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English version

## Recreational Diving Services - Safety related minimum requirements for the training of scuba instructors - Part 2: Level 2

Services relatifs à la plongée de loisirs - Exigences minimales liées à la formation des moniteurs de plongée subaquatique - Partie 2: Niveau 2

Dienstleistungen des Freizeittauchens - Sicherheitsrelevante Mindestanforderungen an die Ausbildung von Tauchausbildern - Teil 2: Ausbildungsstufe 2

This European Standard was approved by CEN on 10 December 2003.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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**Contents**

page

Foreword.....	3
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions.....	5
4 Competencies of a scuba instructor at level 2 .....	6
5 Prerequisites .....	6
5.1 Practical experience .....	6
5.2 Health requirements .....	6
6 Scuba instructor candidate information.....	6
7 Required theoretical knowledge.....	7
8 Personal scuba skills .....	7
9 Theoretical teaching skills .....	7
10 Teaching and supervision of scuba skills.....	8
11 Emergency procedures .....	8
11.1 Diver Rescue .....	8
11.2 First Aid.....	8
11.3 Oxygen Administration .....	8
12 Scuba instructor-trainers .....	9
13 Certification .....	9
13.1 Minimum age .....	9
13.2 Minimum practical experience.....	9
13.3 Theoretical knowledge .....	9
13.4 Teaching techniques .....	9
13.5 Teaching and supervision of scuba skills.....	10
13.6 Supervision and guidance of diving activities.....	10
13.7 Emergency procedures .....	10
Annex A (informative) Example of assessment of teaching and Evaluation Competencies when Teaching a Level 3 Scuba Diver Course.....	11
Annex B (informative) A–deviations .....	14

## Foreword

This document (EN 14413-2:2004) has been prepared by 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 August 2004, and conflicting national standards shall be withdrawn at the latest by August 2004.

Annexes A and B are informative.

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

## Introduction

The European Standards relating to recreational diving services, have been prepared by CEN/TC 329/WG 3 "Recreational Diving Services", with the aim of establishing a series of specifications for safety practices and the provision of services.

Therefore these standards specify:

- necessary levels of experience and competency of scuba divers and scuba instructors,
- safety practices and requirements for recreational scuba diving service providers appropriate to the different diving levels.

In any case, they cannot substitute for nor impose upon legal requirements, the alteration of which is outside the competence of the CEN/CENELEC members.

The European Standard EN 14413 consists of the following parts:

- EN 14413-1, *Recreational Diving Services - Safety related minimum requirements for the training of scuba instructors - Part 1: Level 1*
- EN 14413-2, *Recreational Diving Services - Safety related minimum requirements for the training of scuba instructors - Part 2: Level 2.*

The requirements specified are minima; they do not preclude the provision of additional training or the assessment by a training organisation of additional competencies. The above mentioned European Standards represent a tool for comparison of existing (or future) qualifications of scuba instructors. In no way do they represent a course programme nor do they imply that course programs and scuba instructor certifications issued by different nations or organisations must necessarily correspond to these levels.

## 1 Scope

This European Standard specifies the competencies that a scuba instructor ought to achieve in order for a training organization to award the scuba instructor certification indicating that he has met or exceeded scuba instructor level 2 and specifies assessment of these competencies.

It also specifies conditions under which training ought to be provided, in addition to the general requirements for recreational diving service provision in accordance with EN 14467.

This European Standard applies only to contractual training and certification in recreational scuba diving.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 14153-1, *Recreational Diving Services - Safety related minimum requirements for the training of recreational scuba divers - Part 1: Level 1 –Supervised Diver*

EN 14153-2, *Recreational Diving Services - Safety related minimum requirements for the training of recreational scuba divers - Part 2: Level 2 – Autonomous Diver*

EN 14153-3:2003, *Recreational Diving Services - Safety related minimum requirements for the training of recreational scuba divers - Part 3: Level 3 – Dive Leader*

EN 14413-1, *Recreational Diving Services - Safety related minimum requirements for the training of scuba instructors - Part 1: Level 1*

EN 14467, *Recreational diving services – Requirements for recreational scuba diving service providers*

## 3 Terms and definitions

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

### 3.1

#### **training organisation**

entity providing recreational scuba diving training systems and certification, and which is responsible for the implementation and quality management of scuba diver training

NOTE Entity may include scuba diving federations and scuba diver training agencies.

