



women's engineering society

PPE Survey Results 2024



www.wes.org.uk

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1. Executive summary

Background

The Women's Engineering Society (WES) was founded to support women working in engineering and one of its key aims is shaping the engineering diversity debate to ensure women experience inclusive, accessible workplaces. Since 2009, WES has investigated women's experiences wearing personal protective equipment (PPE). Research conducted by WES in 2009 and 2016 found most women were wearing ill-fitting PPE, driven by a lack of availability for women-specific equipment. This report explores the findings of WES's most recent survey on the subject, conducted across 2023-24. Rocket Science, an independent research organisation, were commissioned to analyse these findings. The survey represents a substantial portion of the female workforce, and in total 1,444 women from fifteen different sectors and a range of backgrounds completed the survey. The analysis found that while fit for purpose PPE is becoming more available for women, the change is slow and women in roles which require PPE face significant challenges resulting from ill-fitting equipment.

The findings

Access to fit-for-purpose PPE continues to be a major challenge for women, with only 4% of respondents reporting their equipment fits them perfectly. Whether ordering PPE themselves or through their company, women find obtaining fit-for-purpose equipment difficult and report the PPE they wear is uncomfortable and restrictive. This affects women's ability to complete their work, and as a result some women alter the equipment themselves or in some cases forego it entirely. The lack of appropriate equipment and subsequent alterations can present serious risks, including trip hazards, risk of harm, and in some cases risk to life. For example, some respondents noted the climbing harnesses, lifejackets, or air systems they use do not work for their bodies increasing the risk they face in their jobs.

There are also substantial effects on women's dignity, and ill-fitting, inappropriate equipment causes embarrassment. When women-specific PPE is provided it tends to be pink or purple, causing women to stand-out from their male colleagues and in some cases leads to being ridiculed. Women said the alterations they make causes their equipment to appear amateur and makes them feel unprofessional, while others said the difficulty removing PPE to use the bathroom and the time needed to do so causes other colleagues to deride them. Some women purposefully drink less throughout the day to avoid this, which itself poses health risks.

The current PPE does not account for the different needs women have across stages of their lives. Women report the equipment they use does not account for the changes in the body occurring during periods, pregnancy, or menopause and limits their ability to safely carry out work. Some women said the lack of maternity PPE caused them to change roles. There are also challenges for specific groups of women, for example Black and Mixed women tend to wear PPE more frequently, spend longer in it, and are more likely required to alter it. Similarly, women with disabilities said their PPE does not account for medical equipment, chronic conditions, limb differences, or sensory needs.

When these challenges and their effects are raised with colleagues or managers, little is done to facilitate women's access to better fitting PPE. More than half of the women who raised concerns reported nothing changed, compared to just 9% who said their concerns were fully addressed. Other responses included employers did not acknowledge their concerns, acknowledged their concerns but did nothing, or, in some cases, ridiculed women for raising these concerns.

Recommendations

The findings of this analysis highlight the need for action to be taken to ensure women are safe, comfortable, and feel accepted in their workplaces. With these in mind, we make the following five calls to action:

1. **Conduct** a nation-wide survey of women's measurements to ascertain how suitable PPE can be produced for women of different sizes, backgrounds, religion, dis/ability and need. This survey exercise should include both women currently working in PPE-required sectors and those who do not.
2. **Convene** a steering group of women from diverse backgrounds who currently work in the sector to oversee every step of this process, from designing and conducting the measurement exercise to collaborating with producers and suppliers.
3. **Coordinate** with PPE producers and suppliers and encourage them to account for the findings of the measurement exercise and include new, suitable PPE in their stocklists.
4. **Engage** with employers to highlight the importance of fit for purpose PPE and specific requirements women might have to alleviate the pressure and responsibility on individual women to create change within their workspace.
5. **Lobby** for access to fit for purpose PPE as a right within policy and legislation to facilitate better and easier access for women to fit for purpose PPE and relieve the financial burden to make alterations or purchase their own.

2. Background to the research

2.1 Introduction

Personal Protective Equipment (PPE) is an essential workplace safety tool for people across a wide range of jobs and helps thousands of people do their jobs safely everyday by providing protection from the weather, toxic substances, heavy equipment, and more.

When PPE does not fit it can make work more difficult, less pleasant, and more dangerous. This is a particular challenge for women, who form an estimated 16.5% of the engineering workforce¹, and previous evidence finds that PPE options for women are limited. The Women's Engineering Society has carried out surveys to build the evidence base around this issue, and this report presents the analysis and findings of its third survey on the matter.

