

**Bolts, large
bihexagonal head, close
tolerance normal
shank, medium length
thread, in heat resisting
nickel base alloy,
passivated —
Classification:
1 550 MPa (at ambient
temperature)/315 °C**

The European Standard EN 2874:1996 has the status of a
British Standard

ICS 49.040.20

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee ACE/12, Aerospace fasteners and fastening systems, upon which the following bodies were represented:

Association of Electronic, Telecommunications and Business Equipment
Industries
British Industrial Fasteners Federation
Ministry of Defence
Society of British Aerospace Companies

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 December 1996

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National foreword

This British Standard has been prepared by Technical Committee ACE/12 and is the English language version of EN 2874:1996 *Aerospace series — Bolts, large bihexagonal head, close tolerance normal shank, medium length thread, in heat resisting nickel base alloy, passivated — Classification: 1 550 MPa (at ambient temperature)/315 °C*, published by the European Committee for Standardization (CEN).

EN 2874:1996 was produced as a result of international discussions in which the United Kingdom took an active part.

Cross-references

Publication referred to	Corresponding British Standard
ISO 3186:1994	BS A 310:1995 <i>Bolts, large bihexagonal head, normal shank, short or medium length MJ threads, metallic material, coated or uncoated, strength classes 1 250 MPa to 1 800 MPa. Dimensions</i>
ISO 3353:1992	BS 2A 231:1993 <i>Rolled threads for bolts. Lead and runout requirements</i>
ISO 5855-2:1988	BS 6293 <i>Aerospace. MJ threads</i> Part 2:1994 <i>Limit dimensions for bolts and nuts</i>
ISO 7913:1994	BS 2A 296:1995 <i>Bolts and screws, metric. Tolerances of form and position</i>
EN 2000:1991	BS EN 2000:1992 <i>Quality assurance. EN aerospace products. Approval of the quality system of manufacturers</i>
EN 2424:1995	BS EN 2424:1995 <i>Marking of aerospace products</i>
EN 3042:1991	BS EN 3042:1992 <i>Quality assurance. EN aerospace products. Qualification procedures</i>

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 6, 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.

EUROPEAN STANDARD

EN 2874

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 1996

ICS 49.040.20

Descriptors: Aircraft industry, screw, double hexagonal head screw, nickel alloy, heat resistant material, specification, dimension, dimensional tolerance, surface treatment, designation, marking

English version

Aerospace series — Bolts, large bihexagonal head, close tolerance normal shank, medium length thread, in heat resisting nickel base alloy, passivated — Classification: 1 550 MPa (at ambient temperature)/315 °C

Série aérospatiale — Vis à tête bihexagonale large, tige normale à tolérance serrée, filetage moyen, en alliage résistant à chaud à base de nickel, passivées — Classification: 1 550 MPa (à température ambiante)/315 °C

Luft- und Raumfahrt — Zwölfkant-Paßschrauben mittlere Gewindelänge, aus hochwarmfester Nickelbasislegierung, passiviert — Klasse: 1 550 Mpa (bei Raumtemperatur)/315 °C

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Foreword

This European Standard has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After inquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 1997, and conflicting national standards shall be withdrawn at the latest by January 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies the characteristics of bolts, large bihexagonal head, close tolerance normal shank, medium length thread, in heat resisting nickel base alloy, passivated.

Classification: 1 550 MPa¹/315 °C²)

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

ISO 3186, *Aerospace — Bolts, large bihexagonal head, normal shank, short or medium length MJ threads, metallic material, coated or uncoated, strength classes 1 250 MPa to 1 800 MPa — Dimensions.*

ISO 3353, *Aerospace — Rolled threads for bolts — Lead and runout requirements.*

ISO 4095, *Fasteners for aerospace construction — Bi-hexagonal wrenching configuration.*

ISO 5855-2, *Aerospace — MJ threads — Part 2: Limit dimensions for bolts and nuts.*

ISO 7913, *Aerospace — Bolts and screws, metric — Tolerances of form and position.*

ISO 9154, *Aerospace — Bolts, strength class 1 550 MPa, MJ threads — Procurement specification*³).

EN 2000, *Aerospace series — Quality assurance — EN aerospace products — Approval of the quality system of manufacturers.*

EN 2424, *Aerospace series — Marking of aerospace products.*

EN 2516, *Aerospace series — Passivation of corrosion resistant steels and decontamination of nickel based alloys*⁴).

EN 3042, *Aerospace series — Quality assurance — EN aerospace products — Qualification procedure.*

EN 3769, *Aerospace series — Electrolytic polishing of corrosion resistant steels and heat resisting alloys*⁴).

EN 4016, *Aerospace series — Oversized bolts*⁵).

