

COURSE: SCBA - SELF-CONTAINED BREATHING APPARATUS

SCOPE AND APPLICABILITY:

This course will train and certify personnel so that they can correctly and safely use the Self-Contained Breathing Apparatus (SCBA) in hazardous environments that pose a threat to life and property.

REGULATIONS & STANDARDS

- OSHA 1910.134 Respiratory protection;
- NFPA 1981: Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services;
- NBR 12543 - Respiratory Protection;
- CFR Chapter-I Subchapter-G Part 84.

COURSE CONTENT:

1. Introduction to Use and Applications
 - 1.1. SCBA - Definition
 - 1.2. Situations that Require the Use of SCBA
 - 1.3. Situations that Require the Use of SCBA Outdoors
 - 1.4. Function of the SCBA
 - 1.5. IDLH Atmosphere
 - 1.5.1. Hazardous Atmospheres
 - 1.5.2. Toxic Gases
 - 1.5.3. Respiratory Protection Equipment – Classification
2. Components and Characteristics
 - 2.1. Parts of SCBA
 - 2.1.1. Cylinder Registry
 - 2.1.2. Connection Ring
 - 2.1.3. Pressure Reducing Valve
 - 2.1.4. Air Flow Release Button
 - 2.1.5. Air Flow Lock Button
 - 2.1.6. Cylinder
 - 2.1.6.1. Cylinders Composition
 - 2.1.6.2. Parts of SCBA Cylinder
 - 2.1.7. Shoulder Adjustment Strap
 - 2.1.8. Cylinder Strap
 - 2.1.9. Pressure Gauge
 - 2.1.10. Waist Belt
 - 2.1.11. Full-Face Mask
 - 2.1.12. Demand Valve Lock
 - 2.1.13. Mask Strap
 - 2.1.14. Back Support
 - 2.1.15. Anti-vibration Strap
 - 2.1.16. Demand Valve
 - 2.1.17. Mask Adjustment Rod
 - 2.1.18. Personal Alert Safety System (PASS)
 - 2.1.18.1. Parts of PASS - Personal Alert Safety System
 - 2.1.19. Communication System
 - 2.1.20. End-of-Service-Time Indicator (EOSTI)
 - 2.1.21. Elapsed Time Indicator
 - 2.1.22. Heads-Up Display (HUD)
 - 2.1.23. UEBBS / EBSS
 - 2.1.24. Types of SCBA
 - 2.1.24.1. Open-circuit SCBA
 - 2.1.24.2. Closed-Circuit SCBA
 - 2.1.25. SCBA Brands
3. Limitations and Autonomy Management
 - 3.1. SCBA Limitations
 - 3.1.1. Excessive Heat
 - 3.1.2. Gases or toxins that are absorbed through the skin
 - 3.1.3. Flashover, flame rollback, smoke explosion, or other rapid-fire events
 - 3.1.4. Limited Visibility
 - 3.1.5. Decreased Ability to Communicate
 - 3.1.6. Increased Weight
 - 3.1.7. Decreased Mobility
 - 3.1.8. Ergonomic Design
 - 3.2. Autonomy Calculation
 - 3.2.1. Hydrostatic Volume Calculation
 - 3.2.2. Consumption of liters of air by physical activity
 - 3.2.3. Calculation of air time in cylinder
 - 3.2.4. Time Management and Air Autonomy
4. Protocols and Operating Procedures
 - 4.1. Pre-Use Checks
 - 4.2. Donning and Doffing
 - 4.2.1. Overhead Placement Method
 - 4.2.2. Dressing Method
 - 4.2.3. Doff SCBA
 - 4.3. Replacing the Cylinder
 - 4.4. BA Control
 - 4.5. Safe Stairs and Ladder Procedures
 - 4.6. Entrapment Procedure
 - 4.7. Emergency Procedures
 - 4.8. Equipment Failure
5. Inspection, Maintenance, and Storage
 - 5.1. Pre-use Inspection
 - 5.1.1. Pre-use Inspection Steps
 - 5.1.2. Fit Test
 - 5.1.3. Positive/Negative Pressure Test
 - 5.1.4. Batteries
 - 5.2. Post-Use Inspection
 - 5.3. Cylinder Refill
 - 5.4. Hydrostatic Testing
 - 5.5. Cleaning and Sanitizing
 - 5.6. Storage
 - 5.7. Cylinder Replacement
 - 5.8. Repairs

COURSE DESIGN:

Theoretical – 6 hours

Practical – 2 hours

TOTAL: 8 hours

PREREQUISITE(S):

None.

MINIMUM/MAXIMUM NUMBER OF DELEGATES

This course requires a minimum of 1, and a maximum number of 12 trainees.

MAIN SAFETY ISSUES:

- Understanding the concept, functions, and applications of SCBA, as well as identifying situations that require its use;
- Familiarity with all parts of the SCBA, from the cylinder to the components of the Personal Alert Safety System (PASS);
- Knowledge of different types and limitations of SCBA and how each type operates;
- Competence to calculate the autonomy of the SCBA, including the calculation of the hydrostatic volume, consumption of liters of air per physical activity, and management of time and air autonomy;
- Familiarity with operational procedures;
- Knowledge about pre and post-use inspection, cylinder recharge, hydrostatic tests, cleaning and sanitation, storage, and repairs.

REQUIRED EQUIPMENT:

- An SCBA and all of its components, including:
 - High-pressure cylinder;
 - Pressure regulator;
 - Inhalation connection;
 - Personal alert safety system (pass) alarm.

PROCEDURE FOR PRACTICAL EXERCISES:

- Awareness of the purpose of the SCBA;
- Awareness of the requirements in which to use an SCBA;
- Knowledge of the capabilities and limitations of the SCBA;
- Knowledge of the emergency action plan and steps in the event of a hazardous environment exposure;
- Knowledge of the steps to inspect, don, and doff an SCBA in the event of an emergency;
- Donning/Doffing the Self-Contained Breathing Apparatus (SCBA);
- Battery Check;
- Check cylinder Gauge;
- Attaching Respirator;



EVO
HUMAN SAFETY SOLUTIONS

Self-Contained Breathing Apparatus (SCBA)

- Negative Pressure Leak Test;
- Donning SCBA to working and satisfactory condition;
- Post-use inspection of SCBA.

CERTIFICATION:

Certificate of Training.

CERTIFICATE VALIDITY PERIOD:

Recommendable: 2 years.