

COMMERCIAL SHELLFISH DIVING IN INSHORE WATER – DRAFT FOR CONSULTATION

Diving at Work Regulations 1997

Guidance

1. This guidance provides practical advice and sets out what you have to do to comply with the requirements of the Diving at Work Regulations 1997 (DWR).
2. It applies to all diving projects conducted to collect shellfish where the catch is to be sold to a merchant or direct to a customer:
 - (a) Inshore within United Kingdom territorial waters adjacent to Great Britain (generally 12 nautical miles from the low water line);
 - (b) Inland in Great Britain including in harbours, rivers, lochs and reservoirs.
3. This guidance document does not apply to:
 - (a) Diving projects specifically covered by one of the other ACOPs approved by HSE under the Diving Regulations 1997;
 - (b) Diving on a fish farm, which is covered by the inland/inshore Approved Code of Practice (ACOP)(L104).
4. This edition of the guidance has been revised in order improve safety for shellfish divers, to simplify some of the information, update the references and provide greater consistency with the diving at work ACOPs. This document has also been updated to reflect changes in technology and industry practice. The most significant changes relate to:
 - (a) Approved qualifications. From (12 months from publication) xx xx xxxx HSE will no longer approve recreational diving qualifications for commercial shellfish diving. Prior to this date experienced shellfish divers will be able to apply for approval to continue working. For any new entrants to the industry the minimum approved diving qualification will be HSE SCUBA or equivalent.
 - (b) For electrofishing the minimum approved diving qualification from (12 months from publication) will be HSE SCUBA or equivalent. This will apply to both experienced divers and new entrants to the industry.
 - (c) Dive teams. The minimum dive team size for SCUBA has changed from 3 people to 4.
 - (d) Equipment. There is new guidance on the use of full-face masks, dive computers, diver recovery equipment and personal location beacons.

- (e) Partial pressure of oxygen. The maximum recommended partial pressure of oxygen for breathing gases has been changed to 1.4 bar. This is to ensure consistency with the diving ACOPs.
- (f) The availability of compression chambers. This change is to reflect medical advice and ensure consistency with the diving ACOPs.
- (g) Electrofishing. A new section has been added on electrofishing to reflect current and future trials permitted by the relevant authorities.

DUTY HOLDERS

Clients and others

- 5. Regulation 4 of DWR places a duty on anyone whose actions can affect the safety of the diving project, even though they are not part of the diving team.
- 6. These people include:
 - (a) the client who has placed a contract with a shellfish diving contractor;
 - (b) a master of a vessel from which diving is to take place;
 - (c) and any other person whose actions or activities may affect the safety of the dive.
- 7. Although their responsibilities vary, they all have a duty to co-operate with the diving contractor and supervisor. This is to ensure that DWR is complied with, and that their actions do not affect the safety of the dive team.
- 8. These people should consider carefully the actions required of them to comply with the Regulations. They should, where appropriate, take reasonable steps to ensure that any diving contractor selected is capable of complying with the Regulations.
- 9. Other groups of people, for example harbour masters, may have authority over the dive under regulations other than DWR.

Diving contractors

- 10. Regulation 5 requires that before a diving project can take place there must be a diving contractor. The diving contractor is normally the individual, partnership, company, or other corporate body who employs the divers for the diving project. It may also be a self-employed diver in the dive team. No diving work may go ahead without a diving contractor being appointed.
- 11. The diving contractor is the person who plans and conducts a diving project (which can be made up of a number of diving operations). They have the main responsibility under DWR to ensure a safe diving project. There can only be one diving contractor for the diving project. The diving contractor must be notified to the HSE using [this form](#).

12. Many shellfish diving teams will not be employees of a larger organisation but a group of self-employed divers working with a boat owner or master who assists them. One of those divers however will need to accept and take on the roles and responsibilities of the diving contractor.

