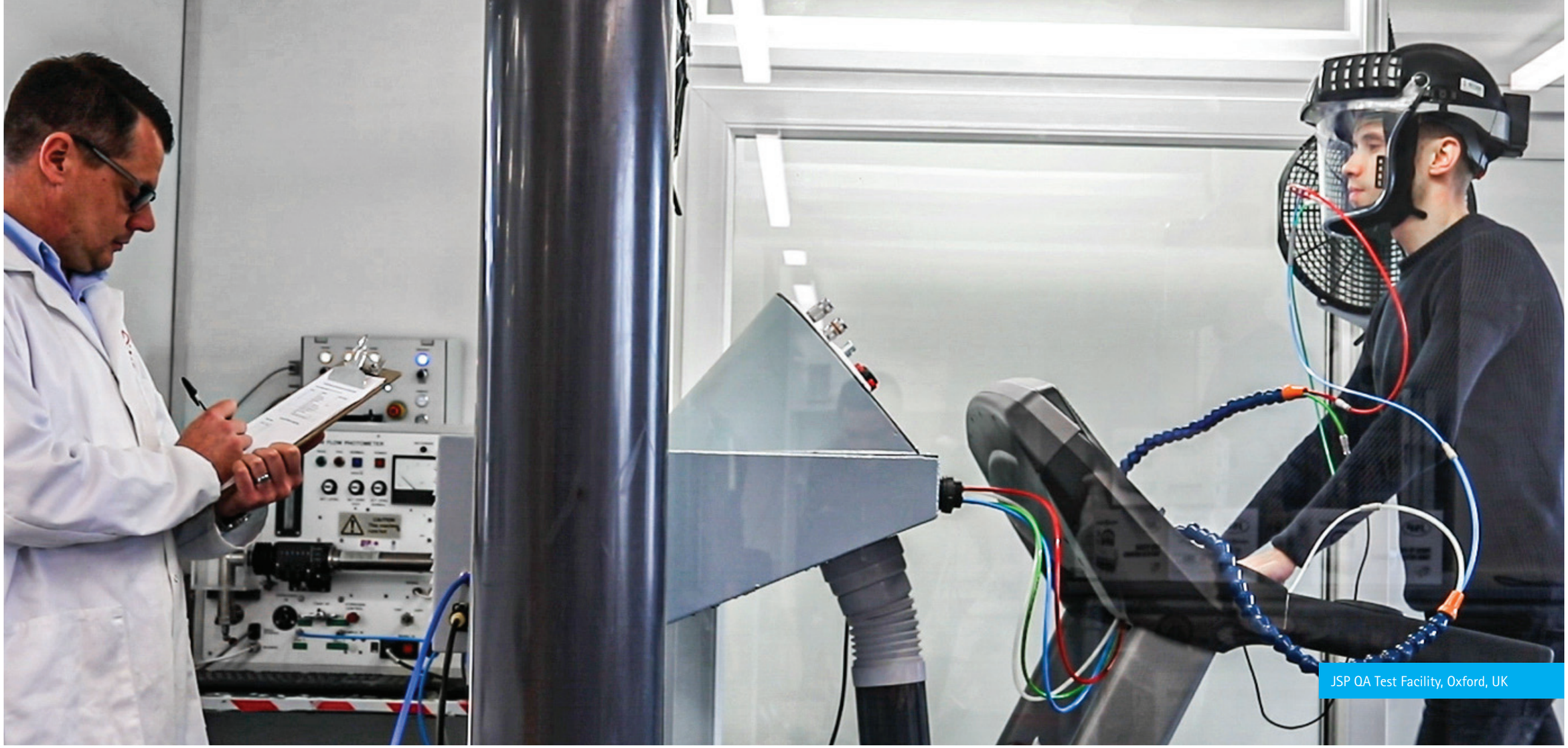

JSP QA Test Facility, Oxford, UK

EN 12941 – Respiratory protective devices. Powered filtering devices incorporating a helmet or a hood. Requirements, testing, marking.

This standard sets out requirements for powered filtering respirators incorporating a helmet or a hood, with assessments covering materials, field of vision, inward leakage, carbon dioxide content, connections, markings, and user information. The respirator must be tested both on laboratory equipment and on real people performing work simulation tests in a laboratory environment. Additionally, requirements are given for the visor incorporated as part of the product, and for the function of warning facilities and noise level from the motor inside the unit.

Powered air devices are classed as follows:
TH1 – Low filter performance (90% efficiency)
TH2 – Medium filter performance (98% efficiency)
TH3 – High filter performance (99.8% efficiency)

EN 14387 – Respiratory protective devices. Gas filter(s) and combined filter(s). Requirements, testing, marking.

This standard covers gas and combined filters, and involves review of materials and construction, connections, markings, and user information.

Filters are tested for gas capacity and breathing resistance, with combined filters subject to additional penetration testing. Combined filters that pass the optional clogging requirement are marked with the letter 'D'. Filters are designated by type and class, determined by the gases or vapours they are intended for use against.

Types **A, B, E, K,** and multi-type gas filters are classified further by capacity, with 1 (low) to 3 (high) following the letter, e.g. A2.

Filter types:
Type A – Organic gases and vapours with a boiling point of >65°C.
Type B – Inorganic gases and vapours.
Type E – Sulphur dioxide and other acid gases and vapours.
Type K – Ammonia and organic ammonia derivatives.
Type AX – Organic gases and vapours with a boiling point <65°C, as specified by the manufacturer.
Type SX – Specially named gases and vapours, as specified by the manufacturer.
Type Hg-P3 – Mercury vapours and particles.
Type NO-P3 – Oxides of nitrogen, nitro gases and vapours and particles.

Additionally, combined filters include classification from EN 143 which follows the complete gas element marking, e.g. A2P3.

NIOSH CFR 42 Part 84 – Respiratory Protective Devices.

This is a national respiratory protection standard used in the USA which covers all respirator types, unlike EN where requirements for each type are set out in separate standards. Requirements are given for classification, testing and assessment, as well as information supplied via labels and instruction manuals.

Respirator types include self-contained breathing apparatus and supplied air, gas masks, and air-purifying particulate respirators which can be powered or non-powered.

Air-purifying particulate respirators are designated by series: N series filters are for use in workplaces without oil-based aerosols, R and P series filters can be used for particulate hazard environments with oil-based liquid particles.

Non-powered devices are classed by efficiency:
N100, R100, P100 –
Minimum efficiency of 99.97%
N99, R99, P99 –
Minimum efficiency of 99%
N95, R95, P95 –
Minimum efficiency of 95%

Powered air devices are designated by class and series:
PAPR100-N – Intended for workplaces free from oil-based liquid particles
PAPR100-P – Can be used where oil-based aerosols are present
HE – Stands for high efficiency

All powered air-purifying respirators must have minimum efficiency of 99.97%.