

SVENSK STANDARD

SS-EN 13795-2:2019



Fastställt/Approved: 2019-04-11
Utgåva/Edition: 2
Språk/Language: engelska/English
ICS: 11.140

Operationskläder och draperingsmaterial – Krav och testmetoder – Del 2: Specialarbetsdräkter

Surgical clothing and drapes – Requirements and test methods – Part 2: Clean air suits

This preview is downloaded from www.sis.se. Buy the entire standard via <https://www.sis.se/std-80011188>

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 13795-2:2019 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 13795-2:2019.

Denna standard ersätter SS-EN 13795:2011+A1:2013, utgåva 1.

The European Standard EN 13795-2:2019 has the status of a Swedish Standard. This document contains the official version of EN 13795-2:2019.

This standard supersedes the SS-EN 13795:2011+A1:2013, 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 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, who can also provide general information about Swedish and foreign standards.

Denna standard är framtagen av kommittén för Operationstextilier, SIS/TK 333.

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 13795-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2019

ICS 11.140

Supersedes EN 13795:2011+A1:2013

English Version

Surgical clothing and drapes - Requirements and test methods - Part 2: Clean air suits

Vêtements et champs chirurgicaux - Exigences et méthodes d'essai - Partie 2 : Tenues de bloc

Operationsbekleidung und -abdecktücher - Anforderungen und Prüfverfahren - Teil 2: Rein-Luft-Kleidung

This European Standard was approved by CEN on 24 October 2018.

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: Rue de la Science 23, B-1040 Brussels

SS-EN 13795-2:2019 (E)

Contents		Page
European foreword		4
Introduction		6
1	Scope	7
2	Normative references	7
3	Terms and definitions	7
4	Performance requirements	10
5	Manufacturing and processing requirements and documentation	11
6	Information to be supplied with the product	11
6.1	Information to be supplied to the user	11
6.2	Information to be supplied to the processor	11
Annex A (normative) Testing		12
A.1	General	12
A.2	Test methods and conformance	12
A.2.1	Test method for evaluation of cleanliness microbial/bioburden	12
A.2.2	Test method for evaluation of particle release	12
A.2.3	Test method for evaluation of bursting strength in dry state	13
A.2.4	Test method for evaluation of tensile strength in dry state	13
A.2.5	Test method for evaluation of dry microbial penetration	13
A.2.6	Test method for evaluation of biocompatibility	13
A.3	Treatment of results	13
Annex B (informative) Rationales		15
B.1	General	15
B.2	Cleanliness – microbial	15
B.3	Particle release	15
B.4	Bursting strength – dry	16
B.5	Tensile strength – dry	16
B.6	Resistance to microbial penetration – dry	16
B.7	Labelling	17
B.8	Treatment of results	17
B.9	Flammability	18
B.10	Electrostatic discharge	18
Annex C (informative) Environmental aspects		19
Annex D (informative) Guidance to users for selecting products		20

D.1	General	20
D.2	Performance levels	20
D.3	Functional design aspects	20
D.3.1	Size	20
D.3.2	Accessories	20
D.4	Comfort	21
D.4.1	General	21
D.4.2	Clean air suits	21
D.4.3	Practical trials	21
Annex E (informative) Functional design		22
E.1	General	22
E.2	Test method for measuring source strength	22
E.2.1	Dispersal chamber	22
E.2.2	Operating room	23
E.2.3	Measuring bacteria carrying airborne particles	23
E.2.4	Source strength	23
E.3	Use of source strength measurements	24
Annex ZA (informative) Relationship between this European standard and the essential requirements of Directive 93/42/EEC [1993 OJ L 169] aimed to be covered		26
Bibliography		27

SS-EN 13795-2:2019 (E)

European foreword

This document (EN 13795-2:2019) has been prepared by Technical Committee CEN/TC 205 “Non-active medical devices”, the secretariat of which is held by DIN.

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 October 2019, and conflicting national standards shall be withdrawn at the latest by October 2019.

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.

