

A NEW DEVICE FOR TESTING RESPIRATOR INTEGRITY

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In fit testing there is an assumption that no leakage occurs through the respirator and the aerosol measured in the respirator comes only from face seal leakage. Measuring a high fit factor indicates that the respirator fits the individual and there are no leaks in the respirator. While it is rare to find leakages in new respirators, leaks may occur as respirators age. This is of particular concern with respirators that offer high levels of protection where small leaks could be critical. A new mask integrity test accessory (MITA) has been developed. The MITA tests critical components of the respirator and overall leakage using a PORTACOUNT Respirator Fit Tester for the aerosol detector. Tests include drink tube leakage and flow outlet valve leakage and overall respirator leakage. A probe mode allows the user to determine the location of a leak using an aerosol probe. The seal between the respirator and tester is critical for testing respirator leakage. Typically the respirator is mounted on a full or partial head form. Several existing designs were rejected due to the difficulty in mounting the mask or keeping a tight seal. A new head form was developed using an inflatable bladder for the sealing surface. The bladder shape and size were designed so most masks will fit and seal on a single size head form. The full head form design allows using the respirator's integral head harness for mounting. Data will be presented showing the ability of MITA to validate respirator integrity.