About the survey

The survey was open for five months, between 25 August 2023 and 31 January 2024, and received 1,614 responses: 1,444 from women, 164 from men and 6 who did not provide their sex. The survey, consisting of 41 questions, was hosted on an open Microsoft Forms online link, and was shared via a QR code which was attached to social media posts, emails, Teams backgrounds, and PowerPoint presentations delivered by the Women's Engineering Society (WES). Respondents were also encouraged to share the survey link with colleagues and friends. The full survey is included in [Appendix 1](#).

Rocket Science, an independent research and evaluation organisation, were commissioned to conduct survey analysis and reporting. For the scope of this report, we have only included the survey responses from women. All quotes and statistics included in this report are from those respondents.

About the respondents

Respondents came from a range of backgrounds and industries. Respondents are aged between 18-74, although the majority are between the ages of 25-44. While respondents reported a range of ethnic backgrounds, the vast majority classify themselves as 'English, Welsh, Scottish, Northern Irish or Irish.' While respondents from 15 sectors completed the survey, the majority work in the Applied Sciences, Structural and Construction, Transportation and Logistics, and the Civil sectors. Full breakdowns of respondent information are included in [Appendix 2](#).

¹ Women's Engineering Society statistics, March 2022. [Link](#) [last accessed 03.04.24]

3. Understanding the problem

PPE is a crucial part of the work life of many people across different sectors and professions. The equipment or clothes used as PPE protects respondents from harm, the elements or other health and safety risks.

This survey plays a crucial part in understanding the nature and scale of the issues around access to PPE for women. This survey focuses on the following areas:

- Type and fit of PPE worn by women
- Frequency and duration of wearing PPE
- Fit for purpose of the PPE available
- Access to maternity PPE
- Outcomes of women asking for better fitting PPE
- Consequences of ill-fitting PPE

The survey includes several quantitative and qualitative questions. The qualitative questions include questions 15, 26, 35, 37, 40 and 41. Findings reported as qualitative findings include answers across all these questions. The findings from both the qualitative and quantitative questions are presented below. The survey collected a range of demographic data, which was used for further analysis to identify whether specific issues were more prominent for women from under-represented ethnicities, a specific age, sector, or level of education. These findings were included throughout if they were significant.

3.1 Commonly worn PPE

The survey identifies the broad range of PPE items respondents wear as part of their work. The most common items are boots (71%, n=1019), gloves (68%, n=980), hard hats (60%, n=860) and safety glasses (59%, n=850). The least worn PPE items are gauntlets, snoods, body armour, protective leggings and bib and brace (see Figure 1).

