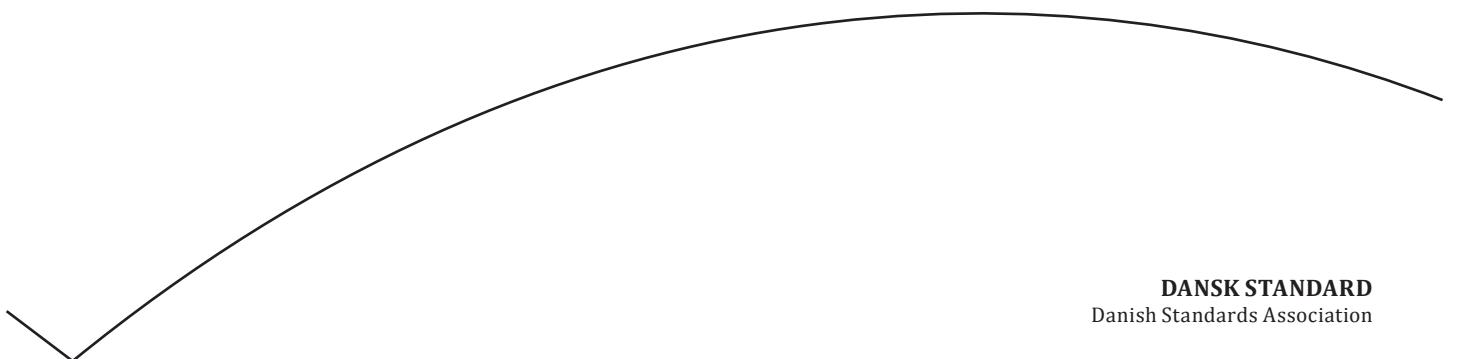




This is a preview of "DS/ISO 20902-1:2018". Click here to purchase the full version from the ANSI store.

Brandprøvningsmetode for adskillende elementer anvendt i petrokemiske industrier – Del 1: Generelle krav

Fire test procedures for divisional elements that are typically used in oil, gas and petrochemical industries – Part 1: General requirements



DANSK STANDARD
Danish Standards Association

Göteborg Plads 1
DK-2150 Nordhavn

Tel: +45 39 96 61 01

Tel: +45 39 96 61 01

dansk.standard@ds.dk

www.ds.dk

This is a preview of "DS/ISO 20902-1:2018". Click here to purchase the full version from the ANSI store.

DS projekt: M310030

ICS: 13.220.50

Første del af denne publikations betegnelse er:

DS/ISO, hvilket betyder, at det er en international standard, der har status som dansk standard.

Denne publikations overensstemmelse er:

IDT med: ISO 20902-1:2018

DS-publikationen er på engelsk.

DS-publikationstyper

Dansk Standard udgiver forskellige publikationstyper.

Typen på denne publikation fremgår af forsiden.

Der kan være tale om:

Dansk standard

- standard, der er udarbejdet på nationalt niveau, eller som er baseret på et andet lands nationale standard, eller
- standard, der er udarbejdet på internationalt og/eller europæisk niveau, og som har fået status som dansk standard

DS-information

- publikation, der er udarbejdet på nationalt niveau, og som ikke har opnået status som standard, eller
- publikation, der er udarbejdet på internationalt og/eller europæisk niveau, og som ikke har fået status som standard, fx en teknisk rapport, eller
- europæisk præstandard

DS-håndbog

- samling af standarder, eventuelt suppleret med informativt materiale

DS-hæfte

- publikation med informativt materiale

Til disse publikationstyper kan endvidere udgives

- tillæg og rettelsesblade

DS-publikationsform

Publikationstyperne udgives i forskellig form som henholdsvis

- fuldtekstpublikation (publikationen er trykt i sin helhed)
- godkendelsesblad (publipukationen leveres i kopi med et trykt DS-omslag)
- elektronisk (publikationen leveres på et elektronisk medie)

DS-betegnelse

Alle DS-publikationers betegnelse begynder med DS efterfulgt af et eller flere præfikser og et nr., fx **DS 383**, **DS/EN 5414** osv. Hvis der efter nr. er angivet et **A** eller **Cor**, betyder det, enten at det er et **tillæg** eller et **rettelsesblad** til hovedstandarden, eller at det er indført i hovedstandarden.

DS-betegnelse angives på forsiden.

Overensstemmelse med anden publikation:

Overensstemmelse kan enten være IDT, EQV, NEQ eller MOD

- **IDT:** Når publikationen er identisk med en given publikation.
- **EQV:** Når publikationen teknisk er i overensstemmelse med en given publikation, men præsentationen er ændret.
- **NEQ:** Når publikationen teknisk eller præsentationsmæssigt ikke er i overensstemmelse med en given standard, men udarbejdet på baggrund af denne.
- **MOD:** Når publikationen er modifieret i forhold til en given publikation.

This is a preview of "DS/ISO 20902-1:2018". Click [here](#) to purchase the full version from the ANSI store.

First edition
2018-03-15

Fire test procedures for divisional elements that are typically used in oil, gas and petrochemical industries —

Part 1: General requirements

Méthodes d'essais au feu des éléments de séparation habituellement utilisés dans les industries pétrolières, gazières et pétrochimiques —

Partie : Exigences générales



Reference number
ISO 20902-1:2018(E)

This is a preview of "DS/ISO 20902-1:2018". Click here to purchase the full version from the ANSI store.