### 3.2

#### **certification**

confirmation that a student has completed scuba diver training which fulfils all requirements in accordance with this European Standard, as issued by training organizations

### 3.3

#### **confined water**

swimming pool with a depth appropriate to the activity or body of water that offers similar conditions with regard to visibility, depth, water movement and access

**3.4**

**open water**

body of water significantly larger than a swimming pool offering conditions typical of a natural body of water encountered in the region

**4 Competencies of a scuba instructor at level 2**

A level 2 scuba instructor shall be trained such that when assessed in accordance with clause 13 they are deemed to be qualified to:

- plan, organise and conduct dives and lead other recreational scuba divers of all levels in open water, including rescue activities,
- teach and assess students up to scuba diver level 1, level 2 and level 3 in accordance with EN 14153-1, EN 14153-2 and EN 14153-3 respectively ,
- supervise level 1 scuba instructors in accordance with EN 14413-1,
- plan, organise and conduct scuba diver training courses,
- with suitable additional training or experience to plan, organise and conduct appropriate speciality or diving operational activities.

Prior to certification the scuba instructor candidate shall be informed that if diving and environmental conditions are significantly different from those previously experienced, in order to meet the above mentioned competencies, an appropriate orientation with regard to local diving and environmental conditions is required.

**5 Prerequisites**

**5.1 Practical experience**

The scuba instructor-trainer shall ensure that scuba instructor candidates have certification to at least scuba diver level 3 – “Dive Leader” with additional practical experience gained after level 3 certification in accordance with EN 14153-3 prior to their assessment in accordance with clause 13.

**5.2 Health requirements**

Scuba instructor candidates shall be medically screened as suitable for diving in accordance with procedures laid down by a competent medical authority. If such procedures are not specified scuba instructor candidates shall provide evidence of a diver medical examination not older than one year unless the medical doctor who has carried out the examination specifies longer validity.

**6 Scuba instructor candidate information**

Information in accordance with EN 14467 shall be made available to the students prior to, or during the first class meeting.

## 7 Required theoretical knowledge

Scuba instructor candidates shall have extensive theoretical knowledge regarding the scuba skills specified in EN 14153-1 EN 14153-2 and EN 14153-3 and sufficient knowledge to be able to give presentations on topics from EN 14153-1, EN 14153-2 and EN 14153-3:2003, clause 7.

Additionally scuba instructor candidates shall have appropriate knowledge of the following issues:

- medical and psychological contraindications for scuba diving,
- the training requirements for scuba diver level 1 in accordance with EN 14153-1, level 2 in accordance with EN 14153-2 and level 3 in accordance with EN 14153-3 and level 1 scuba instructor in accordance with to EN 14413-1,
- the duty of care of a scuba instructor,
- safety regulations affecting scuba diving service provision (e.g. regulations affecting schools, centres, clubs, organisations),
- methods of safely filling diving cylinders including relevant local regulations concerning cylinder working pressures and testing requirements,
- relationships and communication with relevant public authorities (e.g. police, customs, rescue organisations, fire-brigade),
- administration within a diving centre / club / organisation with regard to diving and training activities,
- teaching principles and methodology,
- selection of dive sites using appropriate navigational aids (e.g. maps, navigational charts, tide tables).

## 8 Personal scuba skills

Scuba instructor candidates shall be able to perform all of the personal scuba skills from level 1, level 2 and level 3 scuba diver in accordance with EN 14153-1, EN 14153-2 and EN 14153-3, respectively to demonstration quality.

## 9 Theoretical teaching skills

Scuba instructor candidates shall be able to conduct lesson preparation, planning and delivery of theoretical teaching presentations.

## **10 Teaching and supervision of scuba skills**

Scuba instructor candidates shall be able to conduct in-water lessons for students at level 1, level 2 and level 3 from the topics outlined in EN 14153-1, EN 14153-2 and EN 14153-3. Assessment shall include activities demonstrating skills relevant to confined and open water. The open water activities shall be performed at an open water site representative of local conditions.

Lesson elements to be assessed shall include:

- preparation,
- planning,
- briefing and debriefing,
- group control and supervision,
- skill demonstration,
- problem recognition and solving,
- student evaluation.

## **11 Emergency procedures**

### **11.1 Diver Rescue**

Scuba instructor candidates shall be competent in diver rescue skills including:

- recognition of emergency situations (e.g. loss of breathing gas supply, lack of response),
- controlled casualty recovery from depth,
- effective emergency surface actions,
- casualty recovery from the water,
- emergency situation management including co-ordination with emergency services in accordance with local emergency procedures.

### **11.2 First Aid**

Scuba instructor candidates shall be competent in First-Aid and Cardio Pulmonary Resuscitation.

### **11.3 Oxygen Administration**

Scuba instructor candidates shall be competent in the emergency administration of oxygen. This shall include knowledge of the medical principles involved and practical use of an emergency oxygen unit.