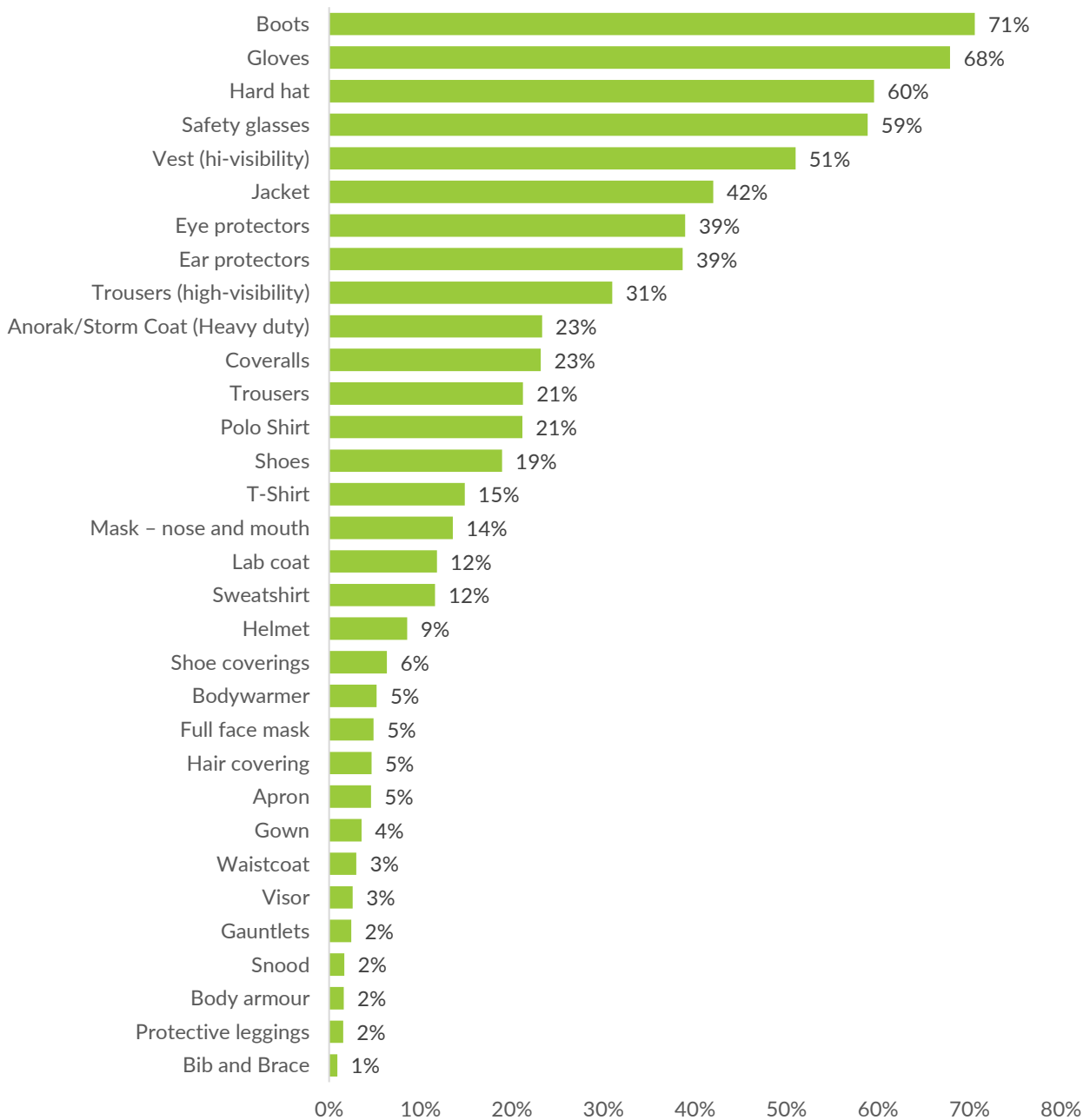


Figure 1. What type of PPE do you wear for work? n=1444

Women report that even the PPE items they find most comfortable are moderately restrictive. When asked how comfortable the top three best-fitting PPE items are on a scale from 1 to 5, where 1 is very restricting and 5 not at all, most survey respondents (38%, n=477) rate these as a '3'. As seen in Figure 2, there was an equal distribution between the respondents who feel that their PPE is restrictive (31%, n=398) and those that do not (30%, n=378).

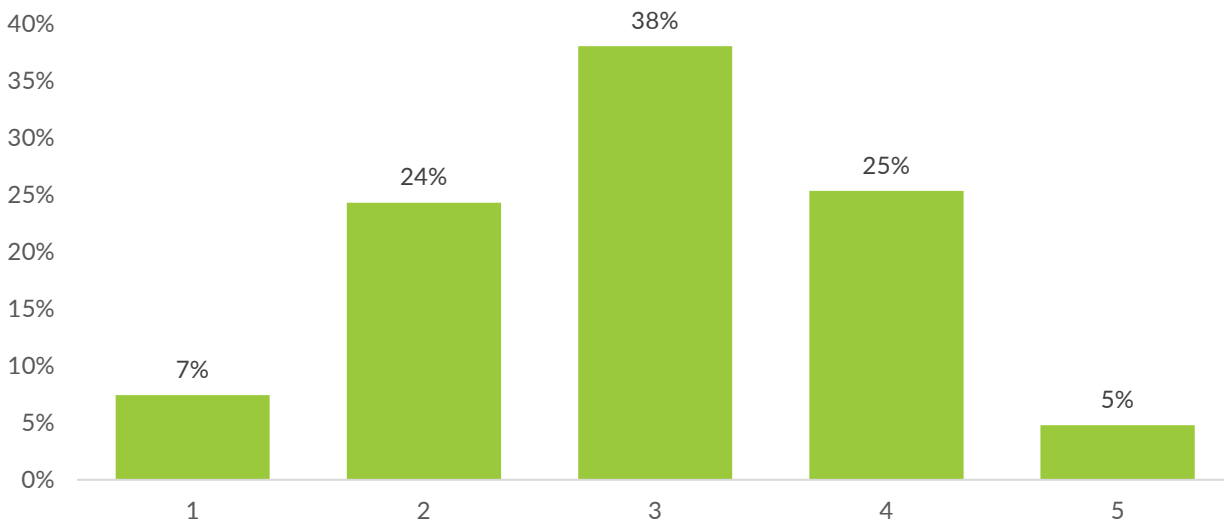


Figure 2. Thinking about the top three PPE items that fit you best, how comfortable is your PPE? (Score 1-5 where 1 is very restricting and 5 is not at all), n=1253

3.2 Availability of fit for purpose PPE

The survey includes a range of questions on the availability of fit for purpose PPE. This starts by understanding who supplies the PPE and what options women have when ordering PPE, regarding sizes and fit.