Together with EN 13795-1:2019, this document supersedes EN 13795:2011+A1:2013.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

EN 13795 consists of the following parts, under the general title *Surgical clothing and drapes — Requirements and test methods*:

- *Part 1: Surgical drapes and gowns*
- *Part 2: Clean air suits*

The following changes have been introduced:

- a) Restriction to the product ‘clean-air suit’ in this Part of the EN 13795 standard series (for surgical drapes and gowns see EN 13795-1);
- b) Alignment of the Standard title and the Scope;
- c) Revision of the Normative references and the Bibliography;
- d) Alignment of the Clause ‘Terms and definitions’;
- e) Revision of the performance requirements in Table 1;
- f) Movement of former Clause 5 ‘Testing’ to A.1 and editorial alignment;
- g) Revision of Clause ‘Manufacturing and processing requirements’ by adding of documentary requirements and a section for the introduction of a QM system;
- h) Enhancement and improved structuring of Clause ‘Information to be supplied by the manufacturer or processor’;
- i) Deletion of the former Annex A ‘Details of significant changes between this document and the previous edition’;
- j) Complete revision and extension of Annex A ‘Testing’ (formerly Annex B ‘Test methods’);

- k) Inclusion of a new Annex B 'Rationales' which provides precise reasons for the essential requirements of this document and which is intended for users aware of the subject of this document, but who did not join whose development;
- l) Deletion of the former Annex C 'Prevention of infection in the operating room';
- m) Inclusion of a new Annex C 'Environmental aspects';
- n) Inclusion of a new Annex D 'Guidance to users for selecting products';
- o) Inclusion of a new Annex E 'Functional design';
- p) Revision of Annex ZA on the relationship to the Medical Device Directive (93/42/EEC);
- q) Complete editorial revision.

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 13795-2:2019 (E)

Introduction

Clean air suits are used to minimize the spread of infective agents to patients' surgical sites and equipment, through prevention of dispersal of bacteria-carrying skin scales from the operating room staff, thereby helping to prevent post-operative surgical site infections.

The performance required of working clothes for clinical staff varies with, for example, the type and duration of the procedure, and the susceptibility of the patient to infection. In infection-prone invasive operations, a clean air suit can contribute to reduction of infection risks, in conjunction with ventilation and correct working methods.

This document is intended to assist the communication between manufacturers and third parties with regard to material or product characteristics and performance requirements.

Therefore, Annex B provides comprehensive information on characteristics, measurement of performance and performance requirements. Annex C clarifies that this document does not include environmental provisions. Annex D explains the concept of performance levels and provides guidance to users for selecting products. Annex E gives information on the impact of the design of clean air suits and the source strength concept as an evaluation means for the impact of the entire clothing (including clean air suits) on particle release.

This document focuses on Essential Requirements arising from the Medical Device Directive 93/42/EEC, which are applicable to clean air suits. The requirements and guidance in this document are expected to be of help to manufacturers and users when designing, processing, assessing and selecting products. It is the intention of this document to ensure the same level of safety from single-use and reusable clean air suits throughout their useful life.

1 Scope

This document specifies information to be supplied to users and third party verifiers in addition to the usual labelling of medical devices (see EN 1041 and EN ISO 15223-1), concerning manufacturing and processing requirements.

This document gives information on the characteristics of single-use and reusable clean air suits used as medical devices for clinical staff, intended to prevent the transmission of infective agents between clinical staff and patients during surgical and other invasive procedures.

This document specifies test methods for evaluating the identified characteristics of clean air suits and sets performance requirements for these products.

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.

EN 29073-3:1992, *Textiles - Test methods for nonwovens - Part 3: Determination of tensile strength and elongation*

EN ISO 139:2005,¹ *Textiles — Standard atmospheres for conditioning and testing (ISO 139:2005 + Amd. 1:2011)*

EN ISO 9073-10:2004, *Textiles - Test methods for nonwovens - Part 10: Lint and other particles generation in the dry state (ISO 9073-10:2003)*

EN ISO 10993-1:2009, *Biological evaluation of medical devices - Part 1: Evaluation and testing within a risk management process (ISO 10993-1:2009)*

EN ISO 11737-1:2018, *Sterilization of medical devices — Microbiological methods — Part 1: Determination of a population of microorganisms on products (ISO 11737-1:2018)*

EN ISO 13938-1:1999, *Textiles - Bursting properties of fabrics - Part 1: Hydraulic method for determination of bursting strength and bursting distension (ISO 13938-1:1999)*

EN ISO 22612:2005, *Clothing for protection against infectious agents - Test method for resistance to dry microbial penetration (ISO 22612:2005)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

¹ Impacted by EN ISO 139:2005+A1:2011