

## The advantages of integrated eyewear

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Recently we concluded an extensive research programme to help further understand the needs of specifiers and wearers of above-the-neck personal protective equipment (PPE) at work. We view 'the head' as the total head (including brain, eyes, ears, mouth etc.) and focus exclusively and relentlessly on safeguarding it. Work injuries above-the-neck are, after all, the most likely to result in death or permanent disability. We believe that by protecting the head, the creativity and judgement that shape our world is safeguarded.

A mix of different research methods helped gain insights from more than 250 UK specifiers and wearers who focus on the key aspects of selecting, purchasing, testing and ultimately wearing above-the-neck PPE solutions.

When asked to rank (between 1-10) the key factors when selecting PPE, the research highlighted specifiers, purchasers and wearers continue to place considerable importance on:

**Comfort** for the wearer (55% stated 9-10 in importance)

**Compatibility** of the product with other equipment (45% stated 9-10 in importance)

**Style** – how it contributes to company and wearer's image (19% stated 7-10 in importance)

We noted an increasing concern and need for hassle-free selection and compatibility. Both specifiers and the wearers want to feel more confident that their PPE (i.e. safety helmets, eyewear, face protection, and ear defenders) are compatible with one another. Checking products for compatibility, various risks and the necessary regulations is daunting – especially above-the-neck where stakes are at their highest. One of the clearest solutions to this problem is to embrace head protection more as a system and intuitively integrate key elements.

This article aims to specifically summarise some of the background, research and benefits around integrating eyewear into safety helmets. Since our pioneering introduction of the Vision system in 2001, integrated eyewear solutions continue to gain in popularity. The frustrations around compatibility reveal that still more can be done to drive awareness for such solutions.

There are several benefits to considering integrated eyewear in a head protection system:

**Increased impact protection:** Within EN 166 there are different grades of impact strength given to eyewear and face protection. Standalone safety spectacles conform to grade F (low energy impact), which equates to withstanding an impact from an object travelling up to 45 metres per second. Integrated eyewear systems can often provide a higher level of impact protection. In 2013, We upgraded the pioneering Vision integrated helmet to a new Vision Plus. This safety helmet system was the first and only to incorporate Grade A eye protection, withstanding impacts up to 190 metres per second. This grade of protection is not achievable with standalone safety spectacles.

**Easier & less expensive to accommodate spectacle wearers:** The donning of prescription glasses in the general population is increasing globally. In East Asia, for example, 80-90% of urban 18yr olds+ suffer from near-sightedness. In the UK, the rate of people wearing prescription glasses has increased 8% over the last 5 years, from 61% in 2011 to 69% in 2016.

For the UK, this poses a Health and Safety challenge in that, of the 17.4million people (of working age in UK) in manual roles; 12 million of these will be wearing prescription glasses whilst conducting their day-to-day work.

A key advantage of integrated eyewear within the safety helmet system is that a significant proportion of solutions available are designed to allow prescription glasses to be worn underneath the integrated safety eyewear. One of the alternative safety eyewear solutions is to provide workers with prescription safety eyewear, which is both time consuming and costly. Another option is to wear specialist safety spectacles over prescription glasses (sometimes called “over specs”), which, by nature create discomfort and therefore reduce likelihood of usage.

**Reduced costs:** Health & Safety officers and facilities managers continue to site frequent *loss or damage* of the safety spectacles issued to the workforce. This issue not only has a financial implication (for replacements), but also raises the occurrence of the incorrect (or in many cases no) eyewear worn for high risk tasks-putting workers at risk of injury. Over a prolonged period, through the reduction of loss and damage to eyewear, a good integrated safety helmet system can save significant cost. According to our 2015 extensive market study, companies can save up to 29% (versus a premium safety helmet and standalone safety spectacles) annually per worker.

It is all too easy for safety eyewear to become damaged or scratched once removed. often placed down where tools and objects are present, lenses scratch easily, or heavy objects can break both lens and frames. An integrated system puts the safety eyewear out of harm’s way (within the helmet), ensuring they stay damage free and, being located within the helmet, can be fully retracted when not required –eliminating the likelihood of the eyewear being removed and misplaced.

**Increased choice:** Within EN 166, there are specific requirements for optical quality and shading. As with standalone safety eyewear, integrated solutions can be specified with different coatings and shades, all specific to the task at hand and are completely interchangeable for when tasks require different lenses. Ultimately there are multiple options in terms of shape, fit, and shades of integrated eyewear, ensuring there is a smart solution available that can be tailored to the most dynamic working environments.

The research also highlights; for those aware of integrated eyewear systems, there is some concern of added weight when eyewear is not in use or required. It is recommended that training could help overcome these concerns as, specifically, those systems which use ABS material for the safety helmet component can achieve the same or greater strength with less material. In other words, the integrated eyewear element of the system can be added with no / minimal additional weight versus many standalone safety helmet options which need more material to achieve the same strength.

With so many benefits to the specifier and end user, it comes as no surprise that helmets with integrated eyewear is a welcomed and growing trend. With standalone components raising compatibility concerns, it is reassuring to know that there are helpful product solutions already available. We, as an industry, still have a lot of work to do to help consolidate and relay those benefits.