74% (n=1136) of respondents state that their employer is their main PPE provider. 10% (n=150) of respondents choose their PPE from a recommended list provided by their employer, 9% (n=138) get their PPE from the company that they are visiting and only 7% (n=101) provide their own PPE (see Figure 3).

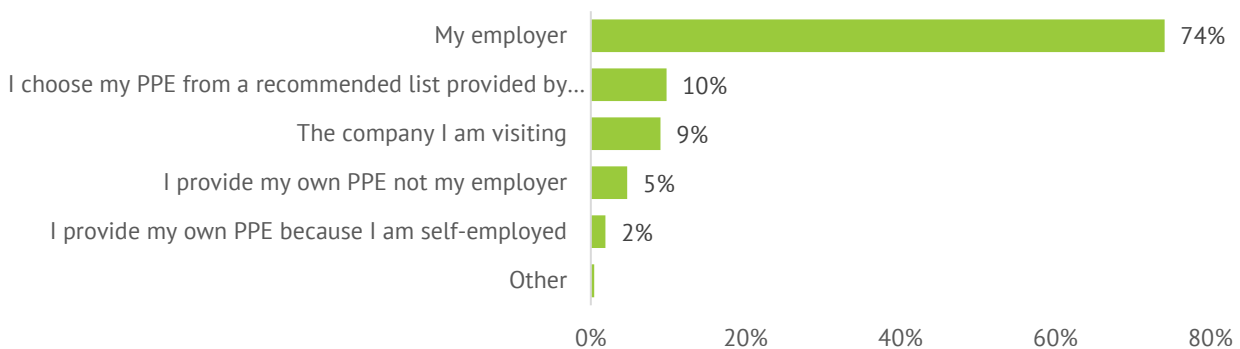


Figure 3. In general, who provides your PPE? n=1444

According to the qualitative survey responses, the availability of PPE and how it is acquired depends on the employers and the size of the employer. Some employers have existing stocks of PPE, others cooperate with specific suppliers, and a few have sample sizes for employees to try before ordering the PPE. If the employer has an existing relationship with a supplier, the respondents have access to a catalogue and can only select their PPE from there. In these catalogues, there are often limited or no choices for women's PPE. The catalogues do not have a size guide for the PPE making it difficult to

understand whether the clothes run large, small or are fitted. This means women had to guess their size which leads to having ill-fitting PPE due to inconsistent sizing.

More than two-thirds (68%, n=866) of survey respondents have raised concerns about ill-fitting PPE with others. Most discussed these issues with their employer (30%, n=386), colleagues (18%, n=233) and line managers (13%, n=165). However, a third of survey respondents (32%, n=401) say they did not raise concerns with anyone (see Figure 4).

