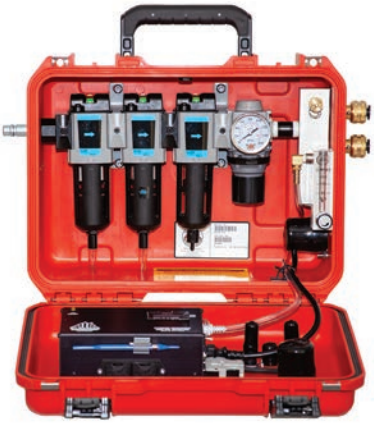
What is Grade-D Air Quality?

Breathing air quality standards have been developed by ANSI/Compressed Gas Association (CGA) G-7.1 - 1989, and adopted by OSHA under their respiratory standard 29 CFR, 1910.134 (i) (1) (ii).

Air Quality Must Meet the Following Requirements:

- Oxygen: 19.5%-23.5% (20%-22% Canada)
- Hydrocarbon (condensed oil): 5 mg/m^3 maximum (<1 mg/m^3 in Canada)
- Carbon Monoxide (CO): 10 ppm maximum (5 ppm in Canada)
- Carbon Dioxide (CO_2): 1000 ppm maximum (500 ppm in Canada)
- Odor: No noticeable odors, tastes, or smells
- Water Content:
  - **High pressure cylinder air** must have a dew point of at least -50°F (-45.6°C) at 1 atmosphere (14.7 psi).
  - **Low pressure breathing air** must have a dew point of at least 10°F (5.6° C) below the ambient temperature at 1 atmosphere (14.7 psi)
  - **Canada:** 5°C below lowest temperature, 27 ppm maximum water vapor
- Total Volatile Hydrocarbons (Canada): 5 ppm maximum

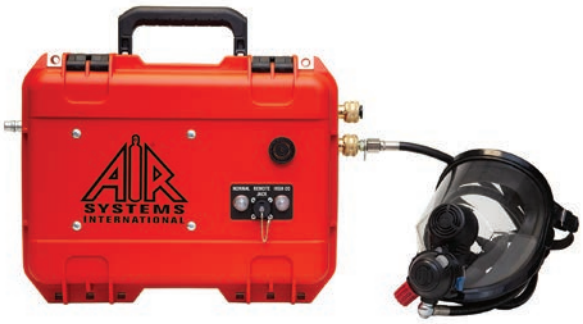


Elements of a Type-C/CE Supplied Air System

All airline respirators are Type-C or Type-CE.

CE designates an airline respirator approved for abrasive blasting.

Note: Type-C/CE is a NIOSH designation for an air supplied breathing air respirator system.



A Type-C/CE System Consists of the Following Components:

Using Compressed Air

Compressed Air Source
Electric / Gas / Diesel Compressor or Compressed Air Cylinder(s)

→

Filtration
Grade-D Breathing Air with Carbon Monoxide Monitoring (Portable or Fixed System)

→

Air Distribution
Consists of: Air Pressure Regulator, Pressure Gauge, Safety Relief Valve, and Approved Respirator Couplings. The Assembly is Called the Point of Attachment (POA)

→

Respirator
From the Point of Attachment (POA), Maximum 300 Feet of NIOSH Approved Breathing Air Hose with Approved Couplings

→

or

→

→

Using Cylinder Air

Cylinder Air Must Be Grade-E Air Quality

→

Air Distribution

→