Fit test for AirGuard Pro

Face-seal check for half masks, full-face masks and disposable respirators: how to verify in the workplace that a mask really seals on the wearer's face. With a record sheet for your files.

> **Important.** This guide does not replace the instructions for use of the mask or the instructions of the fit test kit you use. Whether and how often a fit test is carried out at your site is set in the risk assessment, together with your occupational safety specialist and occupational physician, in line with the national rules that apply to you.

1. Why a fit test?

A tight-fitting respirator protects only if it seals on the face. If air leaks past the edge, unfiltered air reaches the airways, even with a perfect filter. The instructions for use of the AirGuard Pro masks therefore require a seal check before every use and call for a fit test.

Check	What is checked?	When?
Seal check (user seal check)	Quick self-check by the wearer: does the mask seal now? It does not check whether the model suits the face, only the current fit.	Every time the mask is put on
Fit test	Systematic check, with exercises, whether model and size suit the person's face. Here: qualitative bitter test.	On first issue, on a new model or size, after changes to the face

2. Requirements

- **Face:** no beard, sideburns or deep scars in the sealing area. A person who is not clean-shaven cannot be tested.
- **Mask:** the model that will be worn at work, in a suitable size. Wear any other protective equipment that may affect the fit (safety glasses, helmet, hearing protection).
- **Filters during the test:** fit particle filters of class P3 so the bitter agent cannot enter through the filter: half mask AG360 / AG360W with AGP3R1 or AGP3R2, full-face mask AG700 with AGP3R1, AGP3R2 or AGP3R. FFP2 and FFP3 disposable masks are tested as they are, without an extra filter. Gas filters alone are not suitable for the test.
- **Kit:** a qualitative bitter test kit with hood, hood collar, two sprayers and two test solutions (sensitivity solution and fit test solution). Tell the person what the solution contains (water, salt, bitter agent) before the test. You can ask us about a kit through the *advice request* on airguardpro.eu.
- **Fasted:** for 15 minutes before the test: no eating, no drinking (except water), no chewing (including chewing gum).

3. Step 1: seal check every time the mask is put on

Half mask AG360 / AG360W and full-face mask AG700

1. Put the mask on as described in the instructions for use and tighten the straps.
2. Cover the exhalation valve in the centre with both palms and exhale slowly.
3. If air escapes at the edge, reposition the mask and tighten the straps. Repeat until the mask seals.

Disposable masks FFP1 to FFP3

1. Press the nose clip exactly over the nose and squeeze it gently until the mask fits.
2. Cup the mask with both hands and exhale forcefully.
3. If air escapes at the nose, press the clip down harder; otherwise move or shorten the elastic bands.

4. Step 2: fit test with bitter agent (qualitative)

A. Sensitivity test (without a mask)

This establishes whether the person can taste the bitter agent at all. Without it the fit test is not meaningful.

1. The person wears only the hood, no mask. Keep about 10 cm between the face and the hood window.
2. They breathe through a slightly open mouth with the tongue slightly extended.
3. The tester sprays the sensitivity solution into the hood ten times (sprayer upright, bulb down, fully squeeze and fully release the bulb each time).
4. If the person tastes bitterness, they raise a hand: the test is over, the threshold is **10**. If not, ten more sprays (threshold **20**), then ten more (threshold **30**).
5. If nothing is tasted after 30 sprays, the person is not sensitive: choose another test method.
6. Remove the hood and drink water until the taste is gone.

