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Testing of valves — Fire type-testing requirements

Essais des appareils de robinetterie — Exigences de l'essai au feu



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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 2.

The main task of technical committees is to prepare International Standards. 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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 10497 was prepared by Technical Committee ISO/TC 153, *Valves*, Subcommittee SC 1, *Design, manufacture, marking and testing*.

This third edition cancels and replaces the second edition (ISO 10497:2004), which has been technically revised.

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Introduction

This International Standard covers the requirements and method for evaluating the performance of valves when they are exposed to defined fire conditions. The performance requirements establish limits of acceptability of a valve, regardless of size or pressure rating. The burn period has been established to represent the maximum time required to extinguish most fires. Fires of longer duration are considered to be of major magnitude, with consequences greater than those anticipated in the test.

The test pressure during the burn is set at 0,2 MPa (2 bar) for soft-seated valves rated PN 10, PN 16, PN 25 and PN 40, Class 150 and Class 300, to better simulate the conditions that would be expected in a process plant when a fire is detected and pumps are shut down. In this case, the source of pressure in the system is the hydrostatic head resulting from liquid levels in towers and vessels. This situation is approximated by this lower test pressure.

In production facilities, valves are typically of a higher rating and the pressure source is not easily reduced when a fire is detected. Therefore, for all other valves, the test pressure during the burn is set at a higher value to better simulate the expected service conditions in these facilities.

Use of this International Standard assumes that the execution of its provisions is entrusted to appropriately qualified and experienced personnel, because it calls for procedures that can be injurious to health, if adequate precautions are not taken. This International Standard refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage of the procedure.