

# Getting the personal touch

With safety legislation and associated guidelines changing all the time, it is increasingly important to keep abreast of personal protective equipment requirements across industry sectors. Steed Webzell reports

Nothing can be more important than employee safety: turnover and profit are meaningless in comparison with the well-being and security of staff. If a serious accident, or worse a fatality, occurs as a result of poor safety practice, the consequences could well include severe financial penalties, plant closure and imprisonment for those deemed responsible.

But what is good safety practice? The answer is that it, and the legislation behind it, is a moving target. For example, did you know that in construction, which is subject to more new safety legislation than many sectors, is about to come under the Construction Design and Management Regulations 2007 (6 April)? This states that responsibility for construction safety rests on those who commission and pay for developments – not just those who design, manage and build them.

“A client will no longer be able to hide behind its agent if something goes wrong,” says Northwest construction lawyer Ken Salmon of Mace & Jones. “If he or she knows, or should have known, of deficiencies in the procurement, design, management or construction process, he has a duty to do something – and be at risk if he fails.”

These new regulations are part of a purge aimed at reducing the number of accidents on building sites. In 2004/5 (the last year for which figures are available), there were 79 fatalities, 4,687 major injuries and 8,250 significant injuries to workers and members of the public.

Slashing those statistics is not just about legislation though. In another

development, Safety Pass Alliance (SPA) has extended its health and safety passport scheme to include the house building, refurbishment and construction sectors. SPA is hoping its scheme will achieve results similar to those seen in other industries – such as underground railways, where Metronet notched up an impressive 75% reduction in accidents within 18 months.

And good practice is also, as ever, influenced by pressure groups and sector associations. For example, the Powered Access Interest Group, a joint committee of the Construction Plant-hire Association and the International Powered Access Federation, has called for all users of boom type access platforms to wear a full body harness with a short restraint lanyard attached to an anchor point.

## Wider awareness

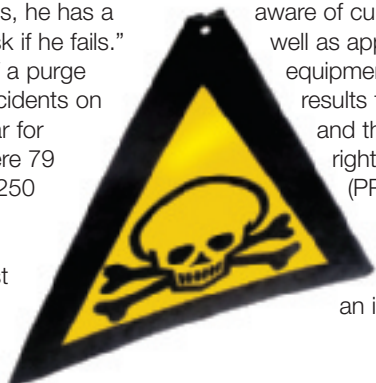
Much of this is common sense. However, in light of the scale of evolving legislation and associated industry guidelines, it is important that more people – and that includes managers, as well as engineers and engineering technicians – make themselves aware of current issues surrounding safety, as well as appropriate practices and relevant equipment and materials. Safe working results from getting all this batted down, and that includes ensuring use of the right personal protective equipment (PPE).

One of the problems highlighted in recent years concerns the safety of lone workers in remote locations, an issue that particularly affects the

## Top tips

Safe working is largely about common sense in light of evolving legislation, industry guidelines and best practice. Key points include:

- For lone workers, use personnel tracking and alarming systems
- Fire, heat and electric arc protection: use specialist protective clothing
- Worker visibility aids: use materials like Gore-Tex that are immune to dirt, oil, grease and graphite
- Aggressive environments: ensure protection against media, such as acids, alcohols, oils, lubricants and hydrocarbons
- Dust and other airborne particles: use masks and respirators, but ensure compatibility.



utility, process, rail and construction sectors. Among the more innovative solutions is the SBES LifeSaver lone worker alarm system, which not only raises the alarm when an operative is in trouble but directs staff to the area where the alarm has been triggered.



That's a key differentiator and it's attracting attention. Among SBES' most recent installations is the Synchrotron Radiation Source building at Daresbury Laboratory in Cheshire.

With 500 staff and users moving around a large complex, the potential for a lone worker incident was deemed too high for its existing, older technology system, which only provided general alarming.

Another useful system is IDC's Simplitrak tracking equipment, which enables users to trace and maintain contact with operatives working in remote locations. That system comprises ZigBee wireless personnel tracking devices and fixed access points with options for remote monitoring using web servers. It's designed for a variety of applications on land and offshore, including on wind turbines and remote substations, as well as for transportation and marine 'man down' alerts.

Moving on to physical risks, some are sector specific and one of the many requiring special attention in the utilities concerns exposure to electric arc. No matter how many steps are taken to minimise the potential for an accident, it is crucial to be prepared for the worst, as Ben Prince, Empower's electrical training specialist, reiterates week after week at the company's training centre in Nottinghamshire.

Having reviewed the latest technologies at DuPont's garment testing facility in Geneva, Prince now recommends use of flame-resistant protective coveralls, such as those made of Nomex. When working with high voltage systems, equipment failure and/or human error can cause arcs that generate temperatures up to 30,000°C in a split second.

There is no warning and, if personnel are inadequately protected, there may well be fatalities or, at the very least, serious burn injuries. Protective clothing made from Nomex specifically addresses the thermal effects of exposure to electric arc and also flash fire. Layered Nomex absorbs the bulk of radiant energy, helping to minimise burn injury.



Meanwhile, in the rail sector, chief concerns for PPE include dirt reducing the visibility of workwear. And in the process industries, protective clothing needs to be resistant to a range of aggressive chemicals, as well as abrasion.

To this end, Cosalt Ballyclare has recently introduced a range of clothing using Gore-Tex high visibility fabric that conforms to Railway Group

standard GO/RT 3279. Gore-Tex is immune to dirt, oil, grease and graphite particles that can otherwise diminish visibility essential for railway worker safety.

Then Marigold Industrial has launched Comasec Comaprene gloves, which offer protection against both organic and mineral acids, alcohols, oils, lubricants and hydrocarbons, as well as affording high abrasion resistance, making them suitable particularly for operatives in the chemical, agro-chemical and petroleum industries.

Vibration is another risk factor, especially in the construction sector – meaning PPE has to be about much more than gloves, no matter how advanced the materials. There are developments here too: contractors and health and safety specialists at Tarmac, for example, have teamed up with JCB to develop a modified backhoe loader capable of reducing the incidence of hand-arm vibration (HAV) injuries among road gangs.



Moving on, dust and airborne particles are another common hazard across a range of industries, helping drive an array of PPE product introductions, like the Draeger X-plore 1300 range of

filtering half masks. These are said to use advanced filtering media that offer protection levels from FFP1 to FFP3, and can incorporate exhalation valves. Draeger also has a range of powered air purifying respirators supplied with a variety of hoods, helmets and visors that provide application-specific protection against hazardous particulates, as well as gases and vapours. These can have integral alarms and multi-function operating panels, and feature rechargeable batteries.

Finally, according to research by the HSE on RIDDOR (Reporting of Injuries, Diseases or Dangerous Occurrences Regulations), misuse, mis-selection and lack of maintenance and/or training are major contributory causes in two-thirds of the 9,000-plus incidents mentioning PPE each year. Just as important, it notes that one of the common problems found in the workplace is incompatible PPE types, rendering combinations uncomfortable or even ineffective – and also leading to individuals jeopardising their safety by working without PPE.

Jo Partridge, technical service manager at 3M, explains: "Personnel from industries including construction, paint spraying, welding, food and drink, bakeries and the emergency services face hazards that require use of more than one type of PPE." 3M's solution is a range of compatible eyewear and hearing protection equipment, for example, that can be worn with its respirators. The company also has products that offer up to four-in-one protection – like helmet-mounted earmuffs combining head and hearing protection, or powered equipment that combines respiratory, eye, face and hearing protection. **PE**