TR 3775, *Aerospace series — Bolts and pins — National materials*⁶).

3 Required characteristics

3.1 Configuration – Dimensions – Masses

See Figure 1 and Table 1.

Dimensions and tolerances are: in conformity with ISO 3186, expressed in millimetres and apply after surface treatment.

3.2 Tolerances of form and position

ISO 7913

3.3 Materials

TR 3775 (heat resisting nickel base alloy, strength class 1 550 MPa)

3.4 Surface treatments

EN 2516

or

EN 3769 on the head (except bearing face), then EN 2516 on all the bolt. In this case, code P shall be used in the designation.

¹) Minimum tensile strength of the material at ambient temperature

²) Maximum temperature that the bolt can withstand without continuous change in its original characteristics, after return to ambient temperature. The maximum temperature is determined by the surface treatment.

³) In preparation at the date of publication of this standard

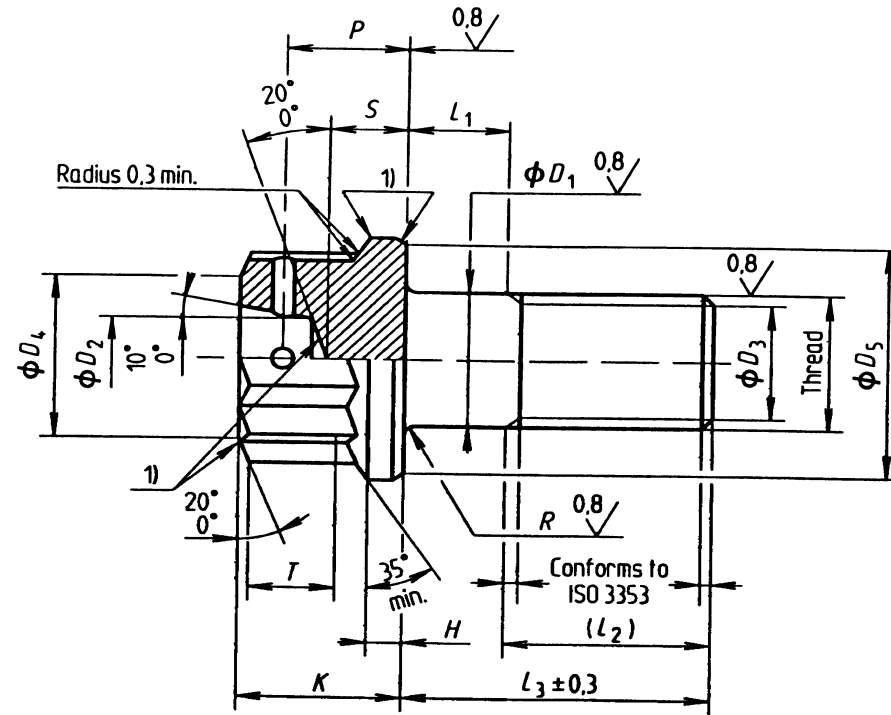
⁴) Published as AECMA Standard at the date of publication of this standard

⁵) Published as AECMA Prestandard at the date of publication of this standard

⁶) Published as AECMA Technical Report at the date of publication of this standard

$3,2 \sqrt{\quad} \left[0,8 \sqrt{\quad} \right]$ Values in micrometres apply prior to surface treatment.

Break sharp edges 0,1 to 0,4.



