified threads.

In view of the world trend towards the metric system, and having particular regard to the declared UK national policy for its adoption, it is strongly recommended that British industry should adopt the ISO metric screw thread system.

Although it is appreciated that some of those sections of industry already using ISO Unified (inch) screw threads may find it necessary, for various reasons, to continue with their use for some time, Whitrworth B.A. and B.S.F. threads should be superseded by ISO metric threads in preference to an intermediate change to ISO inch threads.

NOTE Threads on pipes will continue to be as specified in BS 21 which have been adopted as the ISO pipe thread and which are covered in ISO Recommendation R 7, "Pipe threads for gas list tubes and screwed fittings where pressure-tight joints are made on the threads (⅛ in to 6 in)".

2) BS 3643, "ISO metric :screw threads".

3) BS 1580, "Unified screw threads".

Publications referred to

This standard makes reference to the following British Standards:
BS 21, *Pipe threads for tubes and fittings where pressure-tight joints are made on the thread.*
BS 240, *Method for Brinell hardness test.*
BS 240-1, *Testing of metals.*
BS 427, *Method for Vickers hardness test.*
BS 427-1, *Testing of metals.*
BS 860, *Tables for comparison of hardness scales.*
BS 891, *Method for Rockwell hardness test.*
BS 891-1, *Testing of metals.*
BS 1580, *Unified screw threads.*
BS 3382, *Electro-plated coatings on threaded components.*

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