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Standards

Standard Recommendation
S.R. CEN ISO/TS 27469:2011

Petroleum, petrochemical and natural gas industries - Method of test for fire dampers (ISO/TS 27469:2010)

S.R. CEN ISO/TS 27469:2011

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ICS 75.180.10

English Version

**Petroleum, petrochemical and natural gas industries - Method of
test for fire dampers (ISO/TS 27469:2010)**

Industries du pétrole, de la pétrochimie et du gaz naturel -
Méthode d'essai des clapets coupe-feu (ISO/TS
27469:2010)

Erdöl-, petrochemische und Erdgasindustrie - Prüfverfahren
für Brandschutzklappen (ISO/TS 27469:2010)

This Technical Specification (CEN/TS) was approved by CEN on 18 July 2011 for provisional application.

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Foreword

The text of ISO/TS 27469:2010 has been prepared by Technical Committee ISO/TC 67 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” of the International Organization for Standardization (ISO) and has been taken over as CEN ISO/TS 27469:2011 by Technical Committee CEN/TC 12 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” the secretariat of which is held by AFNOR.

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Endorsement notice

The text of ISO/TS 27469:2010 has been approved by CEN as a CEN ISO/TS 27469:2011 without any modification.

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S.R. CEN ISO/TS 27469:2011

TECHNICAL SPECIFICATION

ISO/TS 27469

First edition
2010-02-01

Petroleum, petrochemical and natural gas industries — Method of test for fire dampers

*Industries du pétrole, de la pétrochimie et du gaz naturel — Méthode
d'essai des clapets coupe-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.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of document:

- an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;
- an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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ISO/TS 27469 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 6, *Processing equipment and systems*.

Introduction

The purpose of this International Technical Specification is to enable evaluation of the ability of a fire damper installation to maintain the integrity of fire rated barriers. Typical fire barrier ratings are given in ISO 13702:1999, Table C.5.

The following performance criteria are evaluated by this Technical Specification:

- a) fire integrity and insulation: to limit/control the spread of radiated and conducted heat at the protected side of a fire damper installation; it is necessary to determine the distance from the damper's blades, in free air or along a duct, where temperatures do not exceed requirements;
- b) ability to provide protection from both hydrocarbon pool fires and jet fires;
- c) leakage past closed blades;
- d) ability to withstand overpressure that can arise from an explosion.

This Technical Specification is based on the use of existing approved fire research and testing facilities. Specially constructed facilities can be required for testing blast pressure withstand capability. It is important that test dampers be installed in a manner that represents their design installation.

In carrying out the tests described in this Technical Specification, it is necessary to refer to other standards connected with the fire-testing of materials and application in the petroleum and natural gas industries. The test methods simulate thermal and overpressure conditions that can result from fire and explosion. The conditions in a real incident can be different, so the test results and resultant damper designations do not guarantee safety but can be used as elements of a fire and explosion risk assessment that takes into account all other pertinent factors.

NOTE It is planned to determine some aspects of this Technical Specification during the development and testing stage.

Petroleum, petrochemical and natural gas industries — Method of test for fire dampers

CAUTION - Attention is drawn to the fact that fire testing is hazardous and that there is a possibility that toxic fumes, smoke and/or gases can be evolved during tests. Mechanical and operational hazards can also occur during construction of the test elements or structures, their testing and disposal of test residues.

It is essential that an assessment of all potential hazards and risks to health be made and safety precautions identified and provided, including appropriate training to relevant personnel.

1 Scope

This Technical Specification specifies a method for determining the following:

- a) ability of fire dampers installed in ventilation systems to prevent the spread of fire and heat through designated fire divisions; typical ratings are given in ISO 13702:1999, Table C.5.
- b) fire damper operational reliability in the petroleum, petrochemical and natural gas industries, particularly offshore installations;

NOTE It is planned to determine the methodology during the testing and development phase.

- c) ability of fire dampers installed in ventilation systems to withstand blast overpressures that may result from the explosion of a flammable gas.

This Technical Specification applies to different start-up operations for different types of furnace and, therefore, tolerances in test conditions at the beginning of the test are not described in detail. The fire test enables only a limited assessment of the actuating mechanism being carried out and additional tests can be necessary to fully evaluate its operational reliability.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 834-1, *Fire-resistance tests — Elements of building construction — Part 1: General requirements*

ISO 13702:1999, *Petroleum and natural gas industries — Control and mitigation of fires and explosions on offshore production installations — Requirements and guidelines*

ISO 15138, *Petroleum and natural gas industries — Offshore production installations — Heating, ventilation and air-conditioning*

ISO 22899-1:2007, *Determination of the resistance to jet fires of passive fire protection materials — Part 1: General requirements*

EN 1363-1, *Fire resistance tests — Part 1: General requirements*

EN 1363-2:1999, *Fire resistance tests — Part 2: Alternative and additional procedures*

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