

EUROPEAN COMPETENCY LEVELS FOR SCIENTIFIC DIVING

There are two different levels of recognition, both of which are professional.

- The European Scientific Diver (ESD);
- The Advanced European Scientific Diver (AESD).

Both awards represent a **minimum agreed training and attestation of competence** which promote scientists to move freely throughout EU countries in order to cooperate on and participate in sub-aquatic research projects involving diving using SCUBA. The equivalence is issued following certification by authorized national agencies. Depth and breathing gas limitations may apply.

The ESD and AESD do not include any regulations such as insurance, medical examinations, employment rules, safety rules, diving limits, rules for recognition of national scientific diving schools, etc. These are covered by national law and European Directives. Neither do the ESD and AESD take account of any specialty requirements by employers. They simply define the minimum basic training of a scientific diver as needed for mobility and as a basic training level on which the employer can build further training modules.

National laws and regulations may regulate training but the minimum competency levels must be maintained.

Scientific diving training for these awards can be given by either one or a combination of more than one of the following:

- a taught course;
- a supervised programme of continuous training and assessment carried out in a nationally recognized institution;
- diving activities under the auspices of a nationally recognized diving training organization:

In all of these cases, all dives must be logged and certified in the candidate's personal log. Any scientific dives must be further certified by the person responsible for diving safety at the scientific research institute for which they were undertaken.

A minimum of 18 years of age is required.

Both the ESD and AESD certificates can be issued to members of permanent staff, contract staff, research students, technicians, and trainees or students of nationally recognized research institutions. The issuing institutions should be members of the national scientific diving authorities that are represented on the ESDP (see Annex 1).

A scientific diver who meets these requirements will obtain either a certificate corresponding either to the ESD or AESD reference level that is valid for a period as stipulated in the national legislation of the Member State of which they are a national. The ESD and AESD reference levels only indicates the training level, and not the current level of diving competence.

THE EUROPEAN SCIENTIFIC DIVER (ESD)

A European Scientific Diver is a diver capable of acting as a member of a scientific diving team. He/she may attain this level by either a course or by in-field training and experience under suitable supervision or by a combination of these two methods.

The ESD must:

→ ***Show proof of basic theoretical knowledge and a basic understanding of:***

- Diving physics and physiology, the causes and effects of diving related illnesses and disorders and their management.
- The specific problems associated with diving to and beyond 20m, calculations of air requirements, correct use of decompression tables.
- Equipment, including personal dive computers and guidelines as to their safe use.
- Emergency procedures and diving casualty management.
- Principles of dive planning.
- Legal aspects and responsibilities relevant to scientific diving in Europe and elsewhere.

→ ***Be fully competent with/in:***

- Diving first aid, including cardio-pulmonary resuscitation (CPR) and oxygen administration to diving casualties.
- SCUBA rescue techniques and management of casualties.
- The use and user maintenance of appropriate SCUBA diving equipment.

→ ***Be fully competent with:***

- Search methods.
- Survey methods, both surface and sub-surface, capable of accurately locating and marking objects and sites.
- The basic use of airbags and airlifts for controlled lifts, excavations and sampling.
- Basic rigging and rope work, including the construction and deployment of transacts and search grids.
- Underwater navigation methods using suitable techniques.
- Recording techniques.
- Acting as surface tender for a roped diver.

- Sampling techniques appropriate to the scientific discipline being pursued.

→ **Show proof of having undertaken 70 open water dives, to include a minimum of:**

- 20 dives with a scientific task of work supervised by a recognized research institution, such as listed above.
- 15 dives deeper than 15m of which of 5 dives deeper than 25m
- 12 dives in the last 12 months, including at least 6 with a scientific task of work.

All evidence must be recorded in nationally acceptable logs, countersigned by suitably qualified persons. None of the above precludes the possible requirement for a practical or theoretical demonstration of any or all of the points shown.

THE ADVANCED EUROPEAN SCIENTIFIC DIVER (AESD)

An Advanced European Scientific Diver is a diver capable of organizing a scientific diving team. He/she may attain this level by either a course or by in-field training and experience under suitable supervision or by a combination of these two methods.

The AESD must:

→ **show proof of theoretical knowledge and a comprehensive understanding of:**

- Diving physics and physiology, the causes and effects of diving related illnesses and disorders and their management.
- The specific problems associated with diving to and beyond 30m, calculations of air requirements, correct use of decompression tables.
- Equipment, including personal dive computers and guidelines as to their safe use.
- Emergency procedures and diving casualty management.
- The principles and practice of dive planning and the selection and assessment of divers.
- Legal aspects and responsibilities relevant to scientific diving in Europe and elsewhere.
- Dive project planning.

→ **Be fully competent with/in:**

- Diving first aid, including CPR and oxygen administration to diving casualties.
- SCUBA rescue techniques and management of casualties.
- The use and user maintenance of appropriate SCUBA diving equipment, including dry suits and full face masks.
- Basic small boat handling, and electronic navigation.
- Supervision of diving operations.

→ **Be fully competent with:**

- Search methods, such as those utilizing free swimming and towed divers together with remote methods suitable for a various range of surface and sub-surface situations.
- Survey methods, both surface and sub-surface, capable of accurately locating and marking objects and sites.
- The basic use of airbags and airlifts for controlled lifts, excavations and sampling.
- Basic rigging and rope work, including the construction and deployment of transects and search grids.
- Underwater navigation methods using suitable techniques.
- Recording techniques.
- Roped/tethered diver techniques and various types of underwater communication systems such as those utilizing visual, aural, physical and electronic methods.
- Sampling techniques appropriate to the scientific discipline being pursued.

→ **Show proof of having undertaken 100 open water dives, to include a minimum of:**

- 50 dives with a scientific task of work, such as listed above.
- 20 dives deeper than 20m of which 10 dives deeper than 29m
- 12 dives in the last 12 months, including at least 6 with a scientific task of work.
- 20 dives in adverse conditions, such as currents, cold water, or moving water.
- 20 dives as an in-water dive leader.

All evidence must be recorded in nationally acceptable logs, countersigned by suitably qualified persons. None of the above precludes the possible requirement for a practical or theoretical demonstration of any or all of the points shown.