

SAFETY AND HYGIENE REGULATIONS



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH
Servei de Prevenció de Riscos Laborals

UNDERWATER ACTIVITIES SCIENTIFIC DIVING

CODE **SHR 901**

Date: **May 2021**

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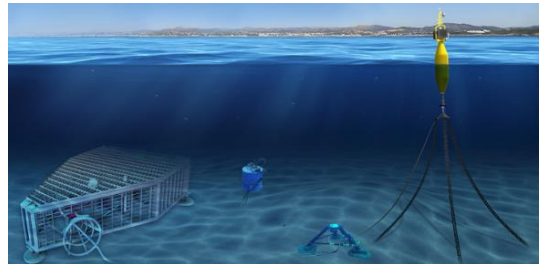
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SAFETY CONDITIONS REGULATED BY ROYAL DECREE 550/2020, OF 2 JUNE, DETERMINING THE SAFETY CONDITIONS OF DIVING ACTIVITIES.

PURPOSE AND FIELD OF APPLICATION

The purpose of these regulations is to provide information on safety conditions for carrying out scientific diving activities in the following circumstances:

- the maximum immersion depth is 40 metres and only air or nitrox are used,
- the divers have direct access to the surface,
- no scheduled decompression is performed and,
- at least two people dive together.



The divers are not allowed

- a) to perform scheduled decompression stops or
- b) to enter caves, grottos, the interior of sunken ships or any other place covered by a roof, whether real or virtual, in which light is lost and the depth of penetration is more than 30 metres.

DEFINITIONS

Scientific diving

Diving whose purpose is exclusively to carry out studies or projects linked to scientific research with a permit from the competent public administration for the research in question.

Scientific team

A group of people who dive underwater to carry out a specific authorised study or scientific project.

Auxiliary staff of the scientific team

Any divers who are not part of the scientific team but are necessary for the activity to be carried out.

SCUBA diving

This is carried out using breathing apparatus carried by the divers, allowing full autonomy of movement.

Surface marker buoys

Buoys that are brightly coloured for easy detection, bearing the international maritime signal flag alpha.



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GENERAL SAFETY CONDITIONS FOR DIVING ACTIVITIES

Divers' state of health (Article 8)

All divers must be responsible for ensuring that they are in a suitable state of health to safely carry out the specific type of dive.

At least every two years, recreational and scientific divers must pass a medical examination that establishes their fitness to dive. It must include at least a spirometry test, an electrocardiogram and an ear, nose and throat examination.



Training needs (Article 9)

Divers must receive suitable training for the type of diving and for the hyperbaric pressure to which they will be exposed.

Exposure to hyperbaric pressure and decompression management (Article 11)

1. All dives must be planned with a system that controls the saturation of the inert gas accumulated in the body and prevents decompression sickness.
2. In order to plan and execute the activity, the guiding criteria should be the information provided by the decompression tables and computers, the physiological factors of the divers, the diving profiles and the environmental conditions.

Atmospheric conditions and state of the sea (Article 13)

1. Diving activities should not be carried out when the atmospheric conditions prevent the normal manoeuvring of the support boat to pick up the divers or when divers are not guaranteed safe entry and exit from land.
2. Dives that require decompression stops in the water should not be carried out when the state of the sea does not allow these stops to be performed safely or the depth to be maintained exactly.
3. Depending on the temperature of the water, divers must have suitable thermal protection.



GENERAL SAFETY CONDITIONS FOR DIVING ACTIVITIES

Signage and safety distance (Article 14)

1. When the diving operations are carried out without a boat or the area where they are carried out is not marked off with buoys, the diver's presence in the water must be indicated by the surface marker buoy included in the minimum equipment.
2. With the exception of the support vessel, all vessels must be kept at a minimum safety distance of 50 metres from the diving area and act in accordance with the rules of the International Regulations for Preventing Collisions at Sea, taking into account factors such as the type of vessel and the sailing speed.

The dive support boat (Article 15)

When divers are under water or on the surface, the boat's engine must remain disengaged from the propeller or switched off, according to the circumstances that the skipper considers appropriate for safety.

When divers are known or suspected to be returning to the surface, the skipper must disengage the engine from the propeller or switch it off according to the circumstances that they consider appropriate for safety, and they must not re-engage the propeller or start the engine until the divers are out of the water.



Skippers of support boats (Article 16)

The skipper of the support vessel must be qualified to use it, carry out their duties as such and meet the following specific obligations:

- a. Prevent manoeuvres or activities on board that could involve a danger to any person related to the diving operations.
- b. Consult the head of the diving team before starting the diving operations and act in coordination with them.
- c. Ensure perfect signage for the diving operations.
- d. Help the divers hoist their equipment on board, remove their diving gear and stow it inside the boat, or delegate these tasks to the crew.
- e. Remain on board the vessel during the diving operations.

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SAFETY REGULATIONS APPLICABLE TO SCIENTIFIC DIVING (Article 50)

1. The safety regulations for recreational diving are applicable to scientific diving activities provided that the dives do not exceed 40 metres in depth, no scheduled decompression is carried out and the divers have direct access to the surface.
During scientific diving operations, only manual, autonomous tools whose power unit is not on the surface or devices intended for the specific investigation may be used. They must be small enough to be moved and operated by a single diver.
2. For diving operations in which the above limits are exceeded, the safety regulations for professional diving will be applicable.
3. The scientific diving activities must be led by the head of the scientific diving team, who will be responsible for evaluating, planning, supervising, controlling and approving the dive plan. The head of the scientific research must appoint the team leader in writing. The team leader must be a diver who is qualified to carry out the operation.
4. The safety regulations of professional diving will be applicable to any auxiliary staff not belonging to the scientific team who are needed to carry out the diving operation.
5. The maximum daily exposure to hyperbaric pressure in scientific diving may not exceed 180 minutes, including the phases of compression, time at the bottom and ascent to the surface. All dives on the same day are added to calculate the total time allowed, which must not be exceeded. If a depth of 10 metres is not exceeded at any time during the day, the maximum daily exposure to hyperbaric pressure may be extended to 300 minutes.

All practitioners of recreational diving (and consequently of scientific diving in the scope of application of this regulation) must have accident and liability insurance, which may cover any type of incident or accident that may occur during the diving activities (Article 18, Point 4).

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Minimum equipment for SCUBA diving (Appendix III, Section 1.1)

The minimum equipment for SCUBA diving is the following:

- a. A buoyancy compensator.
- b. Diving goggles or a face mask.
- c. Fins.
- d. A gas supply with two second stages.
- e. A gas supply pressure control device.
- f. A knife.
- g. A depth gauge.
- h. A timer.
- i. A device or tables for managing decompression.
- j. A safety whistle.
- k. A surface marker buoy.



Notification of the dive (Article 61 and Annex IV)

Natural or legal persons who carry out scientific diving activities must inform the General Directorate of the Merchant Navy that they are practising diving professionally.

They must provide the following information:

- a. Full name or company name of the owner of the activity.
- b. National identity document number, foreigner identification number or tax number, as appropriate.
- c. Registered address.
- d. Contact telephone number.
- e. E-mail address.
- f. Declaration of the activities undertaken.