

It is a legal requirement to ensure that the quality of breathable air being supplied to an operator is at a suitable standard.

The objective of these legal requirements

To ensure the respiratory safety of operatives entering and working in areas considered to be hazardous to health.

Criteria for breathing air

- BS EN 12021:1999
- BS 529:2005 (supersedes BS 4275-1997)
- COSHH Regulations
- DEF STAN 68 - 284/2
- HTM 2022



COSHH states that

'As an employer, there is a clear responsibility under the requirements of the HSE to provide fit for purpose safety equipment for all employees that may work in an environment or carry out a process which may be hazardous to the employee's health. Should an employer fail to provide and maintain this equipment, they will be liable for any damages claimed by an affected employee.'

The Requirements

- BS 529:2005 states that in the case of compressed air for breathing apparatus *'the volume flow and quality of the air should be thoroughly tested at intervals as specified by a competent person'*. COSHH regulations state that *'testing should be conducted at least once every 3 months and more frequently when the quality of the air supplied cannot be assured'*.
- Any defects observed should be remedied before further use.
- Testing must not only be completed but must also be documented and records retained for a minimum of 5 years.



How can we assist in maintaining these standards?



The table below illustrates the maximum permissible limits of contaminants found in the air as specified in BS EN 12021:1999.

SUBSTANCE	BS EN 12021:1999
Oxygen	21% +/- 1%
Carbon Monoxide	Must be as low as possible but not more than 15 ml/m
Carbon Dioxide	Not more than 500 ml/m
Oil (droplets or mist)	Not more than 0.5 mg/m
Contaminants	Should your site's COSHH risk assessment require that tests are conducted on any specific contaminant levels, these can be conducted, on request. BS EN 12021:1999 requires that: <i>Compressed air for breathing apparatus shall not contain any contaminants at a concentration which can cause toxic or harmful effects. In any event all contaminants shall be kept to as low a level as possible and shall be far below the national exposure limit.</i>
Water	The acceptance criteria under BS EN 12021:1999 is: <i>Air up to 40 bar for compressed airline breathing apparatus should have a pressure dew point sufficiently low to prevent condensation and freezing. Where the apparatus is used and stored at a known temperature, the pressure dew point should be at least 5°C below the likely lowest temperature. Where the conditions of usage and storage of the compressed air supply is not known, the pressure dew point should not exceed -11°C.</i>



- The tests on your breathing air supply points will be conducted using bespoke technology ensuring that the quality of the air meets the requirements of the relevant standards.
- Analysis of each test is issued to you in the form of a test certificate for your records.
- Defence standard breathing air quality testing is carried out on site. This involves a particulate count test and a more detailed gas, odour and oil/mist analysis being conducted to DEF STAN 68 - 284/2.
- EH40/2005 Occupational Exposure Limit breathing air tests can also be conducted on site. These tests analyse the concentrations of hazardous substances in the air found when conducting hazardous processes.

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