



ANSI Z88.6 American National Standard for Respiratory Protection - Respirator Use Physical Qualifications For Personnel

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ANSI Z88.6 - PRESENTATION OBJECTIVES

- Provide information and guidance to assist in the evaluation of determining the medical suitability of respirator users
- Identify important data collected by ES&H professionals to document work conditions impacting physical qualification
- Discuss medical evaluation criteria including frequency intervals, general considerations and temporary disqualification conditions





ANSI Z88.6 - TEN MAJOR SECTIONS

- | | |
|-------------------------------|-----------------------|
| 1. Scope and Purpose | 6. Qualifications |
| 2. Normative References | 7. Evaluation Reqmts |
| 3. Definitions | 8. Medical History |
| 4. Respirator Characteristics | 9. Medical Evaluation |
| 5. Medical Eval Rationale | 10. Special Testing |
- [4] Annexes: Informative





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ANSI Z88.6 - SCOPE and PURPOSE

SCOPE

- Medical evaluation of respirator users
- Does not apply to medical surveillance or biological exposure monitoring

PURPOSE

- Provide information and guidance to PLHCP for determining the medical suitability of personnel for respirator use
- Provide for use of clinical judgment in applying guidelines

EXCEPTIONS

- Consider OSHA Expanded Health Standards and different regulations





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ANSI Z88.6 – SUMMARY of CHANGES

- **Increased collection of data from work place**
- **Integration of respirator characteristics, work demand [occupational environment] and medical factors in medical determination**
- **Temporary Disqualification Criteria: Physician evaluation requirements**
- **Collection of Biometrics: Blood Pressure, BMI, Pulmonary Function, Resting Pulse**





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ANSI Z88.6 – SUMMARY of CHANGES

- **Expanded Medical Questionnaire**
- **Medical determination: Class 1-5**
- **Annual evaluation of SCBA users of all ages**
- **Improved guidance on special testing: Spirometry and EST**
- **Increased consideration to heat stress potential and use of CPC/PPE**





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ANSI Z88.6 - NORMATIVE REFERENCES

- **ANSI Z88.6: American National Standard for Respiratory Protection - Respirator Use Physical Qualifications for Personnel**
- **ANSI Z88.2: Standard for Respiratory Protection**
- **ANSI/AIHA Z88.10: Respirator Fit Test Methods**



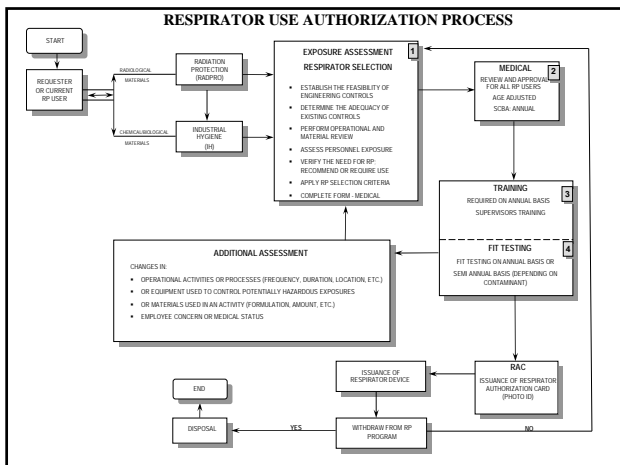


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ANSI Z88.6 - NORMATIVE REFERENCES

- **ANSI/CGA G-7.1: Commodity Specification for Air**
- **OSHA: 29 CFR 1910.134 Respiratory Protection**
- **NIOSH: 42 CFR Part 84, NIOSH Certified Personal Protective Equipment (formerly Title 30 Part 11)**
- **NIOSH: Respirator Selection Logic**







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ANSI Z88.6 AUTHORIZATION for USE

**WORK DEMAND
OCCUPATIONAL ENVIRONMENT**



RESPIRATOR TYPE MEDICAL FACTORS





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ANSI Z88.6 - RESPIRATOR CHARACTERISTICS


AIR-PURIFYING

- > Non-Powered (Negative-Pressure)
- > Powered (Positive-Pressure)