## 12 Scuba instructor-trainers

Scuba instructor-trainers shall be responsible for instructor training and certification.

Scuba instructor-trainers shall be scuba instructors of senior standing and of higher qualification than a level 2 scuba instructor and shall have received specific training in the education and development of scuba instructors.

Scuba instructor-trainers shall have an extensive knowledge of pedagogy and relevant educational systems and shall be qualified and sanctioned by a training organisation or competent public authority as being able to teach and evaluate scuba instructors.

Scuba instructor-trainers may take the role of trainers or examiners of scuba instructor candidates in accordance with the procedures defined by such training organisations or competent public authorities.

The process of training and certification of scuba instructor candidates shall involve at least one scuba instructor-trainer and one level 2 scuba instructor of senior standing.

## 13 Certification

### 13.1 Minimum age

The minimum age for receiving certification as level 2 scuba instructor shall be 18 years.

### 13.2 Minimum practical experience

Scuba instructor candidates shall have met all requirements for a level 1 scuba instructor in accordance with EN 14153-1 and a level 2 scuba instructor in accordance with this European Standard prior to certification.

Scuba instructor candidates shall have gained teaching experience by playing the role of an instructor in a structured series of training sessions (in the classroom and in confined and open water) which will expose them to a comprehensive range of duties and problems they will be expected to encounter once qualified. Situations they will be exposed to should include simulated in-water emergencies, group dynamics and behavioural problems and typical learning difficulties.

Scuba instructor candidates shall have gained sufficient diving experience to demonstrate competency in all of the abilities specified in this European Standard.

### 13.3 Theoretical knowledge

Scuba instructor candidates shall satisfactorily demonstrate to a scuba instructor-trainer knowledge of scuba diving training by taking and passing an examination. This examination shall test theoretical knowledge in accordance with clause 7 and knowledge of skills in accordance with clauses 8, 9, 10 and 11.

### 13.4 Teaching techniques

Scuba instructor candidates shall satisfactorily demonstrate to a scuba instructor-trainer their ability to prepare and present theoretical and practical presentations that are technically correct, of an appropriate content and are delivered in an effective manner suited to the students' needs.

An example for the assessment of teaching and supervision of scuba skills is given in annex A.

### **13.5 Teaching and supervision of scuba skills**

Scuba instructor candidates shall satisfactorily demonstrate to a scuba instructor-trainer their ability to perform, teach and evaluate scuba skills in accordance with to EN 14153-1, EN 14153-2 and EN 14153-3.

This assessment shall include both confined water and open water activities. Scuba instructor candidates shall not be given information in advance of the assessment session on the precise exercise to be used.

An example for the evaluation of teaching and supervision of scuba skills is given in annex A.

### **13.6 Supervision and guidance of diving activities**

Scuba instructor candidates shall demonstrate to a scuba instructor-trainer skills in group control and supervision of students' diving activities including responsible judgement on relevant site criteria such as weather, depth, visibility, water movement and level of supervision required.

### **13.7 Emergency procedures**

Scuba instructor candidates shall demonstrate to a scuba instructor-trainer skills selected from those specified in clause 11 by completing at least one simulated open water rescue.

## Annex A (informative)

### Example of assessment of teaching and Evaluation Competencies when Teaching a Level 3 Scuba Diver Course

Theory lesson	Scuba instructor candidate evaluation areas	Method of assessment
Equipment:  Regulators	<ol style="list-style-type: none"> <li>1) Candidate introduced themselves and the topic and explained the importance/value of subject</li> <li>2) Candidate defined learning objectives (what students should know by end of lesson)</li> <li>3) Candidate outlined content of lesson and how students should participate</li> <li>4) Lesson content (as per EN 14153-3:2003, annex A) - the candidate should:               <ol style="list-style-type: none"> <li>a) Describe what is meant by open circuit scuba, semi-closed circuit scuba and closed circuit scuba</li> <li>b) Explain how an open circuit regulator works</li> <li>c) Describe common regulator design types and the advantages/disadvantages of each</li> <li>d) Describe what is meant by fail-safe with respect to regulators, and the advantages of it</li> <li>e) Explain the purpose of a regulator environmental seal and state when it should be used</li> <li>f) Describe the differences between balanced and unbalanced regulators</li> <li>g) Identify when a regulator requires servicing/inspection and assess basic functionality</li> </ol> </li> <li>5) Information was presented in a logical sequence</li> <li>6) Candidate showed the relationship of information to other knowledge students already possess</li> <li>7) Candidate summarised information as key points, reinforced the value of the information and explained when it would be applied by students</li> <li>8) Candidate used appropriate training aids to explain the subject including sample regulator systems</li> <li>9) Candidate presented the information in a clear manner and involved students by asking questions</li> <li>10) Candidate adapted their teaching method in accordance with students' input and needs</li> <li>11) Candidate tested students' understanding of the information</li> </ol>	Observation of simulated or actual lessons by an scuba instructor-trainer

NOTE The above given example can be applied to any theory presentation with the exception of point 4 which will vary in accordance with the content of the lesson.