13. The diving contractor's responsibilities include ensuring that:

- (a) risks are assessed and a diving project plan is prepared (this will for example, identify the number of divers, supervisors and the diving equipment needed);
- (b) the dive team is aware of the plan;
- (c) there are enough personnel in the dive team to enable the diving project to be carried out safely;
- (d) the personnel are competent and/or qualified;
- (e) the place from which the diving is to be carried out is suitable and safe (including ensuring that vessels have a current coding certificate and have the necessary safety equipment on board);
- (f) supervisors are appointed in writing;
- (g) the team is medically fit to dive;
- (h) there are adequate arrangements for first aid and medical treatment;
- (i) suitable and sufficient plant is provided and that it is correctly certified and maintained;
- (j) diving project records are kept;
- (k) any relevant permits are completed and complied with (for example if diving in a harbour area)
- (l) all other regulations are complied with.

Supervisors

14. A supervisor must be appointed in writing by the diving contractor. More than one supervisor may be appointed in a shellfish diving team but only one may be in control at any one time. The appointed supervisor should have immediate overriding control of all safety aspects of the diving operation.

Competence of supervisor

15. The diving contractor must consider the competence of a person before appointing them as a supervisor. When considering competence, the diving contractor should consider such questions as whether the person is knowledgeable, practical, reliable; capable of conducting the diving operation in a safe manner; capable of managing members of the diving team appropriately and remaining calm and acting

effectively in an emergency. A formal supervisor qualification is one way of demonstrating competence.

16. The diving contractor will be in a good position to decide on a person's competence if the person has worked for the company for some time. If the diving contractor does not know the person, reliable evidence should be sought to establish their experience.

17. A supervisor must be suitably qualified as a diver for the diving techniques to be used in the operation. This means that they must hold an approved diving qualification for the diving operation and for the diving techniques which they are supervising, or have acted as a supervisor of a diving operation in which the same diving techniques were used during the two-year period before xx xx xx. Supervisors do not have to have a certificate of medical fitness to dive unless they also intend to carry out the role of diver.

Responsibility of the supervisor

18. Supervisors are responsible for the operation that they have been appointed to supervise and they should only hand over control to another suitably qualified supervisor appointed for that diving project by the diving contractor.

19. During diving operations from a vessel, the supervisor should liaise with other personnel, such as the vessel master. In such circumstances, the supervisor should recognise that the vessel master has responsibility for the overall safety of the vessel and its occupants.

20. To ensure that a diving operation is carried out safely, supervisors must:

- (a) satisfy themselves that the proposed dive site and the water and weather conditions are suitable;
- (b) satisfy themselves that the personnel they are to supervise are competent and fit to carry out the work required of them;
- (c) ensure that all those who are to dive hold a suitable and valid certificate of diving competence and hold a current diving medical issued by an HSE approved medical examiner of divers;
- (d) ensure that the diving project plan and arrangements for dealing with foreseeable emergencies are clearly understood by all those engaged in the diving operation;
- (e) check that the plant they propose to use is adequate, safe, properly certified and maintained. They should ensure that the plant is adequately inspected by themselves or another competent person before its use;
- (f) maintain proper records of the diving operation. As a minimum this would include a description of the dive, the names of those taking part and their qualifications, the date, time and location, maximum depth attained by each diver and their bottom time or dive time, the decompression schedule being used and a record that the plant has been inspected before the dive; and

- (g) maintain the diving operation record throughout the diving operation for which they are appointed.

Divers

21. Divers have a number of responsibilities under DWR. These include:
- (a) Holding an approved qualification suitable for the work they intend to do;
 - (b) Being competent to work safely;
 - (c) Holding a valid certificate of medical fitness to dive;
 - (d) Complying with the directions of the supervisor and the dive plan;
 - (e) Maintaining a daily record of their dives, which they should keep for at least two years.

Competence of divers

22. The diving contractor and the supervisor must satisfy themselves that a diver has the competences for the specific tasks required during a particular diving operation. On-the-job or other training may be necessary for individuals to gain competence. When an inexperienced diver is gaining experience in a dive team, the other team members and the supervisor will need to be aware of this and provide support.

23. All divers at work must hold an approved diving qualification suitable for the work they intend to do. A list of current approved qualifications is published [here](#).

24. As of xx xx xxxx, the minimum approved diving qualification for new entrants into the shellfish diving industry is HSE SCUBA or equivalent.

25. Divers who had significant experience in shellfish diving using recreational diving qualifications prior to xx xx xxxx may have been issued with a “shellfish experienced diver” certificate from HSE. The details of this scheme are provided in Annex A. This experience route does not apply to divers carrying out electrofishing.

