

Appendix E

E 10.2 Prevention of Contamination. The system components shall not be exposed to contaminants, including but not limited to, oils, solvents, dirt, and construction materials. When contamination of system components has occurred, the affected component shall not be installed in the system.

E 11.0 System Acceptance and Certification.

E 11.1 Static Pressure Testing. Following fabrication, assembly, and installation of the piping distribution system, exterior connection panel, and interior cylinder fill panels, the Authority Having Jurisdiction shall witness the pneumatic testing of the complete system at a test pressure of not less than 520bar (7,500 psi) using oil-free dry air, nitrogen, or argon. Not less than twenty-four hour pneumatic test shall be performed. During this test, all fittings, joints, and system components shall be inspected for leaks. A solution compatible with the system component materials shall be used on each joint and fitting. Any defects in the system or leaks detected shall be documented on an inspection report, repaired or replaced. As an alternate, a pressure-decay test in accordance with ASME B31.3 or equivalent International Standard(s) approved by the Authority Having Jurisdiction shall be permitted.

E 11.2 Low Pressure Switch Test. Upon successful completion of the twenty-four hour static pressure test, the system's low-pressure monitoring switch shall be calibrated to not less than 210bar (3,000 psi) descending, and tested to verify that the signal is annunciated at the building's main fire alarm panel and by means of an audible alarm and visual strobe located in a visible location.

E 11.3 Compatibility Check. Each air fill panel and station and each exterior fire department connection panel shall be tested for compatibility with the fire department's SCBA fill fittings.

E 11.4 Material Certifications. The pipe or tubing material certifications shall be provided to the Authority Having Jurisdiction.

E 11.5 Air Sampling. Before the system is placed into service, not less than two samples shall be taken from separate air fill panels and submitted to an independent certified gas analysis laboratory to verify the system's cleanliness and that the air complies with the requirements for breathing air in accordance with NFPA 1989, Section 5.6 or equivalent International Standard(s) approved by the Authority Having Jurisdiction. The written report of the analysis shall be submitted to the Authority Having Jurisdiction, documenting that the breathing air complies with this section.

E 11.5.1 During the period of air quality analysis, the air fill panel inlet shall be secured so that no air can be introduced into the system and

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each air fill panel shall be provided with a sign, stating "AIR QUALITY ANALYSIS IN PROGRESS, DO NOT FILL OR USE ANY AIR FROM THIS SYSTEM." This sign shall be not less than 22cm by 28cm (8-1/2 in. by 11 in.) with lettering not less 25mm (1 in.).

E 11.6 Annual Air Sampling. The breathing air within the system shall be sampled and certified annually and inspected in accordance with the procedure in Section F 12.5.

E 11.7 Final Proof Test. The Authority Having Jurisdiction shall witness the filling of two empty SCBA cylinders having a capacity of 1.9m³ (66 ft³), in 3 minutes or less, using compressed air supplied by fire department equipment connected to the exterior fire department connection panel. The SCBA cylinders shall be filled at the air fill panel or station farthest from the exterior fire department connection panel. Following this, not less than two air samples shall then be taken from separate air filling stations and submitted to an independent certified gas analyst laboratory to verify the system's cleanliness and that the air meets the requirements of NFPA 1989 or equivalent International Standard(s) approved by the Authority Having Jurisdiction. The written report shall be provided to the Authority Having Jurisdiction certifying that the air analysis complies with the above requirements.