

Report of the stakeholders meeting on respiratory protective equipment fit testing, held at the Health and Safety Laboratory, 22 April 2005

1. BACKGROUND

The introduction of the requirement for fit testing of tight fitting facepieces has resulted in significant benefits to the employers, respiratory protective equipment (RPE) manufacturers and most importantly the RPE wearers. The benefits include that the wearers are provided with correctly fitting facepieces and they have become more aware of the need to correctly don the facepieces and how to check the fit of the facepieces. These actions can significantly reduce the exposure to hazardous substances, which leads to significant reduction in workplace related ill health.

Over the last few years, the Health & Safety Executive (HSE) have received representations on various issues relating to fit testing, including:

- The need for repeat fit testing;
- Frequency of repeat fit testing;
- Competency of the fit test providers;
- Clean-shaven policy for tight fitting facepieces;
- Fit testing of self-contained breathing apparatus and loose fitting facepieces.

To debate these issues HSE invited stakeholders involved with RPE fit testing to participate in a meeting to openly discuss the above issues and to enable HSE to gather opinions from employers, RPE wearers, trade unions, H&S professionals, fit test providers and manufacturers.

2. REPRESENTATION

78 people attended the meeting.

The following sectors were represented:

- RPE manufacturers
- RPE fit testers
- RPE users
- Occupational hygiene bodies
- Asbestos removal industry
- Emergency services
- Healthcare profession
- Office of the Deputy Prime Minister (ODPM)
- Health & Safety Executive (HSE)
- Health & Safety Laboratory (HSL)

3. WELCOME AND INTRODUCTION

Dr Bob Rajan-Sithamparanadarajah (HSE) opened the meeting and welcomed all the delegates. He explained the purpose of the meeting and set out the meeting's aims:

- Opportunity for an open discussion with stakeholders
- To enable HSE to gather opinions from employers, RPE wearers, trade unions, H&S professionals, fit test providers and RPE manufacturers
- To understand the problems encountered
- To improve the consistency of application and quality of RPE fit testing.

The following issues were discussed:

- Repeat fit testing
- Competency
- Fit testing of escape RPE and SCBA
- Clean-shaven policy
- Open discussion

4. REPEAT FIT TESTING

Dr Martin Gibson (HSE) opened the discussion on repeat fit testing by giving the background to the introduction of RPE fit testing into the HSE Control of Asbestos at Work Regulations (CAW) Approved Codes of Practice (ACoPs). He explained the current position with regard to the need for a repeat fit test, talked about HSE experience of repeat fit testing and presented the results of a small HSE study. The presenter emphasised that RPE is a critical control means and questioned whether a one-off check i.e. an initial fit test, is a sustainable position for all RPE in all circumstances. For asbestos removal, RPE is provided as the basis of control every single workday. It is not just a case of the equipment being in good condition and properly maintained etc., the correct fit must also be obtained. The face fit test for selecting a correctly fitting facepiece is therefore fundamental in the control regime.

The following questions were raised and debated:

Q1. Is there a need for repeat face fit testing?

A number of delegates including fit testers and users gave their experience of repeat fit testing. There is not a great deal of repeat fit test data available but those that have carried out repeat fit tests tend to find only a small number actually fail a repeat fit test. However, what was found was that users forget how to correctly don and use the RPE. Many delegates expressed concern that training can be poor and saw the main role of repeat fit testing as a tool to reinforce training. This view was well supported by all at the meeting.

It was mentioned by some delegates that the current requirements in the HSE ACoP i.e. weight loss/gain, dentistry etc., is ambiguous and that is hard to establish whether a retest is needed or not.

Dr Bob Rajan-Sithamparanadarajah stated that the requirement for periodic repeat fit testing, on any basis, would have to be justified on cost-benefit. HSE will continue to gather information on repeat fit testing and will write to fit test providers seeking supporting evidence; fit test providers were requested to assist in this data gathering exercise. In the short term, the current requirements for repeat fit testing will remain, however HSE will be considering the need for repeat fit testing for asbestos workers during the review of the CAW ACoP.

Consensus: Fit testing should be repeated.

Action: HSL will write to all fit testers requesting information – Mike Clayton/Shirley Frost

Q2. If yes, what should be the criteria?

– Fixed period e.g. annual or biannually?