26. All divers carrying out electrofishing will require the HSE SCUBA qualification as of xx xx xxxx.

Medical checks

27. All divers at work must have a current certificate of medical fitness to dive issued by an HSE approved medical examiner of divers, (AMED). The certificate of medical fitness to dive is a statement of the diver’s fitness to perform work underwater and is valid for as long as the doctor certifies, up to a maximum of 12 months. A list of HSE medical examiners is available [here](#).

28. Divers who consider themselves unfit for any reason, for example, fatigue, minor injury, recent medical treatment or who are taking any medication, must inform their supervisor. Even a minor illness, such as a common cold or a dental problem,

can have serious effects on a diver under pressure, and should be reported to the supervisor before the start of a dive. Medications routinely taken may have significant side effects in hyperbaric environments. Divers should not dive if they are under the influence of drugs or alcohol. Supervisors should seek guidance from the diving contractor, their medical adviser or an HSE approved diving doctor if there is doubt about a diver's fitness to dive.

TEAM SIZE AND WORKING PRACTICES

29. The required size of the dive team will depend on the risk assessment which should take into account the number of hours to be worked each day, the type of diving, the diving plant and the techniques to be used, any decompression requirements, and the appropriate number required for safety.

30. When SCUBA diving, the minimum team size required to conduct a dive safely when diving for shellfish is four. The working diver plus three on the surface - a supervisor, a standby diver and a surface person to either tend the working diver or to assist in an emergency. The surface person may be the skipper of the vessel, or additional people may be required. This will be dependent on the risk assessment, and should include the actions to be taken in the event of an emergency including the recovery of an incapacitated diver.

Standby diver

31. A standby diver should be in immediate readiness to provide any necessary assistance to a diver in the water.

32. The standby diver should remain on the surface unless required for an emergency. The standby diver should be dressed to enter the water but need not be wearing a mask or a helmet. This equipment should, however, be immediately to hand. They should not be used for any other task while there is a working diver in the water.

Tenders

33. If a tender is required, then the diving contractor should be satisfied that they are competent. The tender should be familiar with the diving procedures to be used and the contingency and emergency plans for the project. The tender does not have to be a qualified diver, although will need to understand simple diving safety requirements, and be trained in the use of rope signals.

Personnel not employed by the diving contractor

34. Personnel who are not employed by the diving contractor but who are considered for inclusion in the dive team must be competent for the work that they are going to do. They should be familiar with the diving contractor's procedures, rules and the diving plant that is to be used.

Familiarisation

35. When arriving at a dive site before the start of a diving project, all members of the dive team should familiarise themselves with the dive, plant, and any relevant details.

First-aid

36. The diving contractor is responsible for ensuring that enough (at least two) people in the diving project are trained and competent in first aid (including oxygen administration). The risk assessment should identify the first-aid equipment required on site and the number of qualified personnel needed to use it.

37. The risk assessment should consider the type of diving taking place, the size of the team and the distance of the dive site from the emergency services. It is sensible to have more than one person in the team qualified in first aid in case that person becomes injured. Those who are qualified should not hold other important duties which could conflict with the need to administer first aid in an emergency.

Oxygen availability

38. Oxygen should be immediately available at all dive locations. Sufficient gas should be provided for the duration of a transfer of a diver to a recompression chamber, hospital or other place. It should be provided by a tight-fitting mask or by a mouthpiece with nose clip.

39. Pressurised oxygen can fuel a serious fire or cause an explosion. It should therefore be stored and handled correctly. Any gas mixture containing more than 25 per cent oxygen by volume should be handled as if it were pure oxygen.

Communications

40. All divers in the water should have a communication system that allows two-way contact with the supervisor on the surface and vice versa. A hard-wired communication system is preferred because the effectiveness of a through-water communication system can be degraded by acoustic shadow, sediment, air bubbles, turbulence etc. If through water communications are used, then divers should be attached to a permanent surface marker buoy or lifeline so that line signals can be used in the event of communication failure.