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

This is a preview of "DS/ISO 20902-1:2018". Click here to purchase the full version from the ANSI store.

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Principle	2
5 Test specimen	2
5.1 General	2
5.2 Vertical divisional element dimensions	2
5.3 Horizontal divisional element dimensions	5
5.4 Design	5
5.5 Description	5
5.6 Material specification	5
5.7 Control measurements	6
5.7.1 Thickness	6
5.7.2 Density	6
5.8 Conditioning	6
5.8.1 General	6
5.8.2 Verification	6
5.9 Mounting of test specimens	7
5.10 Examination of the test specimen	7
6 Instrumentation	7
6.1 General	7
6.2 Ambient temperature thermocouple	8
6.3 Furnace temperature thermocouples	8
6.3.1 Design	8
6.3.2 Number	8
6.3.3 Positioning	8
6.4 Furnace pressure sensors	8
6.5 Unexposed-face temperature thermocouples	8
6.5.1 Design	8
6.5.2 Preparation of surfaces to receive thermocouples	9
6.5.3 Fixing of thermocouples	9
6.6 Positioning of thermocouples on the specimen	10
6.6.1 General	10
6.6.2 Structural core temperature thermocouples	10
6.6.3 Stiffeners	11
6.6.4 Unexposed face thermocouples	11
6.7 Measuring and recording equipment for thermocouples	12
6.8 Cotton-wool pads	12
6.9 Gap gauges	12
6.10 Infrared camera	12
7 Test method	12
7.1 General	12
7.2 Commencement of the test	12
7.3 Ambient conditions	13
7.4 Furnace control	13
7.4.1 Furnace temperature	13
7.4.2 Time-temperature relationship	13
7.4.3 Permitted deviations	13
7.4.4 Furnace pressure	13
7.5 Measurements and observations on the test specimen	13

This is a preview of "DS/ISO 20902-1:2018". Click [here](#) to purchase the full version from the ANSI store.

7.5.1	Unexposed face temperature	13
7.5.2	Structural core temperatures	14
7.5.3	Flaming on unexposed face	14
7.5.4	Cotton-wool pad.....	14
7.5.5	Gap gauges.....	14
7.5.6	Deformation.....	14
7.5.7	General behaviour	14
8	Test duration	15
9	Fire protection systems.....	15
9.1	General	15
9.2	Applied fire protection materials.....	15
9.3	Assemblies and mounted fire protection materials.....	16
10	Test report.....	16
11	Uncertainty of measurement.....	17
12	Performance criteria.....	18
12.1	General	18
12.2	Substrate temperature	18
12.3	Coatings and spray-applied materials	18
12.4	Systems and assemblies.....	18
13	Factors affecting the validity of the test	19
13.1	Interruption of the test.....	19
13.2	Failure of thermocouples	19
14	Classification procedures.....	19
14.1	General	19
14.2	Fire exposure type	19
14.3	Protected element.....	19
14.4	Structural stability rating (R)	20
14.5	Integrity rating (E).....	20
14.6	Insulation rating (I).....	20
14.7	Compatibility with existing prescriptive ratings	20
	Annex A (informative) Examples of specimen construction.....	21
	Annex B (informative) Examples of time-temperature curves.....	25
	Annex C (informative) Examples of prescriptive ratings.....	26
	Annex D (informative) Examples of classification.....	28
	Bibliography	29

This is a preview of "DS/ISO 20902-1:2018". Click here to purchase the full version from the ANSI store.

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 2, *Fire containment*.

A list of all parts in the [ISO 20902 series](#) can be found on the ISO website.

This is a preview of "DS/ISO 20902-1:2018". Click [here](#) to purchase the full version from the ANSI store.

Introduction

This document describes a test procedure to assess the protection afforded by fire protection materials and systems to divisional elements. It gives an indication of how fire protection materials perform when exposed to a set of specified fire conditions.

The classification of divisional elements (bulkheads and decks) in the marine industry (i.e. ships as defined by IMO, SOLAS) is primarily undertaken in accordance with classification society procedures through testing to the FTP codes, IMO resolution 307(88), formerly IMO A.754(18). Historically FTP code compliant test evidence has been used to support non-marine applications by implementing hydrocarbon time temperature regime profiles. To reduce the burden on industry, this document is compatible with MSC 307(88) where relevant, allowing testing to both IMO and ISO test procedures for specific classification ratings.

This is a preview of "DS/ISO 20902-1:2018". Click here to purchase the full version from the ANSI store.

Fire test procedures for divisional elements that are typically used in oil, gas and petrochemical industries — Part 1: General requirements

1 Scope

This document specifies a test procedure for determining the fire resistance of divisional elements with a fire protection system, when exposed to cellulosic or hydrocarbon-pool type fire conditions. It is applicable to divisional elements intended for non-marine applications but suitable for offshore fixed and mobile installations.

The test data obtained, when used in conjunction with published fire test standards, permit subsequent classification of the divisional elements based on the duration of their performance against specified criteria.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 834-1:1999, Fire-resistance tests — Elements of building construction — Part 1: General requirements](#)

[ISO 13943, Fire safety — Vocabulary](#)