1) Shape in this area at manufacturer's option

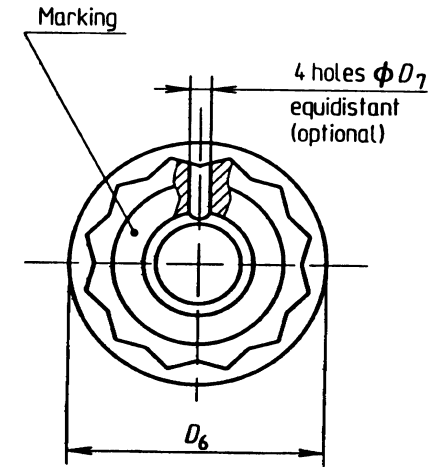


Figure 1

Table 1

Diameter code	Thread ^a	D_1 f7	D_2 $+1$ 0	D_3 $\pm 0,5$	D_4 min.	D_5 min.	D_6 max.	D_7 H13	H min.	K h15	$L_1 \pm 0,2^{bc}$		L_2	P	R 0 $-0,2$	S $+0,4$ 0	T min.	Wrenching dash number ^d	Mass ^e	
											Code	nom.							f	g
050	MJ5×0,8 – 4h6h	5	2,5	3,4	6,8	9,5	10,3	1	1,5	7,4	003 to 050	3 to 50	12,5	5,3	0,8	3,3	2,8	07	5,18	0,16
060	MJ6×1 – 4h6h	6	3,2	4,2	7,8	11	11,8	1,4	1,7	8,4	003 to 060	3 to 60	15	6,1	1	3,8	3,5	08	7,92	0,23
070	MJ7×1 – 4h6h	7	3,9	5,2	8,8	12,5	13,3		1,9	9,2	004 to 070	4 to 70	16	6,7		4,2	3,8	09	12,40	0,32
080	MJ8×1 – 4h6h	8	4,5	6,2	9,8	14	14,8		2,1	9,8	004 to 080	4 to 80	17	7,2		4,6	3,9	10	15,85	0,42
100	MJ10×1,25 – 4h6h	10	6,1	7,9	11,8	17,3	18,3	1,6	2,5	11,6	005 to 100	5 to 100	21	8,5	1,2	5,5	4,2	12	29,07	0,64
120	MJ12×1,25 – 4h6h	12	7,7	9,8	13,7	20,9	22		2,9	12,9	006 to 120	6 to 120	23,5	9,6	1,4	6,4	4,5	14	46,85	0,92
140	MJ14×1,5 – 4h6h	14	10,3	11,5	16,7	23,9	25		3,3	14,3	007 to 140	7 to 140	27,5	10,8	1,8	7,1	5,1	17	70,36	1,16
160	MJ16×1,5 – 4h6h	16	11,9	13,5	18,6	27,4	28,5		3,7	15,8	008 to 160	8 to 160	30	12,4		8,4	5,3	19	103,45	1,65
180	MJ18×1,5 – 4h6h	18	14,5	15,5	21,6	30,4	31,5		4,1	17,1	009 to 180	9 to 180	33	13,9		9,4	6,1	22	143,20	2,10
200	MJ20×1,5 – 4h6h	20	16	17,5	23,6	33,4	34,5		4,5	18,6	010 to 200	10 to 200	35,5	15,3	10,5	6,6	24	190,60	2,60	
220	MJ22×1,5 – 4h6h	22	18,6	19,5	26,6	36,4	37,5	4,9	19,9	011 to 220	11 to 220	38	16,8	11,6	7,4	27	274,00	3,10		
240	MJ24×2 – 4h6h	24	21,2	20,9	29,6	39,4	40,5	5,3	21,9	012 to 240	12 to 240	43,5	18,3	12,7	8,2	30	365,90	3,70		

^a In accordance with ISO 5855-2, except the thread major diameter “ d max.” which shall be equal to D_1 min. – 0,025.

^b Increments:

1 for $L_1 \leq 30$

2 for $30 < L_1 \leq 100$

4 for $L_1 > 100$

^c If greater lengths are required, these shall be chosen using the above increments. The length code corresponds to the length L_1 , completed by one or two zeros to the left, where necessary, to obtain a three digit code.

^d In accordance with ISO 4095 over T min.

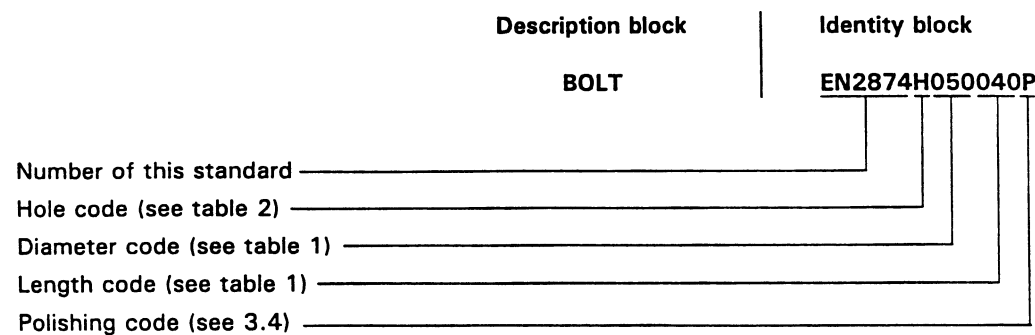
^e Approximate values (kg/1 000 pieces), calculated on the basis of $8,25 \text{ kg/dm}^3$, given for information purposes only. They apply to bolts without holes.

^f Values for head and first L_3

^g Increase for each additional millimetre of L_3 .

4 Designation

EXAMPLE:



NOTE If necessary, the code I9005 shall be placed between the description block and the identity block.

Table 2

Holes	Code
with	H
without	— (hyphen)

5 Marking

EN 2424, style C plus MJ, indented (see Figure 1).

6 Technical specification

ISO 9154, except for clauses:

- Approval of manufacturers: see EN 2000;
- Qualification of bolts: see EN 3042.

7 Oversized bolts

EN 4016

List of references

See national foreword.

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