AIR-SUPPLIED

- > Open-Circuit SCBA
- > Closed Circuit SCBA
- > Supplied-Air Respirators






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ANSI Z88.6 - RESPIRATOR CHARACTERISTICS

CLASSIFICATION: Atmosphere-Supplying	CLASSIFICATION: Air-Purifying
Types	Types
Self-Contained Breathing Apparatus (SCBA)	Full Face Respirator
Supplied-Air Respirator (Airline)	Half Face Respirator
Escape SCBA	Quarter Face Respirator
	Single Use/Disposable Respirator
	Powered Air-Purifying Respirator
	Gas Mask





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ANSI Z88.6 – RESPIRATOR CHARACTERISTICS





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ANSI Z88.6 OCCUPATIONAL ENVIRONMENT

Respiratory Hazard

Oxygen Concentration
Contaminant(s)
Physical State(s)
Particle Size
Oil
Concentration
PEL/TLV
IDLH Concentration
Expanded Hlth Stnd

Hazard Analysis/OEA

Work Demands/L of A
Operational Information
Monitoring Data
PPE/CPC
Skin Absorption/Irritation
Eye Irritation
Warning Properties
Odor Threshold
Temperature
Humidity
Engineering Controls
Ventilation: Certified
Administrative Controls
Frequency/Duration
Special Considerations

Respirator Type Required

Minimum Acceptable
Alternative (optional)
Worker Comfort
Mobility/Convenience
Sorbent Efficiency
Assigned Protection Factor
Weight
Inhale/Exhale Resistance
Escape – Fresh Air





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ANSI Z88.6 - MEDICAL EVALUATION RATIONALE

- **Medical Evaluation: Physical work effort, Protective clothing, Humidity, Temp°, Physiologic burden**
- **Recommendations: Elevated work, High altitude, Obscured vision, High voltage, Communication**
- **Endure stressors without medical consequences**
- **Limitations: Medical or Work place conditions**





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ANSI Z88.6 - QUALIFICATIONS (of Persons Who Conduct Medical Evaluations to Determine Suitability to Use Respiratory Protection Devices)

Medical evaluations shall be performed by (PLHCP)

- > Physician or
- > Licensed Health Care Professional (Nurse Practitioner, PA, OH Nurse)

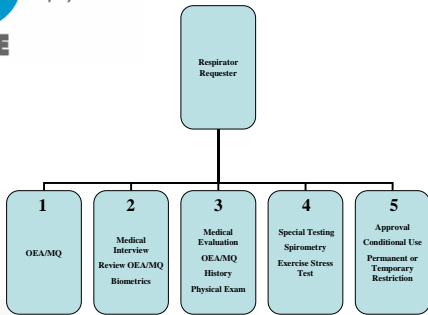
LHCP must consult with Physician for questions on physical condition and capability





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ANSI Z88.6 – MEDICAL PROCESS SUMMARY





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ANSI Z88.6 - EVALUATION REQUIREMENTS

ES&H Communication Requirements to PLHCP [7]

- a. Type and weight of respirator:
 - Inhalation/exhalation resistance
 - Special features: Size, shape, bulk, full face, hood, etc.
- b. Frequency and duration of respirator use
- c. Physical work effort (Level of activity)





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ANSI Z88.6 - EVALUATION REQUIREMENTS

- d. Protective clothing and equipment**
- e. Temperature and humidity extremes**
- f. Copy of written RP Program**
- g. Copy of 29 CFR 1910.134 Final Rule**





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ANSI Z88.6 - EVALUATION REQUIREMENTS

ES&H Communication Recommendations to PLHCP

- **Extent of usage: Daily, Occasional [wk], Rarely [annual], Emergency Only**
- **Special Responsibilities - Safety of Others
Rescue, Fire, Security, Hazmat, Nuclear**





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ANSI Z88.6 - EVALUATION REQUIREMENTS

ES&H Communication Recommendations to PLHCP

- **Frequency for each type of “emergency situation” involving IDLH risk**
- **Special environmental conditions: Excessive heat, Confined space, Protective clothing**
- **Exposure agents: Routine and Emergency**





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ANSI Z88.6 - EVALUATION REQUIREMENTS

Medical Determination

- **PLHCP certifies individual under the work circumstances described with consideration to respirator type**
- **Physical demands (Level of work activity) shall be the limiting factor**



