

SVENSK STANDARD

SS-EN 15004-10:2017



Fastställt/Approved: 2017-12-21
Publicerad/Published: 2017-12-29
Utgåva/Edition: 2
Språk/Language: engelska/English
ICS: 13.220.10; 13.220.20

Fasta släcksystem – Gasläcksystem – Del 10: Fysiska egenskaper och systemutförande avseende gassläckssystem för IG-541 släckmedel (ISO 14520-15:2015, modifierad)

Fixed firefighting systems – Gas extinguishing systems – Part 10: Physical properties and system design of gas extinguishing systems for IG-541 (ISO 14520-15:2015, modified)



Standarder får världen att fungera

SIS (Swedish Standards Institute) är en fristående ideell förening med medlemmar från både privat och offentlig sektor. Vi är en del av det europeiska och globala nätverk som utarbetar internationella standarder. Standarder är dokumenterad kunskap utvecklad av framstående aktörer inom industri, näringsliv och samhälle och befrämjar handel över gränser, bidrar till att processer och produkter blir säkrare samt effektiviserar din verksamhet.

Delta och påverka

Som medlem i SIS har du möjlighet att påverka framtida standarder inom ditt område på nationell, europeisk och global nivå. Du får samtidigt tillgång till tidig information om utvecklingen inom din bransch.

Ta del av det färdiga arbetet

Vi erbjuder våra kunder allt som rör standarder och deras tillämpning. Hos oss kan du köpa alla publikationer du behöver – allt från enskilda standarder, tekniska rapporter och standardpaket till handböcker och onlinetjänster. Genom vår webbtjänst e-nav får du tillgång till ett lättnavigerat bibliotek där alla standarder som är aktuella för ditt företag finns tillgängliga. Standarder och handböcker är källor till kunskap. Vi säljer dem.

Utveckla din kompetens och lyckas bättre i ditt arbete

Hos SIS kan du gå öppna eller företagsinterna utbildningar kring innehåll och tillämpning av standarder. Genom vår närhet till den internationella utvecklingen och ISO får du rätt kunskap i rätt tid, direkt från källan. Med vår kunskap om standarders möjligheter hjälper vi våra kunder att skapa verklig nytta och lönsamhet i sina verksamheter.

Vill du veta mer om SIS eller hur standarder kan effektivisera din verksamhet är du välkommen in på www.sis.se eller ta kontakt med oss på tel 08-555 523 00.



Standards make the world go round

SIS (Swedish Standards Institute) is an independent non-profit organisation with members from both the private and public sectors. We are part of the European and global network that draws up international standards. Standards consist of documented knowledge developed by prominent actors within the industry, business world and society. They promote cross-border trade, they help to make processes and products safer and they streamline your organisation.

Take part and have influence

As a member of SIS you will have the possibility to participate in standardization activities on national, European and global level. The membership in SIS will give you the opportunity to influence future standards and gain access to early stage information about developments within your field.

Get to know the finished work

We offer our customers everything in connection with standards and their application. You can purchase all the publications you need from us - everything from individual standards, technical reports and standard packages through to manuals and online services. Our web service e-nav gives you access to an easy-to-navigate library where all standards that are relevant to your company are available. Standards and manuals are sources of knowledge. We sell them.

Increase understanding and improve perception

With SIS you can undergo either shared or in-house training in the content and application of standards. Thanks to our proximity to international development and ISO you receive the right knowledge at the right time, direct from the source. With our knowledge about the potential of standards, we assist our customers in creating tangible benefit and profitability in their organisations.

If you want to know more about SIS, or how standards can streamline your organisation, please visit www.sis.se or contact us on phone +46 (0)8-555 523 00



Europastandarden EN 15004-10:2017 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 15004-10:2017.

Denna standard ersätter SS-EN 15004-10:2008, utgåva 1.

The European Standard EN 15004-10:2017 has the status of a Swedish Standard. This document contains the official version of EN 15004-10:2017.

This standard supersedes the Swedish Standard SS-EN 15004-10:2008, edition 1.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00. Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), telephone +46 8 555 520 00. Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Fasta släckmedel, Sprinkler och Gasläcksystem, SIS/TK 360/AG 03.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på www.sis.se - där hittar du mer information.

