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Aerospace — Rivets, solid — Material and metric series identification

*Aéronautique et espace — Rivets ordinaires — Identification du matériau et
de la série métrique*



Reference number
ISO 10299:2000(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 10299 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 4, *Aerospace fastener systems*.

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Aerospace — Rivets, solid — Material and metric series identification

1 Scope

This International Standard specifies the marks allowed to identify material and metric series on solid rivets for use in aerospace construction.

It applies when reference is made to this International Standard in the product standard or definition document.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO/TR 12198:1998, *Aerospace — Rivets, solid — Materials*.

3 Requirements

3.1 Marking

Marks shall be legible.

3.2 Material identification

The identification of the material shall be marked on the head of the rivet, see Tables 1 and 2.

Location is left to the manufacturer's discretion. However, marking shall not cause interference when setting.

Table 1 positions marks in relation to shank diameter drawn up in dotted lines.

Only materials given in ISO/TR 12198 are indicated Table 1.

3.3 Metric series identification

See Figure 1. Marking shall not cause interference when setting. This symbol shall be legible to the unaided eye.

3.4 Complementary requirements

Complementary requirements (for example coloration) shall be specified in the product standard or definition document.

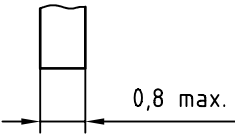
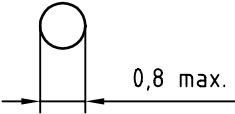
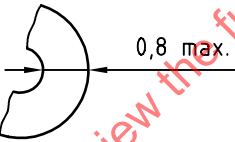
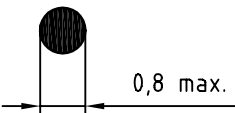
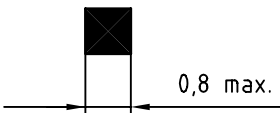
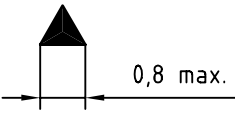
Table 1 — Material identification

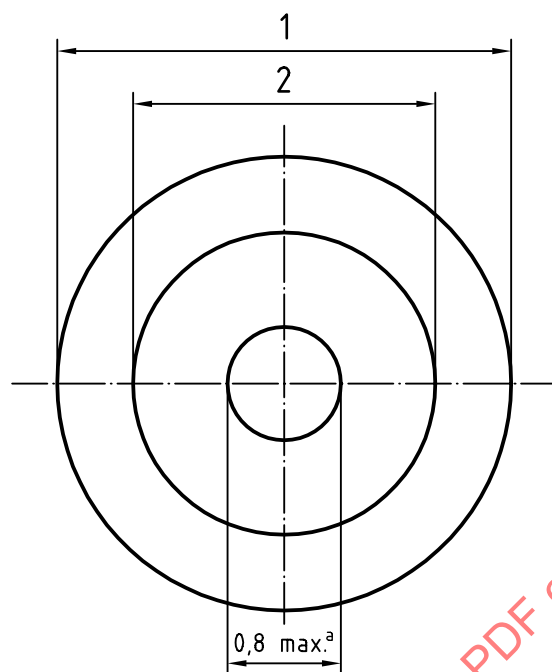
Family	Material Designation	Symbol ^a
Aluminium alloys	Al99,5 (1050A)	(no marking)
	Al4Cu0,7Mg0,7Mn (2017A)	 embossed
	Al4,4Cu1,5Mg0,6Mn (2024)	 embossed
	Al2,6Cu0,3Mg (2117)	 indented
	Al6,3Cu0,3Mn0,06Ti (2219)	 indented
	Al5Mg0,3Mn (5056A)	 embossed
	Al6,2Zn2,3Cu2,2Mg0,1Zr (7050)	 embossed
	Al4Cu0,4Mn0,2Mg (V65)	(no marking)
Corrosion-resistant steels	X2CrNi19-11 (AISI 304L)	 indented
	X6NiCrTiMoV26-15 (A286)	 embossed
Nickel alloys	Ni30Cu (Monel 400)	 embossed
	Ni19Cr0,4Ti (Nimonic 75)	 indented
	NiCr22Fe18Mo9 (Hastelloy X)	 embossed
	Ni16Cr7Fe3Ti1Nb1Al (Inconel X750)	 indented
Titanium (commercially pure)	(T40)	 embossed
Titanium alloy	Ti44,5Cb	 indented

^a Dimensions are given in Table 2.

Table 2 — Dimensions of symbols

Dimensions in millimetres

Position	Symbol	Width	Height or depth
embossed		0,8 max.	0,2 max.
		0,8 max.	
		0,8 max.	
indented		0,8 max.	
		0,8 max.	
		0,8 max.	

**Key**

- 1 Shank diameter
2 Radiused tail end diameter

^a Dot, indented on the tail end to a depth of 0,2 max.

Figure 1**4 Drill start**

The drill start option will be indicated by a code in the rivet designation.

The dimensions of the drill start, located in the centre of the rivet head, are as follows:

- diameter: $\varnothing$ 0,8 mm max.;
- depth: 0,2 mm max.