BS EN ISO 13293:2012



BSI Standards Publication

Recreational diving services — Requirements for gas blender training programmes

NO COPYING WITHOUT BSI PERMISSION EXCEPT AS PERMITTED BY COPYRIGHT LAW



This British Standard is the UK implementation of EN ISO 13293:2012.

The UK participation in its preparation was entrusted to Technical Committee SVS/2/4, Recreational diving services.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2012. Published by BSI Standards Limited 2012.

ISBN 978 0 580 67959 9

ICS 03.080.30; 03.100.30; 03.200; 97.220.40

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 November 2012.

Amendments issued since publication

Date Text affected

EUROPÄISCHE NORM

November 2012

ICS 03.080.30; 03.200

English Version

Recreational diving services - Requirements for gas blender training programmes (ISO 13293:2012)

Services relatifs à la plongée de loisirs - Exigences relatives aux programmes de formation à la préparation des mélanges gazeux (ISO 13293:2012)

Dienstleistungen des Freizeittauchens - Anforderungen an Ausbildungsprogramme für Gas Blender (ISO 13293:2012)

This European Standard was approved by CEN on 31 October 2012.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

This document (EN ISO 13293:2012) has been prepared by Technical Committee ISO/TC 228 "Tourism and related services" in collaboration with Technical Committee CEN/TC 329 "Tourism services", 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 May 2013, and conflicting national standards shall be withdrawn at the latest by May 2013.

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

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Endorsement notice

The text of ISO 13293:2012 has been approved by CEN as a EN ISO 13293:2012 without any modification.

Annex ZA (informative) A-deviations

A-deviation: National deviation due to regulations, the alteration of which is for the time being outside the competence of the CEN-CENELEC national member.

This European Standard does not fall under any Directive of the EU.

In the relevant CEN-CENELEC countries these A-deviations are valid instead of the provisions of the European Standard until they have been removed.

Country	National Regulation
France	Sport Code, Livre III: Pratique sportive, Titre II: Obligations liées aux activités sportives, Section 3: Etablissements qui organisent la pratique ou dispensent l'enseignement de la plongée subaquatique, Sous-section 1: Etablissements qui organisent et dispensent l'enseignement de la plongée subaquatique à l'air, defines the safety and technical requirements for the scuba diving service providers. This regulation determines some parameters for the diver himself, the scuba diving instructor, but also for the service supervising.
	The French Sport Code is strengthened by its recognition at European level for the scuba instructors: a permanent European derogation was granted to France by a Commission Decision [MARKT/D4/8339/200-EN) dated 2000-07-25. The divers' qualifications remain very close to the problematic.
Clause 2. Normative references	According to the CEN/CENELEC Internal Regulations, Part 3, standards listed under this chapter are meant to be necessary for the proper application of the standard.
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. []	In France, the Sport Code, Livre III: Pratique sportive, Titre II: Obligations liées aux activités sportives, Section 3: Etablissements qui organisent la pratique ou dispensent l'enseignement de la plongée subaquatique, Soussection 1: Etablissements qui organisent et dispensent l'enseignement de la plongée subaquatique à l'air, defines the safety and technical
ISO 24802-1, Recreational Diving Services — Safety related minimum requirements for the training of recreational scuba instructors — Part 1: Level 1	requirements for the scuba diving service providers. This regulation determines some parameters for the diver himself, the scuba diving instructor, but also for the service supervising. This regulation has a double aim:

BS EN ISO 13293:2012 EN ISO 13293:2012 (E)

This is a preview of "BS EN ISO 13293:2012". Click here to purchase the full version from the ANSI store.

ISO 24802-2, Recreational Diving Services — Safety related minimum requirements for the training of recreational scuba instructors — Part 2: Level 2

ISO 24803, Recreational Diving Services — Requirements for recreational diving service providers

[...]

a) quality of services provided and,
 mainly,

b) guarantee of safety for the divers.

ISO 24802-1, -2, and ISO 24803, as presented for divers are incompatible with the French regulation.

Taking into account the diversified requirements of the activity in France, the French regulation is based on an experiences' progression graded on 5 levels. These 5 levels certify the quality and the safety of the service. The ISO standard formulation is incompatible with the technical and safety rules providing by the establishments organizing the training of recreational scuba divers as stated by the *the Sport Code, Livre III, Titre II, Section 3, Sous-section 1.*

Con	ntents	Page
	word	
Introd	duction	
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Competencies of gas blenders	2
5 5.1 5.2 5.3 5.4 5.5 5.6 5.7	Theoretical knowledge Purpose of gas blender training Gas blending and delivery methods Gases and gas blends Considerations for elevated oxygen levels Cylinder marking and handling Gas analysis and record keeping Gas blending calculations	3345
6	Practical skills	5
7	Gas blender instructors	6
8	Qualification	6
Anne	ex A (informative) Background information for gas blender training programmes	7
Biblio	ography	8

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 13293 was prepared by Technical Committee ISO/TC 228, Tourism and related services.

Introduction

The requirements specified in this International Standard are minimum requirements; they do not preclude the provision of additional training or the assessment by a service provider of additional competencies. This International Standard represents a tool for comparison of existing (or future) qualifications of gas blenders who want to mix gases for diving purposes.

ICU 13303-3013/E/

This is a preview of "BS EN ISO 13293:2012". Click here to purchase the full version from the ANSI store.

Recreational diving services — Requirements for gas blender training programmes

1 Scope

This International Standard specifies requirements for gas blender training programmes and the competencies required of an individual in order to obtain a gas blender certificate from a training organization, attesting that he/she has met or exceeded the requirements specified in this International Standard.

This International Standard specifies two levels of gas blender qualification, as follows:

- Level 1 gas blender;
- Level 2 gas blender.

This International Standard recognizes that a training programme can be organized and delivered in a modular way.

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 11107:2009, Recreational diving services — Requirements for training programmes on enriched air nitrox (EAN) diving

ISO 24802-1, Recreational diving services — Safety related minimum requirements for the training of scuba instructors — Part 1: Level 1

ISO 24802-2, Recreational diving services — Safety related minimum requirements for the training of scuba instructors — Part 2: Level 2

3 Terms and definitions

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

3.1

training organization

entity which provides training in accordance with this International Standard and awards qualifications, and which is responsible for the implementation and quality management of such training

NOTE Can include scuba diving federations and scuba diver training agencies.

3.2

enriched air nitrox

FΔN

mixture of nitrogen and oxygen with more than 21 % oxygen

3.3

helium-based gas mixture

helium-based gas blend

mixture of oxygen and helium, or breathable mixture of oxygen, helium and nitrogen

3.4

trimix

mixture of oxygen, helium and nitrogen