41. Scallop divers (in particular) cover a large area of seabed during diving, and it is accepted that being tethered to a boat is not always practicable. In addition, through water communication systems may not be adequate. Divers that are not tended but are “free swimming” must always have a line from them to a permanent surface marker buoy. This will enable two-way emergency communication using rope signals and will enable the supervisor/standby diver to locate the diver quickly in an emergency.

Diving Methods

42. The risk assessment should identify the safety reasons for the choice of equipment i.e. surface supplied diving equipment (SSDE) or SCUBA. The equipment necessary to perform the dive safely and without risk to health depends on the type and location of the dive and should be set out in the diving project plan.

43. The diving contractor should ensure as a minimum that each diver:
- (a) carries an independent secondary source of breathing gas with a contents gauge that can be read by the diver (for example, a bail-out cylinder);
 - (b) is equipped with a means of providing positive buoyancy which will float them on the surface while awaiting recovery. This is in addition to any buoyancy provided by a dry suit;
 - (c) has a submersible depth gauge, timing device (or dive computer – see “Decompression illness”) and a suitable cutting tool;
 - (d) that is not tended and is “free swimming” with a permanent surface marker buoy, has a personal location beacon (PLB)/GPS tracking device or similar.
44. If SCUBA is used, then the risk assessment should consider whether full-face masks should be used. Full face masks will normally be required where voice communications are used. Full face masks can prevent drowning if the diver has a medical issue. If full face masks are used, then suitable gas switching blocks will be required for the diver to access the independent breathing gas supply.

Quantity of gases

45. The quantities of gases required for diving operations, including primary, secondary supplies and therapeutic treatments, should be calculated and provided when planning a diving project. Allowances should be made for leakage, wastage and contingencies. Diving should be stopped if the quantity of gas acceptable for safety purposes falls below the planned minimum.

Quality of gases

46. Procedures for checking and maintaining gas purity standards should be provided to ensure that the breathing gas is safe to breathe. Breathing gas should comply with the appropriate national, European or international standards (see [diving information sheet no. 9](#)).

Diver monitoring

47. Supervisors should monitor divers’ breathing patterns, their position and the duration of dives. The surfacing time for each diver must be known in advance and the supervisor must be able to recall individual divers if required. If the divers are not tended, then each diver’s permanent surface marker buoy should identify which diver it is marking.

Diver recovery

48. All diving vessels should have a suitable method of recovering injured and/or unconscious divers from the water. This will largely be dictated to by the type of boat.

SPECIFIC HAZARDS

Entrapment

49. Divers can easily be entrapped or entangled. Shellfish diving should therefore not take place in the proximity of intakes or discharges or where there is a risk of entrapment near underwater nets or structures.

Use of compressed air or gas mixtures

50. Divers breathing a mixture of oxygen and nitrogen under pressure, whether compressed natural air or an artificial mixture, are at risk of both oxygen toxicity and nitrogen narcosis as the depth increases. The maximum depth for breathing mixtures of compressed air or oxygen and nitrogen is 50 metres of water. The recommended maximum partial pressure for oxygen is 1.4 bar. Some decompression tables include decompression stops which require higher partial pressure of oxygen. This may pose an increased risk of oxygen toxicity. If such decompression techniques are used, the procedures accompanying the decompression tables should be followed, and the risk assessment for the dive should consider the increased risk of oxygen toxicity.

51. Some therapeutic tables may also require higher partial pressures of oxygen.

Decompression illness

52. Diving carries an inherent risk of decompression illness (DCI). The incidence of DCI drops if the length of time that a diver spends at any particular depth is limited. All dives should be planned and conducted in accordance with a recognised decompression table or using a personal dive computer. This should be included in the diving project plan.

53. The diving contractor should assess the risk of DCI and likelihood of a diver requiring emergency recompression. This should be based on the depth and duration of the planned dives. The assessment should also consider factors which may increase the risk of DCI such as water temperature, type of work and the number of dives/ascents. The risk of decompression should be reduced as far as practicable by the careful and considered use of dive tables and their procedures for cold water, hard work, repetitive diving etc.

54. If dive computers are used, they should be set to take into the additional decompression risk of hard work and cold-water conditions.
[Diving information sheet 5](#) provides guidance on the maximum bottom time limits.

