Fit Testing for Respiratory Protection

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Dräger

Technology for Life

Choosing the right mask is crucial

Each face is different

When it comes to respiratory protection equipment, health is top priority. Even though Dräger masks and filters provide effective protection against particles and gases in the ambient air, it is important to note that only an appropriately fitting mask can provide a high level of protection. The use of inappropriate or poor fitting respiratory protection can give false sense of security – possibly with serious consequences to the wearer's health.

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Why fit testing is important

Sits, fits, protects

One of the main reasons why respirators often do not provide the expected protection is an inadequate fit. Dräger's comprehensive range of fit testing options offers you the assurance that all your employees are optimally protected by a custom-fit mask.

According to the requirements laid out in the Health & Safety Executives (HSE) guidance note HSE INDG 479 and HSG53 care must be taken to ensure that respirators fit perfectly.

By performing fit tests and determining the so-called fit factor, you can be sure that you meet these requirements.

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When should fit tests be performed?

Various changes, particularly to the mask or the wearer, can have an impact on the protection level:

The following factors provide orientation:
- weight changes
- major dental treatments
- facial piercings
- new PPE that may affect the seal fit
- change of mask types, models or materials

How can user safety be improved?

In addition to fit tests, proper training of the wearer plays a fundamental role.

Important factors are:
- the visual inspection of the mask
- correct donning
- the performance of fit checks before each use

What further factors influence the fit?

If the mask is the wrong size or has an unsuitable shape, it will not provide adequate protection.

Further factors are:
- incorrect fit of the mask
- beard growth
- speaking, sneezing, laughing and other facial movements

Your fit testing options

Qualitative fit testing

A qualitative fit test checks the sealing of respirators using a substance that the tested person can taste or smell.

Quantitative fit test

A quantitative fit test provides objective results. These are either formed with the help of a particle counter – namely by the ratio of particles in the ambient air to the particles inside the mask – or by measuring leakages with the help of a controlled negative pressure.

Fit testing training

For those who wish to perform fit tests independently, Dräger offers a customized seminar. This seminar provides you with the necessary knowledge as to know how to perform accurate fit tests.

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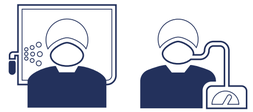
Your advantages at a glance



Qualitative and quantitative testing

Proven supplier of respiratory protection

Individual training

Expert knowledge

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Qualitative fit tests

In a qualitative fit test, the sealing of respiratory protection is tested using a substance that can be perceived by taste. The test includes a series of prescribed exercises that must be completed, such as normal and deep breathing, movement of the head (turning and lifting), leaning forward and speaking. This is to simulate normal movement during the activity in which the respirator is worn. The qualitative fit test can be used to test particle-filtering in half masks of all types.

Procedure

1. A sensitivity test is performed to ensure that the tested person is aware of the substance.

2. The particle-filtering half mask is put on and a special hood is then placed on the subject‘s head to create a closed-air atmosphere.

3. The test substance is sprayed into the hood and the test person indicates whether he/she detects it or not.

Results

If the subject does not indicate that he/she detects the substance during the test, he/she has passed the test with this particular mask type and size.

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Quantitative fit tests

A quantitative fit test provides objective results based on accurate measurements using a particle counter. As with the qualitative fit test, movement, breathing, and speech exercises are also carried out during the quantitative fit test, which simulate a realistic use of respiratory protection.

Procedure

There are several possibilities:

1. In one possible method, the number of particles inside the mask as well as in the ambient air is measured. A particle counter is used to correlate the measured values.

2. In another method, a controlled negative pressure is created inside the face mask and the leakage is measured.

Results

The result of the tests with the selected method is referred to as the fit factor. If the required factor is not achieved, the subject must select a different mask size or perhaps even a different, more suitable mask model.

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Fit testing seminars

For those who wish to perform fit tests independently, Dräger offers customised seminars. This include test methods, test setup and execution, and failure analysis.

Course content

- Test methods
- What is the fit factor?
- Preparation for a test
- Manual operation of a PortaCount®*
- Performing a fit test
- Troubleshooting
- Practical demonstrations
- Practical evaluations

*Respirator Fit Tester PortaCount 8040 of the brand TSI

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Frequently asked questions

What is the difference between a fit test and a fit check?
A fit test uses test substances and/or a device to check the sealing of a mask when performing certain exercises, while a fit check ensures that the mask fits properly before each use. A fit check does not replace a fit test.

Do FFP masks need to be tested?
Yes. Filtering facepiece masks are considered half masks and must be tested as such.

What is the difference between a quantitative and a qualitative fit test?
The passing or failing of a qualitative fit test depends on whether the test person can taste or smell the test substance or not and thus provides subjective results.
A quantitative fit test provides objective results by using a particle counter or controlled negative pressure to measure the sealing of the mask.
Both methods are acceptable. So you can choose the method that is most appropriate for the respirator being used and the individual wearer.

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About Dräger

Technology for life is our conviction. For more than 100 years, Dräger has been protecting human respiration: Already in 1905, Dräger began to develop air purification systems for submarines. And since we've come a long way in the field of filtering respirators. Today, Dräger provides light respiratory protection to professional users all over the world and is a reliable partner for companies of various sizes in many industries.
In addition, Dräger has more than 40 years of experience in training and education. This enables us to provide the knowledge that individuals and organizations need for their daily challenges in the workplace.

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