SPEED OF FIT TESTING WITH THE TSI PORTACOUNT® RESPIRATOR FIT TESTER VS. THE OHD QUANTIFIT™ FIT TESTER

APPLICATION NOTE RFT-008 (A4)

The OSHA ReDon fit test protocol used by the OHD Quantifit fit tester appears to be significantly faster than the OSHA protocol used for the TSI PortaCount® fit tester. However, if all the time spent by each fit test subject is taken into account, the time difference becomes trivial.

There's a lot more to a fit test than the actual "test time" when the subject is attached to the instrument and executes the exercise protocol: In this example, we'll calculate the average time a person spends being fit tested using conservative estimates. Try it using estimates that are appropriate for your organization and you'll see that the two fit test methods are about equal.

Fit Test Speed Comparison

Activity	**TSI PortaCount® Respirator Fit Tester** (minutes)	**OHD Quantifit** (minutes)
Travel time to fit test site:	10	10
Time waiting to be fit tested:	10	10
Orientation time:	5	5
Training time:	5	5
Comfort assessment time:	5	5
Time to perform fit test:	8	4
Travel time back to work:	10	10
Total	**53**	**49**

The details regarding the assumptions made to the above table are shown below.

Test Subject Travel Time

Each person being fit tested has to leave their workstation and go to the place where the fit test will be done. This can vary widely from organization to organization. For some, it may be 1 minute. For others, it could be 30 minutes. And, of course, the same amount of time is likely to be consumed on the return trip after the fit test is done. Travel time is the same no matter what fit test method is used. For this example, 10 minutes each way will be used.

Test Subject Time Waiting to be Fit Tested

After arriving at the fit test site, there is often a delay due to a line of people who got there earlier, waiting for their turn. Sometimes there is no line. Sometimes there is a long line. Fit test managers strive to schedule fit tests so this wait period is zero (good luck with that!). Waiting time is about the same no matter what fit test method is used. For this example we'll use an average wait time of 10 minutes, which represents a line of only 1 or 2 people.

Test Subject Orientation Time

Once the test subject reaches the front of the line, there is time needed for orientation. Orientation is where the test operator explains what the person needs to do, including how to select the size of respirator and details on how to perform the fit test protocol. Orientation time is about same no matter what fit test method is used. We'll use 5 minutes in this example. Note that orientation does not include training on how to properly don the respirator.

Training

Teaching the person how to properly don the respirator is best done well before the fit test. Well managed respiratory protection programs incorporate a training classroom session, set up specifically to train groups of respirator users on all aspects of respirator use, including how to put it on.

However, many organizations provide respirator training at the same time as the fit test, which adds significant time to each test. Training time (if necessary) is the same no matter what fit test method is used. For this example, we'll use 5 minutes for training.

Note that many respirator experts will tell you that 5 minutes is inadequate for the donning training. And you certainly can't teach a person everything they need to know about their respirator in only 5 minutes.

Comfort Assessment Period

OSHA requires the fit test subject to don the respirator and wait 5 minutes before starting the fit test. *This is true for all fit test methods*. The idea is that the test subject and test operator need time to determine that the respirator has been put on in a comfortable manner. It also provides time for the respirator to seal better due to perspiration. Savvy test operators can sometimes minimize this delay by having the people don the respirator while waiting for their turn (assuming there is a line of people and extra respirators). For this example, we'll use the full 5 minutes.

Time to Perform Fit Test

The time to perform the OSHA fit test protocol varies by fit test method. But it's unrealistic to think that every person will pass the fit test on the first attempt. We'll add 1 minute to each fit test to take into account the time lost retesting some people.

For the TSI PortaCount® fit tester, actual test time is slightly longer than 7 minutes (7:15 to be exact). This time is fixed by the fit test software and does not vary. We'll use 8 minutes in this example to account for the test time and retest provision.

For the OHD Quantifit fit tester, the test time will vary. This is because the OSHA Redon protocol requires the test subject to remove the respirator, loosen the straps, and then redon the respirator two separate times. The time this takes depends on the skill of the test subject. Those with previous respirator experience do it faster than those without it. We'll give the Quantifit fit tester the benefit of the doubt, and use 3 minutes for test time. Adding the retest provision gives us an average of 4 minutes.

So, you can see that using conservative assumptions, the productive time "lost" by each respirator wearer is very nearly identical for either the TSI PortaCount fit tester or the OHD Quantifit fit tester.

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TSI Incorporated – Visit our website **www.tsi.com** for more information.

USA	**Tel:** +1 800 874 2811	**India**	**Tel:** +91 80 67877200
UK	**Tel:** +44 149 4 459200	**China**	**Tel:** +86 10 8251 6588
France	**Tel:** +33 4 91 11 87 64	**Singapore**	**Tel:** +65 6595 6388
Germany	**Tel:** +49 241 523030		

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