EUROPEAN STANDARD

EN 15004-10

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2017

ICS 13.220.20

Supersedes EN 15004-10:2008

English Version

Fixed firefighting systems - Gas extinguishing systems -
Part 10: Physical properties and system design of gas
extinguishing systems for IG-541 (ISO 14520-15:2015,
modified)

Installations fixes de lutte contre l'incendie -
Installations d'extinction à gaz - Partie 10 : Propriétés
physiques et conception des systèmes pour agent
extincteur IG-541 (ISO 14520-15:2015, modifiée)

Ortsfeste Brandbekämpfungsanlagen - Löschanlagen
mit gasförmigen Löschmitteln - Teil 10: Physikalische
Eigenschaften und Anlagenauslegung für Löschmittel
IG-541 (ISO 14520-15:2015, modifiziert)

This European Standard was approved by CEN on 25 September 2017.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents		Page
European foreword		3
1	Scope.....	4
2	Normative references.....	4
3	Terms and definitions	4
4	Characteristics and uses.....	4
4.1	General.....	4
4.2	Use of IG-541 systems.....	5
5	Safety of personnel.....	8
6	System design	9
6.1	Fill pressure	9
6.2	Superpressurization	10
6.3	Extinguishant quantity.....	10
7	Environmental Properties.....	10

European foreword

This document (EN 15004-10:2017) has been prepared by Technical Committee CEN/TC 191 “Fixed firefighting systems”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2018, and conflicting national standards shall be withdrawn at the latest by June 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 15004-10:2008.

The text of the International Standard ISO 14520-15:2015 from Technical Committee ISO/TC 21 “Equipment for fire protection and firefighting” of the International Organization for Standardization (ISO) has been taken over as a European Standard by Technical Committee CEN/TC 191 “Fixed firefighting systems”, the secretariat of which is held by BSI, with common modifications which are indicated by a straight line in the margin of the text.

This European Standard will consist of the following parts, under the general title *Fixed firefighting systems – Gas extinguishing systems*:

- *Part 1: Design, installation and maintenance;*
- *Part 2: Physical properties and system design of gas extinguishing systems for FK-5-1-12 extinguishant;*
- *Part 3: Physical properties and system design of gas extinguishing systems for HCFC Blend A extinguishant;*
- *Part 4: Physical properties and system design of gas extinguishing systems for HFC 125 extinguishant;*
- *Part 5: Physical properties and system design of gas extinguishing systems for HFC 227ea extinguishant;*
- *Part 6: Physical properties and system design of gas extinguishing systems for HFC 23 extinguishant;*
- *Part 7: Physical properties and system design of gas extinguishing systems for IG-01 extinguishant;*
- *Part 8: Physical properties and system design of gas extinguishing systems for IG-100 extinguishant;*
- *Part 9: Physical properties and system design of gas extinguishing systems for IG-55 extinguishant;*
- *Part 10: Physical properties and system design of gas extinguishing systems for IG-541 extinguishant.*

The International Standards ISO 14520-2 and ISO 14520-11, which dealt with CF₃I and HFC 236fa extinguishants, respectively, have not been implemented by CEN, as CF₃I is only valid for local application and HFC 236fa extinguishant is only applicable for portable fire extinguishers and local application, respectively, which is not covered by the scope.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

SS-EN 15004-10:2017 (E)**1 Scope**

1.1 This document specifies requirements for gaseous fire-extinguishing systems, with respect to the IG-541 extinguishant. It includes details of physical properties, specification, usage and safety aspects.

1.2 This document is applicable for systems operating at nominal pressures of 150 bar, 200 bar and 300 bar at 15 °C. This does not preclude the use of other systems, although design data for other pressures are not available at this time.

2 Normative references

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

EN 15004-1:2017, *Fixed firefighting systems - Gas extinguishing systems - Part 1: Design, installation and maintenance (ISO 14520-1:2006, modified)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 15004-1 apply.

4 Characteristics and uses**4.1 General**

IG-541 is a colourless, odourless, electrically non-conductive gas with a density approximately the same as that of air.

It is an inert gas mixture consisting nominally of 52 % nitrogen, 40 % argon and 8 % carbon dioxide. The mixture specification for IG-541 (based on 8 % carbon dioxide with tolerance of ± 5 %) is as follows:

- a) carbon dioxide percentage range 7,6 % to 8,4 %;
- b) argon percentage range 37,2 % to 42,8 %;
- c) nitrogen percentage range 48,8 % to 55,2 %.

Individual container or batch analysis is based on carbon dioxide measurement only.

Extinguishant IG-541 shall comply with the specification shown in Table 1.

The physical properties are shown in Table 2.

IG-541 extinguishes fires mainly by a reduction of oxygen concentration in the atmosphere of the hazard enclosure.