

Aircraft — Fluid systems — Thermal shock testing of piping and fittings

ICS 49.080

Confirmed
November 2010

National foreword

This British Standard reproduces verbatim ISO 6773:1994 and implements it as the UK national standard. It supersedes BS M 53:1983 which is withdrawn. The UK participation in its preparation was entrusted to Technical Committee ACE/69, Aerospace hydraulic systems, fluids and components, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the ISO title page, pages ii to iv, pages 1 and 2 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.

Amendments issued since publication

Amd. No.	Date	Comments

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 November 1997

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ISBN 0 580 28786 6

Contents

	Page
National foreword	Inside front cover
Foreword	iii
Text of ISO 6773	1

INTERNATIONAL
STANDARD

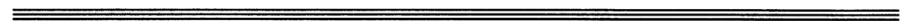
ISO
6773

Second edition
1994-10-01



**Aerospace — Fluid systems — Thermal
shock testing of piping and fittings**

*Aéronautique et espace — Systèmes de fluides — Essai de choc
thermique des tuyauteries et raccords*



Reference number
ISO 6773:1994(E)

Contents

	Page
Foreword	iii
1 Scope	1
2 Normative reference	1
3 Required characteristics	1
4 Method of test	1
Figure 1 — Thermal shock test apparatus	2

Descriptors: Aircraft, aircraft equipment, hydraulic systems, fluid circuits, piping, pipes (tubes), pipe fittings, tests, thermal shock tests.

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.

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.

International Standard ISO 6773 was prepared by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 10, *Aerospace fluid systems and components*.

This second edition cancels and replaces the first edition (ISO 6773:1982), the figure of which has been technically revised and the text clarified in places.

1 Scope

This International Standard provides an environmental test method for thermal shock testing of fluid system piping and fittings, excluding hose and hose assemblies.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards. ISO 6772:1988, *Aerospace — Fluid systems — Impulse testing of hydraulic hose, tubing and fitting assemblies*.

3 Required characteristics

The test assemblies shall not leak or burst during temperature and pressure cycling procedures described in clause 4.

4 Method of test

4.1 Test apparatus

The test assemblies shall be mounted in a test fixture similar to that shown in Figure 1 capable of providing the specified test fluid, ambient temperatures and circuit pressures corresponding to the system classification specified in ISO 6772.

4.2 Test fluid

The specified test fluid shall be a system fluid or hydraulic fluid which is compatible with the item being tested and the specified system pressure and temperature.