Availability of compression chambers

55. The diving contractor has a responsibility to ensure the provision of facilities so that a diver can be recompressed in an emergency, should this be necessary. Treatment of DCI in a compression chamber should commence as soon as possible (subject to medical advice). The provision of a compression chamber should be in accordance with the decompression procedures selected as part of the diving project plan.

56. If there is no chamber on site, the following should be applied:

- (a) There should be no planned in-water decompression exceeding 20 minutes.

- (b) The diving contractor should identify the nearest suitable operational two-person, two-compartment chamber. Under no circumstances should this be more than 6 hours travelling distance from the dive site.
- (c) The diving project plan should demonstrate that in an emergency, a diver will be able to be transported and recompressed to ensure their safety. This includes the provision of sufficient oxygen to administer to a casualty for the duration of the transfer.
- (d) If the diving project plan relies on the support of any emergency services, then that plan should be subject to continued assessment and take into account any factors which may affect such support (for example changing weather conditions).
- (e) If the diving contractor is responsible for transporting the injured diver to a hospital or other place, their duty will continue until the diver is admitted to the hospital or other place.

Restricted surface visibility

57. Restricted surface visibility may affect the safety of the operation, for example when diving in darkness, heavy rain or fog. The diving project plan should identify when an operation should be suspended because of restricted visibility.

58. The use of SCUBA drift diving techniques is particularly vulnerable to poor visibility. Supervisors must be aware of worsening conditions or poor forecasts and diving must be suspended before conditions deteriorate.

Weather

59. Adverse weather conditions may affect the safety of a diving operation and the dive plan should identify when an operation should be suspended. Boats used for shellfish diving are often small craft which are quickly affected by worsening seas. Not only may a vessel's handling be affected, making it more difficult to reach and recover a diver from the water but also the ability to see a marker buoy reduces rapidly as the sea state increases. Supervisors must be aware of this and suspend diving before conditions become hazardous.

Underwater currents

60. Currents may impose limitations on a diver's operational ability. Tide meters and tide tables may provide information on the current at different depths and can be used to help assess diving conditions. Changing currents may separate divers who enter the water together. Supervisors must be ready to recall divers if they are in danger of becoming so separated that they can no longer be monitored efficiently.

Thermal stress

61. Excessive heat and cold can affect the health, safety and efficiency of divers and the dive team. Appropriate personal protective equipment and procedures should be provided to maintain thermal balance, both in the water and in the boat before and after a dive.

Altitude changes after diving

62. Restrictions on travelling/flying after diving should be contained in the dive contractor's diving project plan and be in accordance with the decompression tables being used.

ELECTROFISHING

63. It is illegal to conduct electrofishing for shellfish unless the vessel has been given permission by the appropriate fisheries authority.

64. Electrofishing has the potential to increase the risks to the divers.

65. The risk assessment and diving project plan should address the additional risks of diving in the proximity to electrical equipment. This should include consideration of the use of SSDE or SCUBA.

66. Due to the increased risk the minimum equipment should be SCUBA with full face masks and hard-wired voice communications. With effect from xx xx xxxx, the minimum approved diving qualification for all electrofishing using SCUBA is HSE SCUBA or equivalent. If SSDE is used, then the divers must have an approved surface supplied qualification.

67. Care should be taken to ensure that the divers and other members of the dive team are protected from the risk of electric shock. The risk assessment and project plan should address the risk of the diver coming into contact with the live electrodes. This should include

- (a) Safe working practices
- (b) Separation
- (c) Physical barriers
- (d) Emergency cut-off switches
- (e) Regular testing of electrical safety equipment (this should be included in pre-dive checks)

68. For electrofishing at least one tender is required for each diver in the water.

Further information

For information about health and safety visit <https://books.hse.gov.uk> or <http://www.hse.gov.uk>. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

This document can be found online at: www.hse.gov.uk/hid/osd/scallop.pdf

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ANNEX A

RECOGNITION OF PRIOR EXPERIENCE OF DIVING IN THE COMMERCIAL SHELLFISH INDUSTRY

INTRODUCTION

1. The list of approved diving qualifications published by HSE has historically included the recreational qualification at a level of CMAS 3* or equivalent as being approved for commercial shellfish diving. This was later updated to also include recreational qualifications that meet EN 14153-3/ISO 24801-3. Following a review of this guidance document, and a consideration of the competencies assessed during recreational diver training and commercial SCUBA training, the approved qualification for commercial shellfish diving is to be changed to require any new entrants to the industry, or any divers working as part of electrofishing activity to hold an HSE SCUBA qualification or equivalent.
2. This annex describes the process whereby divers with relevant experience of commercial shellfish diving may apply for recognition by HSE of that experience in order that they can continue working in this industry.