– Risk based? (i.e. based on hazard, frequency of use, type of RPE)

The fit of a facepiece is important regardless of risk. For a low risk, (low hazard) a lower classification of RPE may be selected, however, face fit is still essential. Many thought HSE should stipulate a frequency rather than have the need for a repeat fit based solely on a risk assessment. A few commented that many people still do not carry out proper risk assessment required by law.

One idea raised at the meeting was that whilst specifying a fixed period across all industries would set a level, this might not be cost-effective in all cases. Perhaps a category of risk be introduced:

Category 1 high risk	- annual retest
Category 2 medium risk	- biannual retest
Category 3 low risk	- other period

Many agreed that fit testing plays an important role in training and therefore would like to see a specified period rather than risk-based.

Consensus: Specified frequency e.g. annually, rather than risk-based.

Action: None required.

Q3. What should be the frequency of repeat testing? Annually or biannually

The meeting heard examples of current policies on repeat fit testing from a variety of industries. The nuclear industry have adopted a 2-year period for repeat fit testing as this is practicable given the numbers involved, whereas annual requirement may cause problems. The offshore industry carries out repeat fit testing annually. The pharmaceutical industry operates a risk based retest that was generally 1-3 yearly. A police authority operates annual retest based on internal guidance.

Consensus: Fit test annually.

Action: none required at present, but HSE will look at the way to take this forward.

Q4. Should employees have a new fit test on moving to a new employer, even if the facepiece of the same make, type and model?

A representative of the healthcare profession explained the problems faced with staff moving often from one health care trust to another, and that retesting would be costly.

Difficulties with fit test certificate 'ownership' were raised; it was explained that occasionally the employer keeps the fit test certificate and does not provide a copy to an employee. It was also mentioned that some fit test certificates were not authentic. More detailed and traceable certificates of a fit test would be welcomed.

Consensus: A fit test should be transferable between employers provided that the employee can provide documented evidence and results for the fit test. For safety reasons, if the fit test certificate cannot be verified, employers should fit test new employees regardless of when they last had a fit test.

Action: None required.

5. COMPETENCY

Mr Mike Clayton (HSL) gave a presentation outlining what HSE believes are the current problems surrounding competency and why correct fit testing is important.

The following questions were raised and debated:

Q1. Do we need to improve the guidance document HSE282/28?

If yes - which sections or issues?

The general feeling of the meeting was that the HSE fit test guidance HSE282/28 does provide the necessary information and that it was possible to follow the guidance. However, several delegates at the meeting, (mostly fit test service providers), stated that some service providers do not follow the guidance and that this results in inconsistency of application and dual standards. One fit test provider stated that they follow the HSE guidance as far as possible to the letter and that this can place them at a disadvantage when quoting for work. There was a desire that HSE should 'police' the quality of fit testing.

One fit test service provider said that HSE 282/28 is a good guidance document, however just reading the guidance is not sufficient in itself to enable someone to adequately carry out fit testing - additional training is essential supported by on-the-job experience. It was commented that guidance is providing the help for employers, and that they can follow equally suitable fit test methods for complying the law.

Consensus: HSE282/28 is acceptable.

Action: None required.

Q2. Should the status of the HSE282/28 be elevated from the guidance section to an ACoP requirement?

It was agreed by most that elevating the guidance into the ACoPs would encourage better compliance with the guidance and help to improve competency among fit testers, but it would not guarantee that it would be adhered to. An H&S consultant to SMEs said that unless the guidance is specified in ACoP, SMEs would not comply with it. Others commented that HSE 282/28 is already considered an ACoP.

Consensus: Raise guidance to ACoP.

Action: HSE to review the implication and benefits of elevating the guidance to ACoP status.

Q3. Should there be an approved training / competency scheme?

If yes - who can/should provide the training? e.g. BOHS, IOSH, HSL/IOM

RPE manufacturers mentioned that training in the use of their products especially on how to correctly don facepieces is vital and should not be overlooked. Fit test equipment supplier and others supported HSE's view (Mike Clayton) that training in the use of fit testing equipment is not the same as training on how to conduct a fit test.

Some delegates would like to see and would support an approved training scheme preferably lead by HSE as the 'standard' setter. Dr Bob Rajan-Sithamparanadarajah said that HSE would probably not run such as scheme but could possibly assist in setting up a scheme.

