

RESPIRATOR FIT TESTING HIGHLIGHTS FOR OSHA RESPIRATORY PROTECTION STANDARD 29CFR1910.134

APPLICATION NOTE ITI-056

Here at TSI we are often asked to identify what the new fit testing provisions are and where they appear in the text of the standard. This application note was created expressly for that purpose. We hope you find it useful.

On January 8, 1998 OSHA released the long-awaited revision to the Respiratory Protection Standard 29CFR1910.134. It replaces the standard with the same name and number that was released in 1971. This new revision has far reaching impact on a large number of existing OSHA standards in that it replaces certain provisions related to respirator use.

Many of the changes affect respirator fit testing. Now, with the single exception of occupational exposure to tuberculosis, all fit testing is the same for all employers regardless of the OSHA standard that must otherwise be followed.

The page numbers listed below refer to the Federal Register Vol. 63, No. 5, Thursday, January 8, 1998.

- [Obtaining a Copy of the New OSHA Standard](#)
- [Fit Testing Index for OSHA Respiratory Protection Standard 29CFR1910.134](#)
- [Fit Testing Highlights and Page References](#)
- [Related OSHA documents](#)

Obtaining a Copy of the New OSHA Standard

You can get the document off the Web and print it yourself. The easiest way is to get it from our Web site: [OSHA Respiratory Protection Standard 29 CFR 1910.134 released 1/8/98](#), [Correction to OSHA 29 CFR 1910.134 released 4/23/98](#) or visit www.osha.gov. The standard is presented in a single PDF file that cannot be accessed without Acrobat Reader software. If you do not already have the Acrobat Reader installed on your computer, a link is provided so you can download it for free from the Adobe web site www.adobe.com.

Fit Testing Index for OSHA Respiratory Protection Standard 29CFR1910.134

(page numbers are from the January 8, 1998 Federal Register-- p####, c# = page #### column #)

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|------------------------------------|--------------|
| Preamble | p1152 - 1270 |
| Fit testing section of Preamble | p1221 - 1236 |
| Standard | p1270 - 1284 |
| Fit Testing [paragraph (f)] | p1273, c1 |
| Appendix A, Fit Testing Procedures | p1276 - 1282 |



Fit Testing Highlights and Page References

- **The fit testing requirements in the new standard supersede all other OSHA fit testing requirements** contained in other standards with one exception: Tuberculosis. (The old version of the 29CFR1910.134 standard was renamed to 29CFR1910.139 so that it could be kept in effect for OSHA's enforcement of CDC and NIOSH TB guidelines.)

Preamble: Summary:, p1152, c1
 Purpose of the Revision, p1158, c1
 Paragraph (p) -Revisions to Specific OSHA Standards,
 p1265, c3: also p1267, c3
 Tuberculosis reference: Paragraph 6, p1270, c1

- **All tight-fitting respirators must be fit tested.** This includes all types of air-supplied, positive-pressure, powered air-purifying, SCBA, etc. Positive-pressure respirators must be fit tested in negative-pressure mode.

Preamble: Fit Testing - Paragraph (f)(1), p1222, c3
 Standard: Fit Testing - Paragraph (f) and (f)(1), p1273, c1

- **One fit test is required once per year.**

Preamble: Frequency of Fit Testing - Paragraph (f)(2), p1223, c3
 (Discussion regarding elimination of 3-time QNFT requirement,
 p1234, c1)
 Standard: Paragraph (f)(2) p1273 c1

- **Half-mask respirators must attain a fit factor of at least 100 and full-face masks need at least 500*.**

Preamble: QNFT Minimum Fit Factors - Paragraph (f)(7), p1226, c1
 Standard: Paragraph (f)(7), p1273, c2

- **Qualitative fit testing (QLFT) is allowed only when a fit factor of 100 or less is needed*.** Quantitative fit testing (QNFT) is required if a fit factor above 100 is needed.

Preamble: QLFT Limits - Paragraph (f)(6), p1225, c3
 Standard: Paragraph (f)(6), p1273, c2

- **There are 8 exercises in a QNFT:** Normal breathing, deep breathing, head side to side, head up and down, talking, grimace, bending, normal breathing. Exercises have a minimum duration of 60 seconds except grimace which is 15 seconds. The data from the grimace exercise is excluded (i.e. not used) in the overall fit factor calculation. There only are 7 exercises in a QLFT because the grimace exercise cannot be done with QLFT.

Preamble: Fit Testing Procedures - General Requirements, p1227, c3
 Standard: Appendix A, Part 1, paragraph A.14, p1276, c3
 Appendix A, Part 1, paragraph C.2(b)(8)(i), p1280, c3

- **There are 4 accepted QLFT fit test methods.**

Preamble (general): Qualitative Fit Test (QLFT) Protocols - Appendix A,
 Paragraph B, p1228, c3

| QLFT Protocol | Preamble (specific) | Standard (Appendix A) |
|------------------------------|--------------------------|--------------------------|
| Isoamyl Acetate (banana oil) | Paragraph B.2, p1229, c1 | Paragraph B.2, p1277, c1 |
| Saccharin | Paragraph B.3, p1230, c1 | Paragraph B.3, p1277, c3 |
| Bitrex | Paragraph B.4, p1230, c1 | Paragraph B.4, p1278, c4 |
| Irritant Smoke | Paragraph B.5, p1230, c3 | Paragraph B.5, p1279, c1 |

- **There are 3 accepted QNFT fit test methods.**

Preamble (general): Quantitative Fit Test (QNFT) Protocols, p1232, c3

| QNFT Protocol | Preamble (specific) | Standard (Appendix A) |
|--------------------------------------|------------------------|--------------------------|
| Generated Aerosol (oil-mist/chamber) | Paragraph 2, p1232, c2 | Paragraph C.2, p1279, c3 |
| Condensation Nuclei (PortaCount) | Paragraph 3, p1234, c2 | Paragraph C.3, p1280, c1 |
| Controlled Negative Pressure (CNP) | Paragraph 4, p1234, c2 | Paragraph C.4, p1281, c1 |

- **The new standard becomes effective on April 8, 1998.** Employers have until October 5, 1998 to be in full compliance.

Preamble: Dates, p1152, c2

Paragraph (n) - Dates, p1264, c3

Standard: Dates, Paragraph (n), p1276, c1

*On September 25, 1998 the U.S. Department of labor released [OSHA Instruction CPL 2-0.120](#) which removed the confusion surrounding the issue of minimum fit factors and QLFT vs. QNFT for full-face respirators. The Instruction allows a choice of QLFT or QNFT (minimum fit factor=100) for all half-mask and full-face negative-pressure respirators used for protection against hazards at or below 10 times the permissible exposure limit (PEL). Full-face negative-pressure respirators used for hazard levels above 10 times the PEL must be fit tested using QNFT with a minimum fit factor of 500. QLFT or QNFT may be used for positive-pressure half-mask and full-face respirators (e.g. SCBA), except that a minimum fit factor of 500 must be used for QNFT. An exception is made for positive-pressure respirators used in demand-mode: only QNFT is allowed with a minimum fit factor of 500.

Related OSHA documents

- [OSHA 29 CFR 1910.134 Respiratory Protection Standard](#), released January 8, 1998
- [Corrections to OSHA 29 CFR 1910.134](#), released April 23, 1998
- [Questions and Answers on the Respiratory Protection Standard](#), released August 3, 1998
- [OSHA Instruction CPL 2-0.120](#), released September 25, 1998
- [Small Entity Compliance Guide for the Revised Respiratory Protection Standard](#), released September 30, 1998

OSHA Web site: www.osha.gov



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