

# PLAR Unrestricted Surface Supplied Criterion Check List

Commercial Diving Institute of Canada (CDI)

Version Control 1.1.1

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Note to PLAR Candidate: The key CSA Z275.4 Competency Performance Requirements for the DCBC Unrestricted Surface Supplied Diver have been listed. Please check off all competency requirements that you have completed during formal training or working as a professional diver. It is very important to realize that all checked items have to be authenticated by the presentation of your log book that has been signed by the Supervisor and the performance 'item' has been identified in the log book. A letter from an employer may in other cases be used to identify some performance requirements that may have been met through employment. The intent of this check list is to assist the Admission Staff with your assessment against the standard. In support of this criterion check list all PLAR candidates must meet the dive time and depth requirements through either their log book or by completing the dives during the PLAR training.

## CSA Z275.4 Competency Requirement Performance Check List

- 1.1 Understand the operational diving techniques and duties of the dive site personnel used in unrestricted surface-supplied diving operations.
- 1.2 Understand the maintenance and use of various types of diving equipment used in unrestricted surface-supplied diving operations.
- 1.3 Understand the procedures involved in preparing operational and contingency plans.
- 1.4 Understand the principles and operation of high- and low-pressure compressors, their associated equipment, and applicable safety requirements.
- 1.5 Have the knowledge and understanding to use underwater communication systems and diver line signals.
- 1.6 Describe the basic construction and theory of operation of hot-water suits, hot-water boilers, umbilicals, and fittings used to supply hot water to the diver.
- 1.7 Have the knowledge and understanding of the equipment and procedures used to safely launch an open diving bell and/or dive stage.
- 1.8 Be knowledgeable in the use of in-water and surface decompression procedures.
- 1.9 Understand and demonstrate the use of dry suits.
- 2.0 Understand the principles of trapped gas explosive shock.
- 2.1 Complete knowledge of the principles and responsibilities of being a diver, a diver's tender, and a standby diver on an unrestricted surface-supplied diving operation.
- 2.3 Describe the basic construction and theory of operation for various diving masks, helmets, suits (wet and dry), and umbilicals, demonstrate their assembly, and carry out field maintenance.
- 2.4 Demonstrate the ability to prepare an operational and contingency plan.
- 2.5 Describe the basic construction and theory of operation of high- and low-pressure compressors, demonstrate their safe operation, and carry out field maintenance.
- 2.6 Demonstrate a complete knowledge of the use of underwater communication using diver intercom systems and diver lifeline signals, and perform basic field maintenance.
- 2.7 Demonstrate a complete knowledge of the use of hot-water suits and the equipment used to supply hot water to a diver.

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- 2.8 Demonstrate a complete knowledge of the equipment and procedures used to safely launch and recover an open diving bell and/or dive stage.
- 2.9 Demonstrate a complete knowledge of the use of in-water and surface decompression procedures.
- 3.0 Perform the duties of a diver, diver's tender, and standby diver safely and competently in diving operations using surfaced-supplied diving equipment to a depth of 50 msw (165 fsw).
- 3.1 Perform emergency drills using surface-supplied diving equipment and demonstrate the procedures to be followed in the event of a broken faceplate & uncontrolled ascent.
- 3.2 Perform a simulated rescue of an unconscious/injured diver using surface-supplied equipment while acting as a diver, tender or standby diver.
- 3.3 Perform user maintenance procedures for surface-supplied diving equipment, prepare equipment for use, and dismantle and reassemble self-contained and surface-supplied equipment.
- 3.4 Demonstrate a complete knowledge of the function and operation of surface-supplied masks, helmets, and associated diving equipment, and of the function, operation, and limitations of secondary and emergency systems currently in use.
- 3.5 Demonstrate the ability to set up diving stations/sites for an unrestricted surface-supplied diving operations.
- 3.6 Carry out pre- and post-dive checks on diving equipment, compressors, and associated support equipment.
- 3.7 Perform user maintenance procedures for and repairs of diving suits (wet, dry, and hot-water).
- 3.8 Act as a diver, tender, and standby diver on an unrestricted surface-supplied diving site.
- 3.9 Act as a diver, tender, and standby diver while employing hot-water suits on an unrestricted surface-supplied dive site.
- 4.0 Perform user maintenance and pre- and post-dive checks on a double-lock recompression Chamber.
- 4.1 Act as a panel operator and inside tender while compressing and decompressing a double-lock recompression chamber.
- 4.2 Act as a diver, tender, and standby diver while employing an open diving bell or diving stage on an unrestricted surface-supplied dive site.
- 4.3 Set up an underwater electric welding station.
- 4.4 Inspect, maintain, and use hand and power tools in accordance with the manufacturer's specifications and recognized safe work practices.
- 4.5 Complete various lifting and handling tasks using various rigging, tackle, and procedures.
- 4.6 Understand the uses of winches with hydraulic and air motors, both on the surface and under water.
- 4.7 Understand the various measurement and searching techniques involved in underwater inspection.
- 4.8 Understand the principles of operation and safety procedures for operating a water jet and air lift.
- 4.9 Understand the principles of operation of exothermic and oxy-arc cutting torches.

