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МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ

Aerospace — Pipelines — Identification

Aéronautique et espace — Tuyauteries — Identification

Reference number
ISO 12 : 1987 (E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 12 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*.

This second edition cancels and replaces the first edition (ISO 12 : 1976), which has been technically revised as follows:

— the scope and field of application has been modified;

— a symbol has been added for filtered air (see table 1 and figure 2);

— sub-clause 3.3 (now 4.3) on the supplementary identification marker has been expanded.

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Aerospace — Pipelines — Identification

1 Scope and field of application

This International Standard lays down the requirements for a scheme to indicate, by appropriate marking, the functions or contents of rigid pipe assemblies in aircraft and spacecraft systems, but excluding those in aero-engines with the exception of those which connect directly to the airframe systems at their break points.

These requirements may also be applied to hose assemblies, if desired.

The purpose of the scheme is to provide the minimum identification necessary for normal maintenance purposes.

NOTE — Markers used for the purpose of applying this identification scheme should not adversely affect the chemical or mechanical properties of the pipes or conduits.

2 Reference

ISO 3323, *Aircraft — Hydraulic components — Marking to indicate fluid for which component is approved.*

3 Identification scheme

3.1 General

3.1.1 Where ambient temperatures permit, the scheme shall consist of markers fixed to the pipelines to indicate their functions or contents, to give due warning where the contents are dangerous and, when required, to indicate the direction of flow of the contents. Typical applications of the scheme are shown in figure 1.

Any supplementary identification required should be separate and distinct from the lettering, symbols and colours specified in this International Standard. It is recommended that such supplementary identification should be by means of a number code [see figure 1d)].

3.1.2 Where ambient temperatures are too high to permit the use of markers, the requirements of this International Standard shall be met as fully as possible. As a minimum requirement, one inscription in black letters, located in accordance with clause 5, shall be applied in such a manner that it remains legible throughout the temperature range imposed on the pipeline.

3.2 Basic identification

3.2.1 Each rigid pipe in the pipe systems listed in table 1 shall be identified by a marker bearing the designation of the system, together with the appropriate symbol as described in table 1 and shown in figure 2.

3.2.2 Pipelines for replenishment, vents, pressure transmission, priming and drains, or related functional equipment, shall be identified by the same marker as the main pipeline.

Table 1 — Pipe systems and symbols

Designation of pipe system	Symbol (see figure 2)	
	Description	No.
Air conditioning (including cabin pressurizing)	Dot pattern	11
Battery activator	Ellipse with radiating lines	24
Breathing oxygen	Rectangle	10
Compressed gas	Broad diagonal stripe	16
Coolant	Broad undulations	9
De-icing	Triangle[1]	13
Drinking water	"H_2O"	25
Electrical conduit	Flash of lightning	17
Filtered air	"NBC"	27
Fire protection	Horizontal diamond	12
Fuel	Four-pointed star	1
Hydraulic	Circle	6
Inerting	Pipe cross[1]	19
Instrument air	Zig-zag line[2]	8
Lubrication	Square[1]	5
Monopropellant	Block T	21
Rain repellent	Falling raindrops	22
Pneumatic	"X"[2]	7
Rocket catalyst	Three vertical stripes[2]	15
Rocket fuel	Four-pointed star inside crescent	3
Rocket oxidizer	Crescent	2
Solvent	Horizontal stripes	20
Vacuum	Wavy line[2]	23
Waste water	Chain[2]	26
Water injection	Chevron	4

1) Alternate symbols to be staggered.

2) Continuous pattern.