Practical lesson	Scuba instructor candidate evaluation areas	Method of assessment
Dive planning and preparation	<ol style="list-style-type: none"> <li>1) Candidate introduced themselves and the topic and explained the importance/value of subject</li> <li>2) Candidate defined learning objectives (what students should be able to do by end of lesson)</li> <li>3) Candidate explained how the practical session will be conducted and describe the students' roles in the lesson</li> <li>4) Candidate described how communications will be made during the session</li> <li>5) Candidate described relevant emergency procedures</li> <li>6) Candidate demonstrated as appropriate how to:               <ol style="list-style-type: none"> <li>a) Conduct environmental and diver assessments, and take other appropriate supervisory steps based on the assessments.</li> <li>b) Prepare an emergency plan appropriate for the diving location and dive team competencies and experience.</li> <li>c) Conduct an appropriate pre-dive briefing for a dive site for assigned dive team.</li> <li>d) Respond to or prevent diver problems appropriately.</li> <li>e) Select and prepare descent/ascent aids.</li> </ol> </li> <li>7) Candidate observed students demonstrate items 6 a – e</li> <li>8) Candidate responded to student problems appropriately and corrected students as necessary</li> <li>9) Candidate ensured that students were properly supervised and monitored during the session</li> <li>10) Candidate presented a debrief following the session which included feedback to students as to their performance compared to the learning objectives, an analysis of problems that occurred and solutions to such problems and reinforced the value and application of the topic</li> </ol>	Observation of simulated or actual lessons by a scuba instructor-trainer

NOTE The above given example can be applied to any practical presentation with the exception of point 6 which will vary in accordance with the content of the presentation.

## Example of Scuba Instructor Level 2 Knowledge

**Topic:** Diving Physics

**Subtopic:** Light, Heat and Sound in Water

The scuba instructor candidate shall be able to answer the following questions. The scuba instructor candidate shall also have a comprehensive understanding of why each of these phenomena occur and the diving related consequences:

- 1) Why does water dissipate body heat faster than air does, and at what rate does it do so?
- 2) What effect does water's ability to dissipate heat have on a diver?
- 3) What does light do when it passes from air into water, or vice-versa, and how does this affect a diver?
- 4) What is refraction?
- 5) Why does sound travel faster in water than in air, and how much faster in water?
- 6) How does the speed of sound in water affect hearing?
- 7) What effect does water turbidity have on visibility?
- 8) How will open water visibility affect student control considerations?
- 9) What training aids may be used to demonstrate the above phenomena?

## Example for level 1 scuba instructor supervision

When supervising a level 1 scuba instructor during a water training session, the level 2 scuba instructor should observe the level 1 scuba instructor and ensure that the following aspects of the session are conducted properly. Any errors that may affect safety must be corrected immediately, and a debriefing session for the level 1 scuba instructor should in any case be conducted in order to provide constructive criticism.

The level 1 scuba instructor might be asked to:

Organise the pre-dive set-up of students' equipment for confined water and open water training.

Co-ordinate student movement and control during confined water and open water training dives.

Supervise students not receiving the immediate attention of the scuba instructor during confined water training.

Account for buddy teams entering and leaving the water by checking them in and out of the water.

Assist a student overcome a learning difficulty in confined water.

Assist in the preparation of an open water training site.

Conduct environmental and diver assessments for supervising divers not in training and include recommendations based on the assessment in a pre dive briefing, and take other appropriate steps based on the assessments.

Conduct an appropriate pre dive briefing for a dive site.

**Annex B**  
(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 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.

**Clause            Deviation**

<b>1</b>	<b>France</b> Decree N 2002-1269 of October 18, 2002 passed for the application of article 43 of the amended law N 84-610 of July 16, 1984 relative to the organisation and promotion of physical and sports activities  It is pointed out that the activity of a scuba instructor is regulated by the above decree and is thus subject to endorsement by the relevant authorities in France.  Moreover, this French decree 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/D4/8339/2000-EN) dated 2000-07-25.
<b>13.1</b>	<b>Portugal</b>  (Alínea a) do Art.º 13º do DL 48365 de 2 de Maio de 1968).  To be able to be certified as diving instructor, candidates should have a minimum age of 21 years old.