

Belt and braces

No sensible person would contemplate driving a car without using a seat belt. Adequate protection in the workplace is just as crucial. Brian Wall reports

Can you recall some of the more extreme reactions from the general public when the idea of compulsory seat belts was first mooted? They ranged from: "No one can make me put one of those things on" to "No [expletive deleted] way!" In short, government 'interference' on the very personal matter of whether or not people should have a choice in reducing the likelihood of maiming or killing themselves in a road accident was not to be tolerated.

Happily, sense prevailed and eventually attitudes changed. Now, very few of us would even think of engaging gear before strapping ourselves in safely and making sure all of our passengers are equally secure.

The protection that seat belts afford us has distinct parallels with another form of defence that is critical to the workplace, namely PPE (personal protective equipment). But there is one major difference: PPE should only be used as a last resort, not as the first line of defence. Employers should ask themselves whether there are ways, other than by issuing PPE, through which a particular risk might be adequately controlled, thus obviating the need for PPE. Substitution, engineering controls, automation and standard operating procedures (SOPs) enshrining safe systems of work should always be considered first. Best advice: use PPE only where there is no alternative.

Of course, that does not mean PPE is a secondary consideration – something you cobble together when all else fails. It needs to be carefully thought through, professionally specified and planned for, with the equipment mandatory wear on SOPs or on standby and readily available, should it be required in an emergency – and always properly maintained. A good approach is to imagine the best outcome, but always plan for the worst.

Why fully-functioning, correct PPE matters will

be obvious to most plant engineers and engineering managers. Operative safety is paramount, so every employer should regard it as an imperative to ensure that each and every person under his or her watch has appropriate and effective personal protective equipment, once it has been specified. For the main hazards types and appropriate PPE, see the panel opposite.

Legal position

What is your obligation in law? The main requirement of the Personal Protective Equipment at Work Regulations 1992 is that PPE must be supplied and used at work wherever there are risks to health and safety that cannot be adequately controlled in other ways. The regulations also



Music to their (protected) ears

The Sage, Gateshead, the landmark centre for musical education, performance and conferences on the south bank of the River Tyne, has begun to use Cirrus equipment to ensure that the hearing of its workers is protected.

The Sage Gateshead has been using Cirrus doseBadge noise dosimeters to measure their workers' noise dose exposure during sound checks and performances, as part of a full programme designed to determine the level of noise protection required for both the staff and entertainers performing at the state-of-the-art venue.

The updated Noise at Work regulations came into force this year, meaning that employers in the entertainment industry are required to manage the risk to their employees caused by excessive noise. The Sage Gateshead is keen to ensure that workers at the venue – and groups who work for them outside the building – are well protected.



Pointers

- PPE should only be used as the last resort, not the first line of defence
- Substitution, engineering controls, automation and standard operating procedures, based on safe systems of work, come first
- That said, the law requires that PPE is professionally specified, planned and maintained
- Hearing protection and respiratory equipment are covered by separate industry hazard regulations
- Best available technology, not cheapest, could be a factor in any litigation

specifically require that PPE be:

- Properly assessed before use to ensure it is suitable
- Maintained and stored properly
- Provided with instructions on how to use it safely
- Used correctly by employees

Interestingly, hearing protection and respiratory protective equipment are not covered by these regulations for most work situations, only because other regulations apply specifically to them. And there are extensions to that rule – for example, as HSE guidelines advise: “gloves used to prevent dangerous chemicals penetrating the skin would be covered by the Control of Substances Hazardous to Health Regulations 2002”.

The relevant excluded regulations are:

- The Control of Lead at Work Regulations 2002
- The Ionising Radiations Regulations 1999
- The Control of Asbestos at Work Regulations 2002
- The Control of Substances Hazardous to Health Regulations 2002
- The Noise at Work Regulations 1989
- The Construction (Head Protection) Regulations 1989

However, with all excluded PPE items, PPEWR requires that they be compatible with any other PPE provided for the task. And it's also worth

noting that, as PPE offerings improve, there may be a case for ensuring that operatives are equipped with best available technology – not cheapest.

So what's new on the market? It's a constantly changing picture and there is a vast array, covering everything from high-visibility, protective clothing to breathing apparatus, to lone worker tracking and protection systems. Go to the SOE Plant Engineers' website (www.plantengineerdirectory.org.uk) and search on PPE for a comprehensive list, but here is a taster of some of the latest equipment available.

Legal position

In respiratory protection, the X-plore Series of filtering half- and full-face masks, from Draeger, is said to provide effective, reliable protection against particulates, as well as gases and vapours. Available in limited life and reusable half-mask, as well as full-face mask versions, complete with eye protection, the range offers a wide variety for use in different applications.

Meanwhile, the Purelite Xstream is a self-contained, lightweight, head-mounted, powered air purifying respirator (PAPR) that provides eye, face and respiratory protection against sprays and particulates. Incorporating a polycarbonate faceshield and weighing in at a nominal 1kg, the Xstream is the latest addition to Helmet Integrated Systems' range, and features twin TH2P filters and a rechargeable eight-hour battery pack located inside the helmet shell. With an assigned protection factor of 20 (APF 20), the fan motor and filters deliver an airflow of 210 l/min, which is still maintained at a minimum of 150 l/min when the battery gets low.

As for ear protection, while the Bilsom 303 single-use earplug has been employed by millions of wearers since 1994, now, under the Howard Leight by Sperian brand, it has been improved, with a claimed enhanced fit in the ear canal and better ear comfort, even when worn for long periods. Traditional bullet-shaped foam earplugs tend to come out, due to fast foam expansion during insertion. The new Bilsom 303's polyurethane foam formulation is easier to roll up and, once inserted, actively resists moving out of the ear canal.

Finally, 10 years after it was first launched in the UK, the Grasp Hand and Arm Protection Report from Marigold Industrial has been updated to provide plant health and safety managers with a guide to managing hand and arm protection (HAP) in the workplace. Covering a range of issues – including highlighting hazards, how to choose the right glove for the job in hand and associated issues to consider - the 16-page report is available at: ukenquiries@marigold-industrial.com or by calling 0845 075 3355. **PE**

HSE guidance on hazards that PPE must cover

Eyes

Hazards: chemical or metal splash, dust, projectiles, gas and vapour, radiation.
Options: safety spectacles, goggles, faceshields, visors.

Head

Hazards: impact from falling or flying objects, head bumping, hair entanglement.
Options: a range of helmets and bump caps.

Breathing

Hazards: dust, vapour, gas, oxygen-deficient atmospheres.
Options: disposable filtering facepiece or respirator, half- or full-face respirators, air-fed helmets, breathing apparatus.

Protecting the body

Hazards: temperature extremes, adverse weather, chemical or metal splash, spray from pressure leaks or spray guns, impact or penetration, contaminated dust, excessive wear or entanglement of own clothing.
Options: conventional or disposable overalls, boiler suits, specialist protective clothing, eg chain-mail aprons, high-visibility clothing.

Hands and arms

Hazards: abrasion, temperature extremes, cuts and punctures, impact, chemicals, electric shock, skin infection, disease or contamination.
Options: gloves, gauntlets, mitts, wristcuffs, armbands.

Feet and legs

Hazards: wet, electrostatic build-up, slipping, cuts and punctures, falling objects, metal and chemical splash, abrasion.
Options: safety boots and shoes with protective toe caps and penetration-resistant mid-sole, gaiters, leggings, spats.