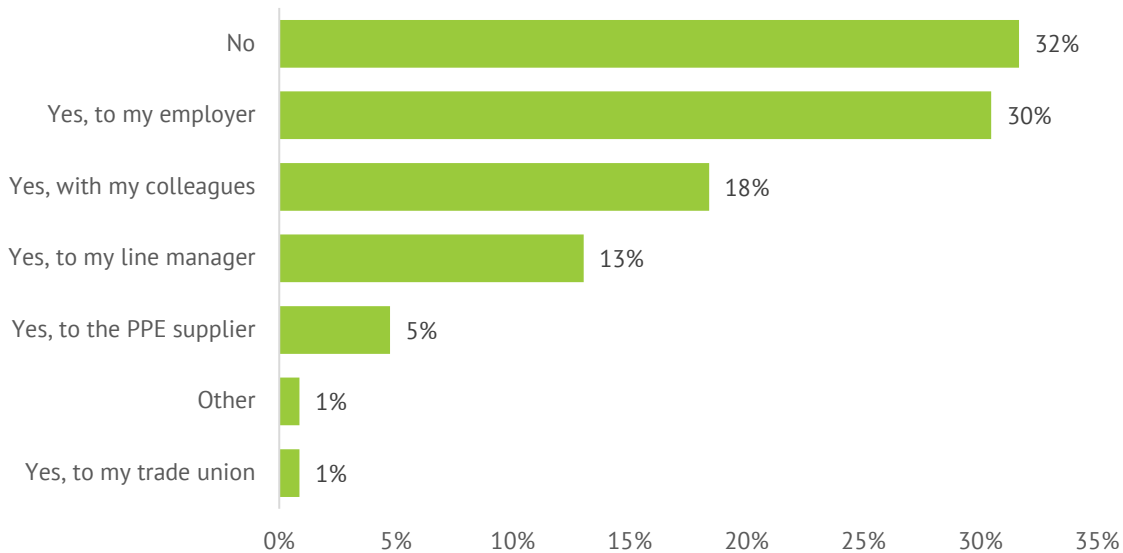


Figure 4. Have you ever raised concerns about ill-fitting PPE? n=1267

Women at times feel embarrassed or worried about their senior staff or colleagues' reactions to raising issues and are concerned they will be seen as vain, unreasonable, or frivolous. The decision-making and willingness to support women accessing PPE depends on individual managers. Not automatically having access to proper-fitting PPE means women face the risk of being seen as demanding or difficult for requesting proper-fitting PPE. This can lead to a negative perception of the individual by their management and can have an effect on their further careers.

“I heard from a friend that my previous employer called me ‘challenging’ when I requested an appropriate respirator, and fit test, for a lead acid battery plant. I was eventually loaned a positive pressure respirator from said friend to ‘shut her up’”.

The survey found that despite many women reporting instances of ill-fitting PPE, these concerns are often not addressed or only partially addressed. More than half (52%, n=413) of those who did raise concerns reported that these were not addressed, compared to only 9% (n=68) who say that their concerns were fully addressed. More than a third of respondents (37%, n=295) believe their concerns were only partially addressed (s. Figure 5).

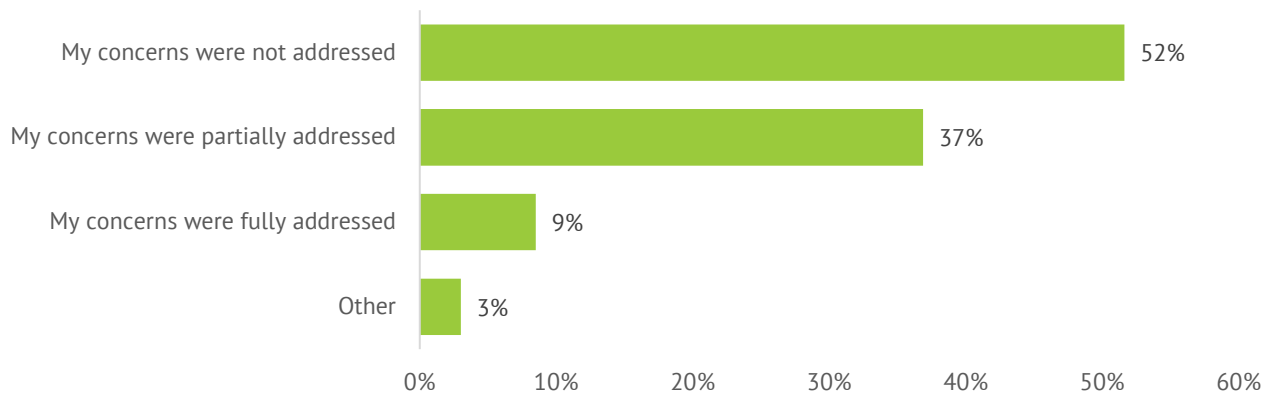


Figure 5. If you raised concerns about ill-fitting PPE, what was the outcome? n=800

Through the qualitative questions in the survey, the responses from employers that women received differed substantially, highlighting that for women raising issues around PPE is challenging, as women risk not being taken seriously. The responses are ordered from most frequently mentioned response to the least reported response:

- **Employer did not respond:** The women that raised the issue did not get any response or reaction to raising the issue.
- **Employer responded but no change occurred:** The employer responded they acknowledged the issue but explained that there was nothing they were able to do because of financial, administrative, or other reasons.
- **Employer took individual action:** The woman who raised the concern was supported in acquiring better fitting PPE but there were no policy or practice changes around PPE procurement.
- **Employer responded and explained it was not an issue:** The employer did not perceive better fitting PPE as an issue and explained that women should just adapt to it.
- **Employer responded and ridiculed the woman raising the concern:** In several cases, women who raised concerns were told they were being vain for requesting better PPE and it was seen as a trivial issue.
- **Employer took companywide action:** In a few cases, the company changed their supplier of PPE or in another way procured PPE for the women in their company.