4.3 Hot test chamber testing

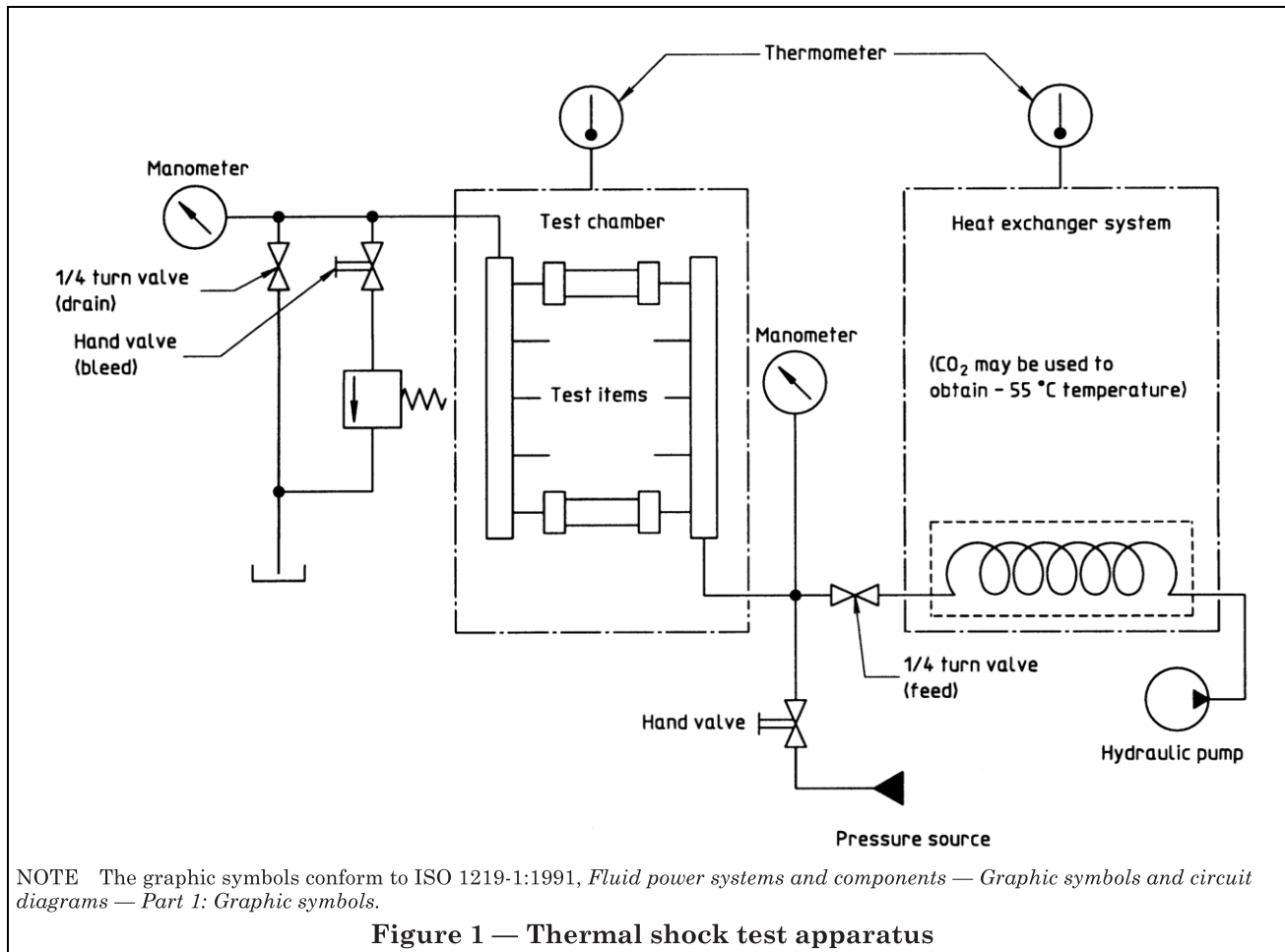
Mount the test assemblies in a temperature chamber, connect them to a pressure source and fill them with the specified test fluid. Then pressurize the assemblies to at least the nominal circuit service pressure and raise the temperature in the test chamber to at least the maximum specified for the circuit. Hold this temperature for a minimum of 2 h. At the end of this period, while still at at least the maximum temperature, release the hot test fluid and replace it within 20 s with test fluid initially at or below the minimum specified temperature. Within an additional 20 s, raise the test pressure to at least proof pressure and maintain this pressure for at least 1 min and then release it for at least an additional 1 min. Then repeat the 1-min proof test. Observe the assemblies continuously during the two 1-min pressurization periods to determine any leakage.

4.4 Cold test chamber testing

Following a cooling period to room temperature, re-apply at least the nominal circuit pressure and lower the chamber temperature to at least the minimum specified. Hold this temperature for a minimum of 2 h. At the end of this period while still at low temperature, release the cold fluid and replace it with test fluid initially at at least the maximum circuit temperature within 20 s. Within an additional 20 s, raise the pressure to the proof pressure specified for the circuit, and maintain this pressure for at least 1 min. Observe the specimens closely to determine any leakage.

4.5 Test schedule

The procedures described in 4.3 or 4.4 shall be repeated in sequence three times to complete the requirements of the thermal shock test.



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