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ANSI Z88.6 - EVALUATION REQUIREMENTS

PLHCP Classification Categories

- Class 1 – No Restriction**
- Class 2 – Conditional Use (subject to restrictions, evaluations, and/or treatments)**
- Class 3 – Permanent Restriction (no disclosure)**
- Class 4 – Temporary Restriction; additional evaluation and/or treatment**
- Class 5 – Non-Respirator Work Restrictions**



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ANSI Z88.6 – MEDICAL HISTORY

Information that may prompt the Examiner concern

- **Ability to work safely**
- **Sudden incapacity**

Risk Factors: CAD, Musculoskeletal, Neurological, Psychological, Endocrine disorder, Dermatological disorder, and/or Significant obesity



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ANSI Z88.6 – MEDICAL HISTORY

Expanded “Medical Questionnaire” (MQ)

1. **Previously diagnosed disease (cardiovascular or respiratory)**
2. **Psychological problems – Claustrophobia**
3. **Breathing problems during normal work**



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ANSI Z88.6 – MEDICAL HISTORY

Expanded “Medical Questionnaire” (MQ)

4. **Past problems with respirator use**
5. **Past/current usage of medication**
6. **Physical deformities**
7. **Known current pregnancy**



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ANSI Z88.6 – MEDICAL HISTORY

- **MQ exceeds the current minimum requirements of OSHA; assess the risk of cardiac disease**
- **A positive response [“yes”] on the MQ must be followed by an interview with a PLHCP**
- **Evaluation (scope and testing content) after the interview at the discretion of PLHCP**



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ANSI Z88.6 – MEDICAL HISTORY

- Only the PLHCP determination on respirator use may be communicated to the employee and their supervisor (no medical information)
- If the worker elects to share “Confidential Medical Information” [MQ], written authorization of the worker must be obtained





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ANSI Z88.6 – MEDICAL EVALUATION

An initial evaluation is performed using the MQ OR interview and examination

Additional evaluations are required:

1. Individual reports concern
2. Request from PLHCP, Supervisor, or RPPA
3. Information collected from the RP Program
4. Change in workplace conditions





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ANSI Z88.6 – MEDICAL EVALUATION

ANSI advises “periodic” MQ

- Annual frequency to align with fit testing
- Age-specific frequency

SCBA Users: Annual evaluations required for all ages





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ANSI Z88.6 – MEDICAL EVALUATION

Temporary Disqualification Criteria

7. Pulmonary function: FVC or FEV1 < 60%

Moderate impairment or worse

**1984: If FVC < 80% or FEV1 < 70% of predicted
“Respirator use restriction should be considered”**

- > **History of CAD, Obesity [BMI > 30], or Multiple RF**
- > **Resting Pulse: < 40 or > 100**



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ANSI Z88.6 – MEDICAL EVALUATION

Temporary Disqualification Criteria

**Cleared: EST at known Level of Work
OSHA “Work Effort”**

- > **Light <3 METS [OSHA: <200kcal/hr]**
- > **Moderate <5 METS [OSHA: 200-300kcal/hr]**
- > **Heavy >5 METS; Demonstrate 10 METS for clearance
[OSHA: >350kcal/hr]**



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ANSI Z88.6 – MEDICAL EVALUATION

Temporary Disqualification Criteria

8. Neurological disability

9. Medications

10. Psychological conditions

- > **Impaired judgment**
- > **Reliability**



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ANSI Z88.6 – MEDICAL EVALUATION

Temporary Disqualification Criteria

11. Olfaction – Ability to detect respirator failure

Adequate Vision and Hearing

- > Alarms
- > Instructions

12. Loss of consciousness or Response capability



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ANSI Z88.6 – SPECIAL TESTING

Additional information beyond History and Physical

- > Spirometry – Integrate recommendations of American Thoracic Society
- > Exercise Stress Testing



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ANSI Z88.6 – INFORMATION

> SNL/NM Respiratory Protection Medical Review Process Summary

> NIOSH: Specific Medical Tests (Publ # 2005-110)

> ANSI Committee Members

Chair: Dr. Ronald Mack ronald.mack@pseg.com

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