

INTERNATIONAL STANDARD

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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)

Foreword

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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.

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International Organization for Standardization

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

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.

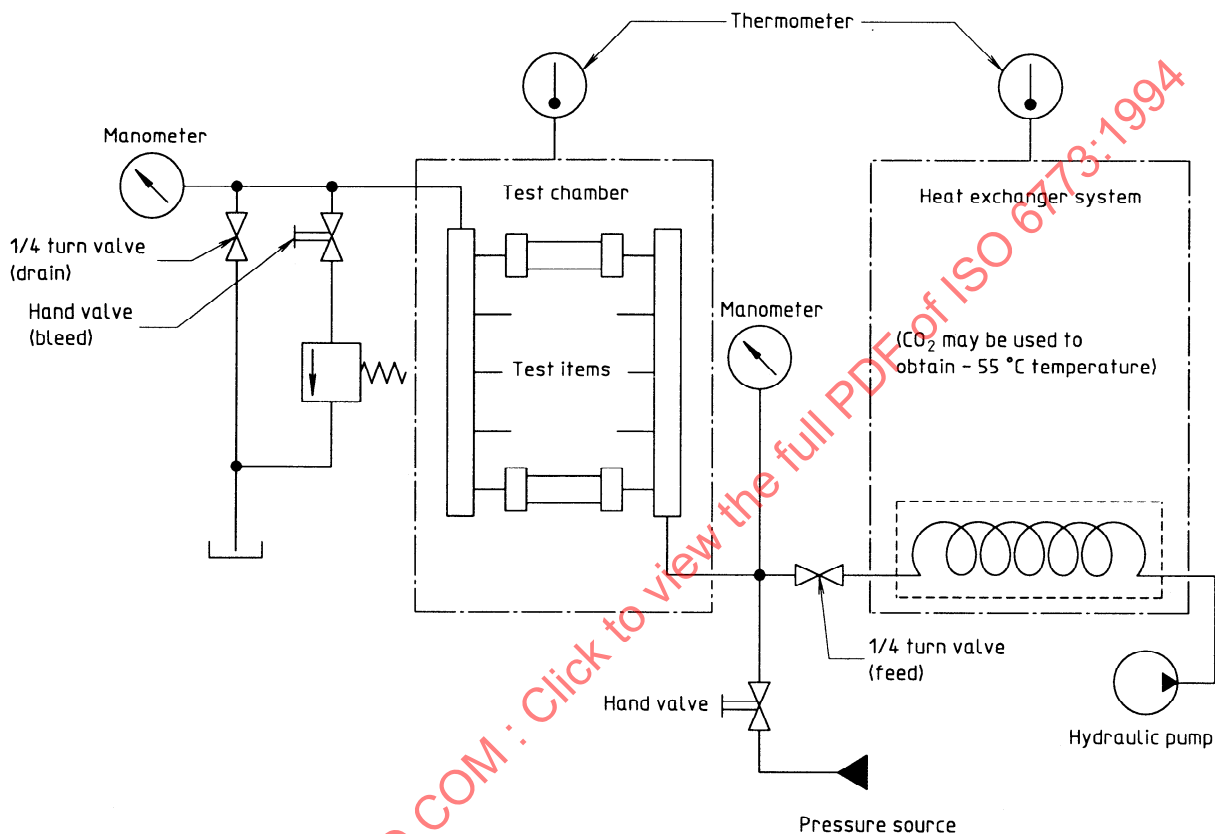
4.4 Cold test chamber testing

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.



NOTE — The graphic symbols conform to ISO 1219-1:1991, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols*.

Figure 1 — Thermal shock test apparatus

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