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- 5.0 Understand the principles of operation of underwater electric arc welding equipment.
- 5.1 Understand the principles of underwater construction techniques, including the use of concreting, shuttering, grouting, sandbagging, and the construction of forms under water.
- 5.2 Understand the use of explosives under water, including the three main types of explosives. (high, low, and primary)
- 5.3 The principles of electric and non-electric detonation.
- 5.4 The principles of detonating cord.
- 5.5 The safety precautions used when handling and detonating explosives.
- 5.6 The safety precautions used for misfire.
- 5.7 The safety precautions used for transporting and storing explosives.
- 5.8 Inspect and maintain hand tools by: washing such tools in fresh water; lubricating as appropriate; inspecting drill bits, chisels, saws, and other edged tools;
- 5.9 Demonstrate the use of basic hand tools to complete simple tasks under water by using a hammer and chisel to cut a 15 mm (0.5 in) diameter steel bar; using a hacksaw to cut a 15 mm (0.5 in) diameter steel bar; using combination, adjustable, and pipe wrenches to tighten and loosen nuts and bolts of various sizes.
- 6.0 Inspect and maintain power tools by washing such tools in fresh water; lubricating as appropriate; inspecting tool hoses for damage; changing filters as required;
- 6.1 Demonstrate the use of pneumatic or hydraulic power tools while completing the following tasks underwater: choose the proper tool for the working depth; using an impact wrench to tighten and loosen nuts and bolts of various sizes; using drills and saws to drill and cut steel to a predetermined size and position; using drills and jackhammers to drill and break up concrete;
- 6.2 Demonstrate the following lifting and rigging techniques under water: tying common knots, i.e., a square knot, bowline, clove hitch, rolling hitch, round turn and two half-hitches, and sheet bend; coiling rope;
- 6.3 Using air/hydraulic winches to raise and lower a given load; using signs and signals while operating an air/hydraulic winch; selecting a piece of lifting gear and a rope of the correct type and safe working load for a given load; rigging a block and tackle of sufficient safe working load and mechanical advantage for a given load; using a chain-fall, come-along, or similar lifting device; and using lifting bags to raise an underwater load.
- 6.4 Demonstrate the following underwater inspection, measurement, and searching techniques: with the use of visual inspection, still photography, and video techniques, inspect a predetermined underwater structure; carry out a bottom search for an object in poor visibility; carry out a bottom search for an object in bottom conditions such as soft mud, debris and rocks and seaweed and kelp; carry out a bottom search for an object using different searching techniques such as a circular search, grid search, jackstay search, and snag line search; carry out simple underwater surveys of the seabed, underwater structures, and/or vessel hulls and make a report.
- 6.5 Demonstrate the use of a water jet and air lift, and use a water jet and air lift to clear silt, mud, or sand from an object on the seabed.
- 6.6 Demonstrate the use of underwater cutting methods by using exothermic and oxy-arc techniques to cut ferrous metal up to 20 mm (0.75 in); using exothermic and oxy-arc techniques to cut ferrous metal to a predetermined size within a predetermined length of time.

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- 6.7 Demonstrate the use of underwater welding methods by using underwater electric arc welding techniques to weld two pieces of metal together to certain specifications within a certain length of time, using predetermined sizes and types of equipment.
- 6.8 Demonstrate the methods and techniques used in underwater construction, using associated tools and material to construct a structure underwater.
- 6.9 Know the hazards involved in diving from vessels, e.g., the potential hazards of propellers and thrusters, and the dangers involved in diving from a dynamically positioned vessel and diving using live boating techniques.
- 7.0 Have a complete knowledge of the hazards found in ocean diving, including tidal currents, waves and hazardous marine life.
- 7.1 Have a complete knowledge of the possible entrapment hazards for divers, including gates, sluices, culverts, sewers, intakes and outfalls, water control structures and pipelines.
- 7.2 Understand diving regulations and standards.
- 7.3 Understand and be able to apply lockout procedures that will ensure that all equipment/machinery is secured against inadvertent movement; understand and be able to apply lockout procedures for the control of water flow and differential water pressure.
- 7.4 Understand the checks, decontamination and other procedures, and equipment modifications for contaminated diving.
- 7.5 A complete knowledge of hazard identification as related to the diving environment and describe the safety planning and necessary precautions to be taken.
- 7.6 Complete knowledge of the relevant CSA Standards, safety regulations, and related diving Legislation.

## PLAR Candidate Statement of Understanding:

**It is understood that I have full responsibility to authenticate each item on the Criterion Check List that I have checked off as accomplished during my formal training as a professional diver or during employment as a professional diver. Authentication can be established through the presentation of a Professional Diver's Log that has been signed and stamped by the Supervisor or by a letter from the employer identify the accomplishment of the specific performance items. It is also understood that all original documents must be presented to the school during the first day of the PLAR class. All items that cannot be signed off will be**

PLAR Candidate Signature: \_\_\_\_\_

Date: \_\_\_\_\_