

Proposed Inward Leakage Testing in NIOSH Certification

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Total inward leakage is a measurement of the leakage into a respirator facepiece from all sources: through the filter, the face seal, and the exhalation valves. When Part 84 was promulgated in 1995, no tests had been validated to quantify the fit of particulate filtering respirators. In the preamble it was stated "NIOSH will address issues associated with face-fit efficacy in a separate module upon completion of the necessary research." The issue of lack of fit-testing as a component of respirator certification was raised when OSHA held a public hearing on the proposed revision to 29 CFR 1910.134. In testimony and comments to this rulemaking, NIOSH committed to add a method of qualifying fit to the requirements for the certification of respirators. As a result, NIOSH embarked on a program to assess the Total Inward Leakage of respirators certified by NIOSH using a quantitative fit test validated through NIOSH research. It was decided to begin the total inward leakage program by developing requirements for half-mask respirators first.

The project is organized into three phases; Investigative/Concept Draft, Test Facility/Benchmark Testing, Consistency Testing/Implementation Plan. The second phase of the project is almost complete. Over 100 respirators have been evaluated and the data is being analyzed. The implementation plan has been drafted and will be presented for public review and comment.