**3**M Science. Applied to Life.<sup>™</sup>

# Improving productivity with the science of safety

Investing in innovative personal protective equipment not only helps protect against injury and health problems – it can save time and money.

Every year workplace injuries and illness cost the European Union €476bn. That's the figure revealed by recent statistics from the European Agency for Safety and Health at Work<sup>[1]</sup>. It's clear protecting workers continues to be an area that requires attention, investment and innovation, and while the primary purpose of personal protective equipment (PPE) is to protect, extra functionality can also help to improve productivity in the workplace.

Successful protection starts with an understanding of how the individuals using the equipment work day-to-day. This is where 3M's expertise comes to the fore – applying science to real life situations; looking at it from the end users' point of view, and asking how can it work better.

Non-compliance is an area where this is particularly pertinent. Whether it's removing ear protection to talk to colleagues, wiping away fog from eyewear, or simply continually adjusting uncomfortable PPE, if you're not wearing it, it can't protect you. 3M's science of safety focusses on what causes these basic obstacles to protection and seeks to solve them.



Over the course of a working life damage to hearing can be sustained through intermittent exposure to loud environments. A significant amount of work time can be lost too due to workers withdrawing from noise to communicate with colleagues.

In a 2015 study, researchers at Lund University in Sweden found the use of 3M's revolutionary PELTOR<sup>™</sup> Communication Headsets, which combine hearing protection and remote communication capability, improved the productivity of a construction work unit by 380 minutes per week, increasing productivity from 71% to over 86%<sup>[2]</sup>.



In simple terms, workers' hearing was protected and they could communicate effectively within the noisy work environment.

### Seeing

Protective eyewear fogging can be frustrating and dangerous. Removing eyewear to wipe away fog can expose eyes to potentially dangerous workplace impact hazards and debris. While wiping away fog may be a short process, repeatedly clearing eyewear over the course of a working day can have a significant impact on workers' downtime and therefore productivity.

Innovative anti-fog and anti-scratch coatings are applied to safety eyewear to help reduce these issues. Using a special process to provide a thicker layer, 3M<sup>™</sup> Scotchgard<sup>™</sup> Anti-Fog Coating resists fogging for longer than traditional coatings, outperforming the N marking requirements of EN166 by five times, even after up to 25 washes, and enabling workers to benefit longer without replacing their safety eyewear.

For welders using passive filters, switching between normal room light and the bright light from their work can not only be dangerous, but it wastes time as the welder is forced to move the shield to see which part needs to be welded next.

These issues have been overcome using liquid crystal displays (LCD). 3M were first on the market with auto darkening filter (ADF) technologies, which allow good vision in normal light, and protection from the intensity of a welding arc darkening automatically of the arc being struck. This innovative technology has been integrated into 3M welding helmets for the past 30 years and is available throughout the 3M<sup>™</sup> Speedglas<sup>™</sup> welding headtops series.

## Comfort

Comfort should never be underestimated. According to the HSE, "when employees find PPE comfortable they are far more likely to wear it"<sup>[3]</sup>. If a wearer is uncomfortable they will find ways to make adjustments or even remove it completely. This is a common issue and can result in wearers not being sufficiently protected. Equally, continually adjusting uncomfortable PPE can take workers away from their task, increasing downtime and reducing productivity.

When it comes to respiratory protective equipment (RPE), breathing resistance is one of the biggest contributors to wearer comfort. Respiratory filter materials are constantly evolving and improving. 3M have invested heavily in developing their advanced electret filter media to capture particles from a greater distance, which means the filters can have a more open structure, and breathing resistance for the wearer is reduced.

This continual examination of how workers operate, what could work better, and what hinders them is at the heart of 3M's science of safety. Employing science to enhance PPE improves worker comfort, compliance and protection, while also helping to reduce work related injury and illness, and increasing productivity.

# Register for our free webinars; including our September productivity webinar at: www.3M.co.uk/SOSwebinars

#### Sources:

- 1 European Agency for Safety and Health at Work. 2017. Work-related accidents and injuries cost EU €476 billion a year according to new global estimates. [ONLINE] Available at: https://osha.europa.eu/en/about-eu-osha/press-room/eu-osha-presentsnew-figures-costs-poor-workplace-safety-and-health-world. [Accessed 4 June 2018].
- 2 Ben Lobel. 2016. Protection, productivity and passion: How headsets help on hazardous industrial sites. [ONLINE] Available at: http://smallbusiness.co.uk/protection-productivity-and-passion-how-headsets-help-on-hazardous-industrial-sites-2507881/. [Accessed 4 June 2018].
- 3 Health and Safety Executive. 2018. Coshh Basics- Personal protective equipment (PPE). [ONLINE] Available at: http://www. hse.gov.uk/coshh/basics/ppe.htm. [Accessed 4 June 2018].