



Honeywell Safety Products

3001 S. Susan Street
Santa Ana, CA 92704
Tel: 714 545-0410 – Fax: 800 201-4407
www.honeywellsafety.com

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SUBJECT: **Technical Bulletin 145**
Modal acoustic emission testing (MAE) for cylinder requalification from 15-year life to 30-year life.

PRODUCTS AFFECTED: All Honeywell, Sperian and Survivair carbon filament, fiber-wrapped, high pressure gas storage vessels (SCBA and Supplied Air [SAR] cylinders)

In late 2017, the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) issued special permit DOT-SP16320, recognizing modal acoustic emissions testing (MAE) as a special alternative to hydrostatic testing employed to requalify carbon filament fiber-wrapped, high-pressure gas storage vessels for safe use in the transportation of gases held at high pressures. Honeywell strongly opposes allowing the MAE test method to be used to extend the life of SCBA cylinders beyond 15 years. We have numerous reasons for our opposition. Some of them are as follows:

- To the best of our knowledge, no definitive studies to validate the MAE method of life extension have been done on cylinders used in the fire service that have been repeatedly exposed over their 15-year life to environmental extremes, especially high heat.
- Likewise, to the best of our knowledge, no definitive studies to validate the MAE method of life extension have been done on cylinders used in the fire service or in any other application that have seen frequent use over their 15-year life. Some cylinders in the fire service can experience 5,000 to 10,000 uses over a 15-year period. The continual expansion and contraction of the cylinder walls can lead to cylinder fatigue, and while this is taken into account for the 15-year special permit, there are no data to support the ability of such heavy use cylinders to last longer than 15 years.
- Cylinder manufacturers who produce cylinders to achieve a 30-year DOT Special Permit have designed and constructed them differently from 15-year cylinders. They are larger and heavier, with thicker cylinder walls. 15-year cylinders were designed and constructed to last 15 years, not 30 years. It makes no sense for the DOT to require special construction for 30-year cylinders, but to allow 15-year cylinders that do not have such construction to have a life extension to 30 years.

It should be noted that the world's largest manufacturer of SCBA cylinders, Luxfer, opposes using the MAE method of cylinder requalification, based on significant technical grounds related to safety. Testing by Luxfer indicates that there can be as high as an 8% failure rate for cylinders originally certified as 15-year cylinders if used beyond their 15-year limit.

Given the lack of hard data to validate MAE as being a safe method for extending the life of cylinders that have undergone frequent use in firefighting conditions, Honeywell prohibits, until further notice, employing the MAE method of requalifying Honeywell, Sperian and Survivair 15-year SCBA cylinders beyond their 15-year life. End users who do not adhere to this Honeywell prohibition and receive cylinder requalification life extensions from vendors who employ the MAE method of cylinder requalification, and who use those requalified cylinders in Honeywell, Sperian or Survivair SCBAs, will be deemed by Honeywell as using Honeywell's SCBAs in an unapproved manner, thereby voiding the NIOSH, NFPA and CBRN SCBA certifications, and voiding all Honeywell SCBA warranties.