B. Fit test (with the mask)

1. Put on the mask with P3 filter and carry out the seal check (step 1). Wear any other protective equipment needed for the job.
2. Put on the hood. The person breathes through a slightly open mouth, tongue slightly extended.
3. Spray the fit test solution as many times as in the sensitivity test (10, 20 or 30 sprays, at least 10).
4. Every 30 seconds spray half the initial number again to keep the concentration in the hood constant.
5. After spraying, the person performs seven exercises of **60 seconds** each:

No.	Exercise	How
1	Normal breathing	Standing, normal breathing, no talking
2	Deep breathing	Standing, slow deep breaths, do not over-exhale
3	Turn head	Slowly turn the head to one limit, then the other; inhale at each limit
4	Move head up and down	Slowly lower the head, then raise it; inhale at the raised position
5	Talking	Read a passage aloud, loudly and slowly
6	Bending	Touch the feet with both hands, or jog in place
7	Normal breathing	Standing, normal breathing, no talking

C. Evaluation

- **Bitter taste at any time** (hand raised): fail. Stop the test, the person waits 15 minutes and repeats the sensitivity test.
- The person readjusts the mask and the test is repeated. If bitterness is tasted again, the person needs a different model, size or design.
- **No bitter taste through all exercises:** pass. The mask seals for this person. Record it.

5. Repeat, clean, store

- **Repeat** for a new mask model or size, after changes to the face (marked weight change, dental work, scars, surgery) and at the interval set in the risk assessment.

- **Kit:** after each test or after 4 hours of use, pour the solution out of the sprayers, never back into the stock bottle. Rinse sprayers with warm water and air-dry. Wipe the inside of the hood with a damp cloth.
- **Mask:** clean and disinfect after the test as described in the instructions for use (warm water up to 50 °C, neutral detergent, soft brush). Do not pass it on uncleaned.
- **Solutions:** store cool and dry (−20 to +30 °C, below 80 % humidity), out of sunlight and out of the reach of children. Do not use discoloured or contaminated solution. Crystals dissolve in a warm water bath or by shaking vigorously.

6. Sources

- Instructions for use of the AirGuard Pro masks AG360 / AG360W, AG700 and the disposable masks 6100, 6201, 6203, 6311, 6311C, 6312.
- DGUV Rule 112-190 "Use of respiratory protective devices" (Germany, November 2021).
- Qualitative bitter test procedure according to the instructions of the test kit. Fit test methods are described internationally in ISO 16975-3.

AirGuard Pro is a brand of DS SafetyWear Arbeitsschutzprodukte GmbH · Deutz-Mülheimer-Str. 121 · 51063 Cologne, Germany · info@dssafetywear.de · airguardpro.eu

Fit test record

Qualitative bitter test. One record per person tested, keep in your files.

DATE _____ COMPANY / DEPARTMENT _____

NAME OF PERSON TESTED _____ TESTER _____

Mask (article)	☐ AG360 ☐ AG360W ☐ AG700 ☐ 6100 ☐ 6201 ☐ 6203 ☐ 6311 ☐ 6311C ☐ 6312
Size / design	
Filter during test	☐ AGP3R1 ☐ AGP3R2 ☐ AGP3R ☐ disposable mask, no filter
Other PPE worn	☐ safety glasses ☐ helmet ☐ hearing protection ☐ none
Face free of beard / sideburns	☐ yes ☐ no (test not possible)
15 minutes fasted	☐ yes
Seal check passed	☐ yes ☐ no
Sensitivity test	Threshold: ☐ 10 ☐ 20 ☐ 30 ☐ not sensitive (use another method)

No.	Exercise (60 s each)	passed	bitter taste noted
1	Normal breathing	☐	☐
2	Deep breathing	☐	☐
3	Turn head left and right	☐	☐
4	Move head up and down	☐	☐
5	Talking (read aloud)	☐	☐
6	Bending or jogging in place	☐	☐
7	Normal breathing	☐	☐

Result	☐ **pass** (mask and size suitable) ☐ **fail** (try another model, size or design)
Retest	Second attempt after readjusting: ☐ yes ☐ no Result: _____
Next fit test due	on _____ (as set in the risk assessment)
Notes	

SIGNATURE PERSON TESTED _____ SIGNATURE TESTER _____

The record belongs with the risk assessment documents. Retention period as set by your company. AirGuard Pro · DS SafetyWear Arbeitsschutzprodukte GmbH · airguardpro.eu