PHYSICAL PROPERTIES TESTING
FOR CHEMICAL PPE MATERIALS

RESPIREX™

Abrasion Resistance
EN ISO 12974-2

The material is rubbed with an abrasive (sand paper) disc with a pre-set downward pressure (9kPa) and the material is leak-tightness tested after a number of abrasion (rubbing) cycles. Performance ranges from Class 1 (>10 cycles) to Class 6 (>2 000 cycles).

Flex Cracking Resistance
EN ISO 7854 Method B

The material sample is formed into a tube and fixed into a jig, it is then lightly compressed causing it to flex and then straightened. After a number of flexing cycles the sample is then leak tightness tested. Results are averaged for samples in the weft and warp orientation of the fabric (which are at 90 degrees to each other). Performance ranges from Class 1 (leak tight after >500 flex cycles) to Class 6 (leak tight after >50 000 flex cycles)

Low Temperature Flex Cracking Resistance
EN ISO 7854 Method B at -30°C

The method for this test is exactly the same as the one above, but conducted at -30°C. Performance ranges from Class 1 (leak tight after >100 flex cycles) to Class 6 (leak tight after >4 000 flex cycles)

Trapezoidal Tear Resistance
EN ISO 9073-4

The material sample is slit and placed in a tensometer which pulls on each side of the material. The material is pre-tensioned to 2N and is then pulled (torn) apart and the peak pulling force recorded. Performance ranges from Class 1 (>10N) to Class 6 (>150N).

Puncture Resistance
EN 863

A material sample is punctured with a 'standard' spike and the peak force during the test is recorded. Performance ranges from Class 1 (>5N) to Class 6 (>250N).

Tensile Strength
EN ISO 13934-1:1999

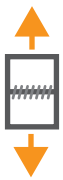
The material sample is placed in a tensometer which pulls on each side of the material. The material is then pulled until it breaks and the peak pulling force during the test is recorded. Results are averaged for samples in the weft and warp orientation of the fabric (which are at 90 degrees to each other). Performance ranges from Class 1 (>30N) to Class 6 (>1 000N).

Resistance to Ignition
EN 13274-4

The material sample is placed edge on to a flame that is 50mm from the fabric for 5 seconds. To pass the test the material should not form droplets and must self extinguish within 5 seconds from removal from the flame.

Resistance to Flame
EN 13274-4 Method 3 modified (inc. pressure drop)

For resistance to flame the material must pass the resistance to ignition test, but samples are then exposed to flame and then leak-tightness tested. Performance ranges from Class 1 (leak tight after passing through the flame) to Class 3 (leak tight after exposure to the flame for 5 seconds).



Seam Strength
EN ISO 13935-2

The material sample is placed in a tensometer with the seam at 90 degree to the direction of pull. The sample is then pulled until it breaks (either the fabric or seam) and the peak pulling force during the test is recorded. (which are at 90 degrees to each other). Performance ranges from Class 1 (>30N) to Class 6 (>500N).

Pretreatment & Conditioning

Testing is carried out on material samples that have been stored at 20°C +/-2°C for 24 hours. Reusable suit fabrics must also go through five cycles of laundering & disinfection according to the manufacturers instructions.

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