The representative of BOHS (Hugh Wilson) was asked whether BOHS could assist in running an accreditation scheme. He said that BOHS did not have sufficient resources and would probably need to employ another agency – and that would depend on cost benefits. It was suggested that the Construction Industry Training Board (CITB) might have a suitable system adaptable for fit tester certification. Asbestos Removal Contractors association, BTEC, (Edexcel) were mentioned as being possible partners in a scheme.

Consensus: A training/competency scheme would be welcomed, preferably lead by HSE, but a scheme should not be burdensome to industry.

Action: HSE will pursue possible partners.

Q4. How should the competency be assessed?

What has to be considered when assessing competency?

The following were raised as areas that should be considered when assessing competency:

- Technical knowledge of RPE
- Experience in the use of RPE
- Technical knowledge and experience of fit testing
- On the job experience following training was also regarded as being important

6. FIT TESTING OF ESCAPE RPE AND SELF CONTAINED BREATHING APPARATUS (SCBA)

Mr Damian Stear (HSE) explained the HSE's offshore policy on escape RPE and fit testing. The offshore industry has a high number of employees who may have to wear escape RPE. Due to the transient nature of the workforce, fit testing everyone and each and every visitor in

the varied types of escape RPE is impractical. Emphasis should be placed on training in the donning of escape RPE and on making a quick escape to a safe zone.

The following questions were raised and debated:

Q1. Could this approach (correct donning and practical training) be adopted onshore? If yes, what are the likely problems?

The ACoP does not exclude tight fitting escape RPE from fit testing, therefore care must be taken before dismissing the need for fit testing as this could undermine the purpose of fit testing. In situations where the workforce is stable or the escape apparatus is provided on personal basis, fit testing should be carried out.

Emergency response use such as clean-up operations is 'planned' work, and therefore should be subject to fit testing.

Consensus: This approach could be taken where the employer can demonstrate that fit testing is impractical due to the transient nature of the workforce. Where the workforce is stable then fit testing should be carried out. Always taking account that RPE is in place as a last resort

Action: HSE282/28 will be edited to reflect the HSE's offshore policy.

Q2. Are training models of escape RPE readily available?

No comments were raised on this question.

6.1 FIT TESTING SCBA

Dr Nick Vaughan (HSL) gave a presentation covering the actions taken by the Fire Service and the Office of the Deputy Prime Minister (ODPM) in establishing an alternative fit test method designed around the procedures in place in the Fire Service. The procedure which is referred to as DCOL 2/2004 (Dear Chief Officer Letter) sets out a fit test method which fire-fighters use to assess their facepiece fit at the start of each shift. This fit test procedure is supported by training and supervision within the Fire Service. This procedure was subjected to a validation study and the results of this study presented to HSE.

Dr Nick Vaughan stated that the HSE guidance permits other fit test methods to be used provided that the suitability of those methods can be demonstrated. Users of SCBA could adopt a similar fit test procedure provided that they made their own assessment and could show comparable training and supervision.

A representative of the ODPM emphasised that DCOL 2/2004 was the Fire Service procedure and that other users of SCBA would have to take ownership of the alternative method and independently demonstrate its suitability to HSE.

A BA manufacturer mentioned that developments in BA and ISO standards would, in the future, see BA being able to deliver a greater air flow rate and thus reduce the chance of negative pressures being created inside the facepiece.

Action: None required.

7. CLEAN-SHAVEN POLICY

Dr Bob Rajan-Sithamparamadarajah explained the importance of being clean-shaven when wearing tight-fitting facepieces.

The following questions were raised and debated:

Q1. Should the requirement for being clean-shaven be lifted from guidance to ACoP status?

In general all agreed that facial hair was not complimentary to the use of tight-fitting facepieces. But whilst there is clear evidence that facial hair does reduce face fit and lead to increased leakage, tests have shown that on occasions wearers with facial hair may achieve and adequate face fit. Stubble was recognised as sometimes being worse than many days/week of facial hair. The meeting heard of the difficulties in enforcing a clean-shaven policy offshore.

Consensus: Due to the fact that sometimes a fit test on a wearer with a beard does result in a pass, elevating the clean-shaven requirement into the ACoP may be difficult. Training and awareness were seen as routes to 'enforce' a clean-shaven policy. However it should be noted that no manufacturer (as known to HSE) would recommend the use of a tight fitting facepiece in the presence of beard or hair in the face seal region.

