



Clarification for Fire Departments in Massachusetts Facial Hair and Respirator Use

Summary:

The Massachusetts Department of Labor Standards (“DLS”) is the state agency responsible for enforcing OSHA-level safety and health standards within public sector workplaces in Massachusetts. Local fire departments have asked for clarification regarding facial hair and respirator use.

The DLS standard is consistent with the OSHA standard:

- Facial hair is **not permitted** in the area where the outer edge of the SCBA facepiece contacts the user’s face, and is not permitted if facial hair contacts or interferes with the function of the inhalation or exhalation valves¹.
- Facial hair is **permitted** in the area of the internal nose cup of a SCBA facepiece. A NIOSH letter dated November 2018 explains that the NIOSH certification is maintained when facial hair contacts the nose cup as long as it does not interfere with valve function².
- Facial hair is **not permitted** in the area where a disposable N95 respirator makes a seal with the user’s face, when the N95 is used in environments where air contaminants exceed the OSHA permissible exposure limits¹. Facial hair is permitted, however, when the N95 is used voluntarily, or when the air contaminants are below OSHA permissible exposure limits³.

OSHA Regulation:

29 CFR 1910.134 (g)(1)(i): The employer shall not permit respirators with tight-fitting facepieces to be worn by employees who have: (A) Facial hair that comes between the sealing surface of the facepiece and the face or that interferes with valve function; or (B) Any condition that interferes with the face-to-facepiece seal or valve function.

Rationale:

Facial hair can cause leakage of contaminants into the respirator.

Numerous scientific studies have demonstrated that facepiece leakage can occur on positive pressure SCBA respirators. The positive pressure flow of the SCBA does not completely prevent leakage of contaminants into the facepiece^{4, 5, 6, 7}. A negative pressure condition can occur inside the mask with positive pressure SCBAs. Additional studies have demonstrated that even persons who satisfactorily pass an individual Fit Test with facial hair, may fail subsequent Fit Tests conducted a day to a week later^{8, 9, 10}. These are two of the reasons why the OSHA regulations prohibit facial hair in the area where the SCBA facepiece seals with the user’s face.

Application:

DLS will utilize the OSHA inspection procedures which clarifies that facial hair is considered to be more than one day’s growth¹³.



References:

1. OSHA Regulation: 29 CFR 1910.134 (g)(1)(i)[B]
2. NIOSH Letter #CA 2018-1005:
<https://www.cdc.gov/niosh/npptl/resources/pressrel/letters/conformityinterp/CA-2018-1005-R1.html>
3. OSHA Regulation: 29 CFR 1910.134 (c)(2) and OSHA's *Small Entity Compliance Guide for the Respiratory Protection Standard*, OSHA Pub 3384-09 (2011) page14.
<https://www.osha.gov/Publications/3384small-entity-for-respiratory-protection-standard-rev.pdf>
4. Potential for leakage into facepiece of positive pressure SCBA: NFPA 1986 (2017): Standard on Respiratory Protection Equipment for Tactical and Technical Operations. Annex A.7.1
5. Potential for leakage into facepiece of positive pressure SCBA: 3M Highlights Volume 15, Number 1, 1997. <http://multimedia.3m.com/mws/media/77150/what-is-a-positive-pressure-respirator-1997.pdf>
6. Overbreathing SCBA. Moeller: "*Medical Effects of Wearing SCBA*" Fire Engineering Magazine 10/01/1985. <https://www.fireengineering.com/articles/print/volume-138/issue-10/features/medical-effects-of-wearing-self-contained-breathing-apparatus.html>
7. Overbreathing positive pressure SCBA <https://www.ncbi.nlm.nih.gov/pubmed/6869251>
8. Fit Test failure with facial hair. McGee, Oestenstad: *The Effect of Facial Hair on Protection Factors of Closed-Circuit, Pressure Demand SCBA*. Am Ind Hyg Assoc J 44:7, 480-484 (1983)
<https://www.ncbi.nlm.nih.gov/pubmed/6613853/>
9. Higher fit test leakage rates with facial hair (Int J Environ Res Public Health 2013 Jan; 10(1): 347-360
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3564146/>
10. Preamble to OSHA standard, Federal Register 63:1152-1300 (01/08/1988) paragraph (g)(1):
11. Hyatt, Pritchard: *Effect of Facial Hair on Respirator Performance*, Am. Ind Hyg Assoc J. 34:4, 135-142 (1973)
12. Skretvedt, Loschiavo: *Effect of Facial Hair on the Face Seal of Negative Pressure Respirators*, Am Ind Hyg Assoc J 45:1, 63-66 (1984) <https://www.ncbi.nlm.nih.gov/pubmed/?term=skretvedt+facial>
13. OSHA Inspection Procedures for Respirator Protection 02-00-158 (page 27)
https://www.osha.gov/OshDoc/Directive_pdf/CPL_02-00-158.pdf