RECOGNITION OF PRIOR EXPERIENCE

3. Divers who have previously undertaken commercial shellfish diving using a qualification at a level of CMAS 3* or equivalent in the two-year period prior to xx xx xxxx [date of publication of the updated guidance] can apply to HSE for recognition of their experience. If their application is successful, they will receive an approval of their qualification that will allow them to continue to dive using SCUBA in the commercial shellfish industry.
4. To apply for recognition of prior experience, the diver must complete an application form (available at Annex B) and submit it to HSE together with the following documentation:
 - (a) a passport sized photo (signed and dated on the back).
 - (b) copy of a recognised form of photographic identification which includes date of birth (Driving licence, passport, or similar Government issued document).
 - (c) copy of CMAS 3* level qualification, CMAS 3* equivalent in a recreational agency/organisation whose qualifications are approved by HSE for recreational diving, or recreational diving qualification that meets EN14153-3/ISO 24801-3.
 - (d) copy of pages from the diver's daily record of diving ('diver's personal logbook') from the two years prior to xx xx xxxx showing evidence of a

minimum of 35 dives of greater than 15 minutes working as a commercial shellfish diver.

In exceptional circumstances, for example if the diver was unable to provide evidence from a logbook, HSE may consider alternative evidence such as letters of support from diving contractors, shellfish licences etc.

5. HSE will review the submitted evidence and will undertake spot checks to confirm the validity of the information. If the review is satisfactory, HSE will approve the diver's individual recreational diving qualification for use whilst SCUBA diving commercially for shellfish. The approval document will be sent to the diver and will include specific restrictions and limitations.
6. The approval issued to the diver by HSE is not a certificate of competence, and the diver and any diving contractor that they may work for should recognise that the diver may not have been trained and assessed in all techniques and equipment that may be employed in commercial shellfish diving.

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ANNEX B

APPLICATION FORM FOR RECOGNITION OF PRIOR EXPERIENCE OF DIVING IN THE COMMERCIAL SHELLFISH INDUSTRY

This form is to be completed by the diver (**BLOCK CAPITALS**) and reviewed by HSE. Please submit this application form, together with:

- a recent passport sized photograph, signed and dated on the rear;
- a copy of your photographic identification which includes your date of birth (passport, driving licence or other government issued document);
- a copy of your recreational diving qualification that has been used in order to carry out shellfish diving; (please send copies of both the front and rear of your qualification certificate); and
- a copy of your diver's daily record entries showing a minimum of 35 dives of at least 15 minutes duration conducted whilst working as a commercial diver in the shellfish industry in the 2 years prior to xx xx xxxx. Note: Any descent, ascent and decompression time are not counted towards the 15 minutes.

Your completed application and supporting documents should be emailed to diving@hse.gov.uk or posted to Diving Group, Health & Safety Executive, Rosebery Court, St Andrews Business Park, Norwich, NR7 0HS¹.

Data Protection Act: Diver Details are held on a database – under the terms of the Data Protection Act anyone can request to see their own details held on this database. HSE will only release information as allowed by law. This will cover providing details of diver certification/approval to prospective employers.

Title	<input type="text"/>	Surname	<input type="text"/>
Forename (s)	<input type="text"/>	Middle Initial	<input type="text"/>
Date of birth	<input type="text"/>	Nationality	<input type="text"/>
Current address	<input type="text"/>		
Postcode	<input type="text"/>	Telephone	<input type="text"/>
Address to send approval (if different from above).	<input type="text"/>		
Recreational diving qualification held.	<input type="text"/>		
Number of experience dives submitted.	<input type="text"/>		
Any additional supporting documents. Attach further details if necessary.	<input type="text"/>		

¹ During the COVID-19 pandemic, postal applications may be delayed.