Action: None required.

8. OTHER ISSUES

Mr Mike Clayton gave a presentation on common problems and issues covering fit test exercises, pass criteria and sample probe positioning. The reasons for HSE recommendations were explained and various questions raised and debated.

Taking each issue in turn:

8.1 FIT TEST EXERCISE

Q1. Should we use all exercises recommended in HSE 282/28?

Some fit test providers stated that they believe the tests exercises to be important and follow HSE's guidance and carry out all the test exercises with the wearer stepping. One fit test provider said that sometimes wearers find the stepping difficult and so they do not ask the wearer to step throughout the test. Another fit test provider suggested that the level of exercise should be selected to suit the type of work, however one delegate pointed out that in some industries the level of physical work can be significant and that an employee could move between different types of work. One delegate suggested that the fit testers could consider alternating the head movements with the stepping test.

Mr Mike Clayton said that where possible the wearer should be asked to step during the fit test, but that the fit tester needs to apply judgement and consider the health and safety of the RPE wearer. The step test should be a steady pace, though from experience people do tend to speed up and so they should be told to slow down.

Consensus: Where possible fit testers should employ the full range of fit test exercises but should not forget the H&S of the RPE wearer.

Action: None required.

Q2. HSE 282/28 requires a pass in each exercise, does this cause a problem?

Mr Mike Clayton explained the differences between the HSE's fit testing requirements and the United State's Occupational Safety and Health Administration's (OSHA) requirements on fit testing. The TSI Portacount is programmed with both these requirements and the fit tester should ensure that the HSE282/28 test protocol is used. The HSE282/28 test protocol requires a pass in each of the seven test exercises.

Many delegates voiced their support for this requirement.

Consensus: A pass should be achieved in each of the fit test exercises.

Action: None required.

8.2 SAMPLE PROBE POSITION

Mr Mike Clayton explained the importance of sample probes and sample location when preparing a facepiece for fit testing.

Q3. HSE 282/28 recommends the use of multiple-hole sampling probes, does this cause a problem?

Many voiced difficulties in obtaining sampling probes and adapters and called for manufacturers to make more available. Other comments related to fact that often purchased sampling adapters needed to be modified with lengths of tubing in order to draw a sample from the correct position within the facepiece. HSE emphasised that the simple flush probes that sit on the inside surface of the mask do not give a representative sample of the concentration of the test agent in the breathing zone. At the very least fit testers should ensure that the sample is drawn from the breathing zone.

Action: None required.

8.3 RPE ZONE

Dr Bob Rajan-Sithamparanadarajah explained the role of an 'RPE Zone'.

Q4. CAW includes an RPE Zone requirement, should this be included into CLAW & COSHH?

Consensus: Yes.

Action: HSE will consider.

9. MAIN QUESTIONS RAISED DURING THE OPEN DISCUSSION

Q1. FFP3 – QNFT pass rate is 100/ APF 20. Why such a high standard?

Dr Bob Rajan-Sithamparanadarajah (HSE) explained that a fit factor of 100 was chosen for quantitative fit testing, as this was comparable to the assumed fit factor of 100 for a qualitative fit test. Fit tests carried out by HSE when fit testing was first introduced did not identify a problem with setting the pass criteria at fit factor of 100. Dr Bob Rajan-Sithamparanadarajah also explained the difference between fit factors and assigned protection factors (APF) and that an APF can only be applied following a successful fit test.

Q2. Is this acceptable to fit test FFP1 respirators with the PortaCount & N95 Companion?

HSE explained that the N95 Companion is suitable for testing FFP2 filtering facepieces but no evidence has been submitted to HSE to demonstrate that the PortaCount and the N95 Companion is suitable for fit testing FFP1. HSE has carried out a small study that may provide an answer this question. In the meantime HSE 282/28 will still not recommend quantitative fit testing for FFP1 filtering facepieces.

Q3. How will new qualitative fit testing devices coming onto the market be validated e.g. solution strength, volume delivered?

The ACoPs and the HSE guidance 282/28 permit alternative methods to be used. The onus is on the manufacturer of the fit test device to demonstrate its suitability.