Women report that there is often limited stock available on sites in cases where PPE is shared across multiple people or where disposable PPE is used. The stocked sizes tend to be larger sizes due to the perception that they are the most used sizes. This results in women rarely having access to safe and fit for purpose on work sites.

The willingness or ability of employers to address concerns also seems to be related the size of the company based on the qualitative answers. Respondents explain smaller companies with more limited resources face financial challenges around procuring better fitting PPE while larger companies often have more access to a wider range of PPE or have PPE in stock. There is often a higher administrative burden for women to access PPE through larger employers with formal procurement structures. For example, one woman explains she would have needed a full occupational health assessment to be able

to submit a request for better fitting PPE. In companies which used branded PPE, women face additional hurdles to request better fitting PPE, as PPE procured through different channels would not have the branding of the company on it.

“My employer provides my PPE which due to budgets they only source from certain places.”

The availability of PPE is, in some cases, not linked to the employers but to the availability of women’s PPE from suppliers. This issue is twofold:

1. There is generally **a lack of available women’s PPE** among suppliers meaning women must spend time and effort exploring the options available to them. This places additional labour, including emotional, on women to identify sources of appropriate PPE. According to women, this research must take place in their own time leading to additional hours spent on a work-related issue compared to male colleagues.
2. There is often a **longer delivery time for items women requested**. This is because women’s PPE is not produced in proportional amounts to men’s resulting in lower stock. Some women explain they waited months to receive their PPE. The lack of timely, accessible equipment can result in women not being able to carry out specific tasks.

“Over time I had to stop doing work in the workshop because I couldn’t find any gloves that would fit me, was sick of fighting to buy gloves that would fit me and did not have time to wait for delivery of gloves that would fit me. I haven’t been in a position to [do part of my work] in about a year.”

3.3 Size and cut

When asked what PPE sizes are available, 38% of survey respondents mention having access to standard sizes for men (n=468) and women (n=471), and 15% (n=190) note that they use gender-neutral PPE where one size fits all. Only 4% (n=51) of women have access to PPE that matches their own measurements (s. Figure 6).

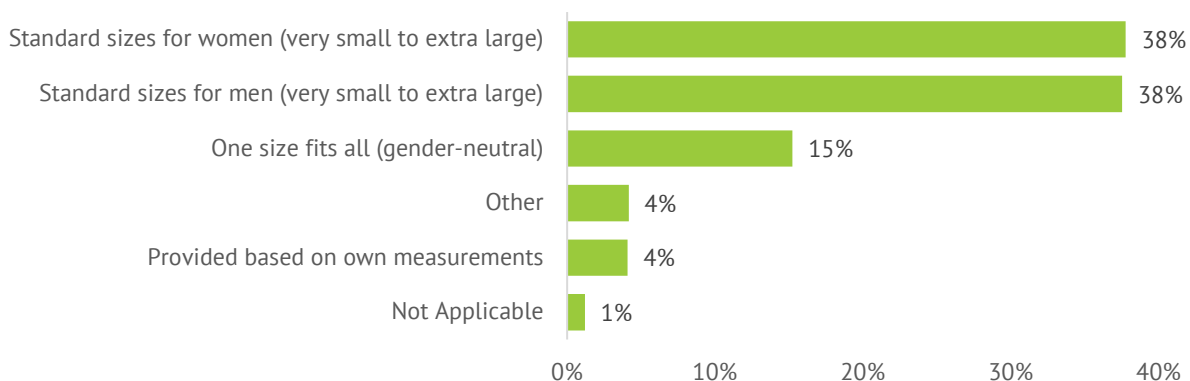


Figure 6. Thinking about the top three PPE items that fit you best, which sizes are available? n=1247

As can be seen in Figure 7 those working in professions in Environment (51%, n=71) and Civil (50% n=68) are most likely to have access to PPE which has standard sizes for women.

Those working in Manufacturing (34%, n=55), Creative Industries (36%, n=6), and Healthcare (25%, n=13) are most likely to have to use gender-neutral or sizes designed for men.

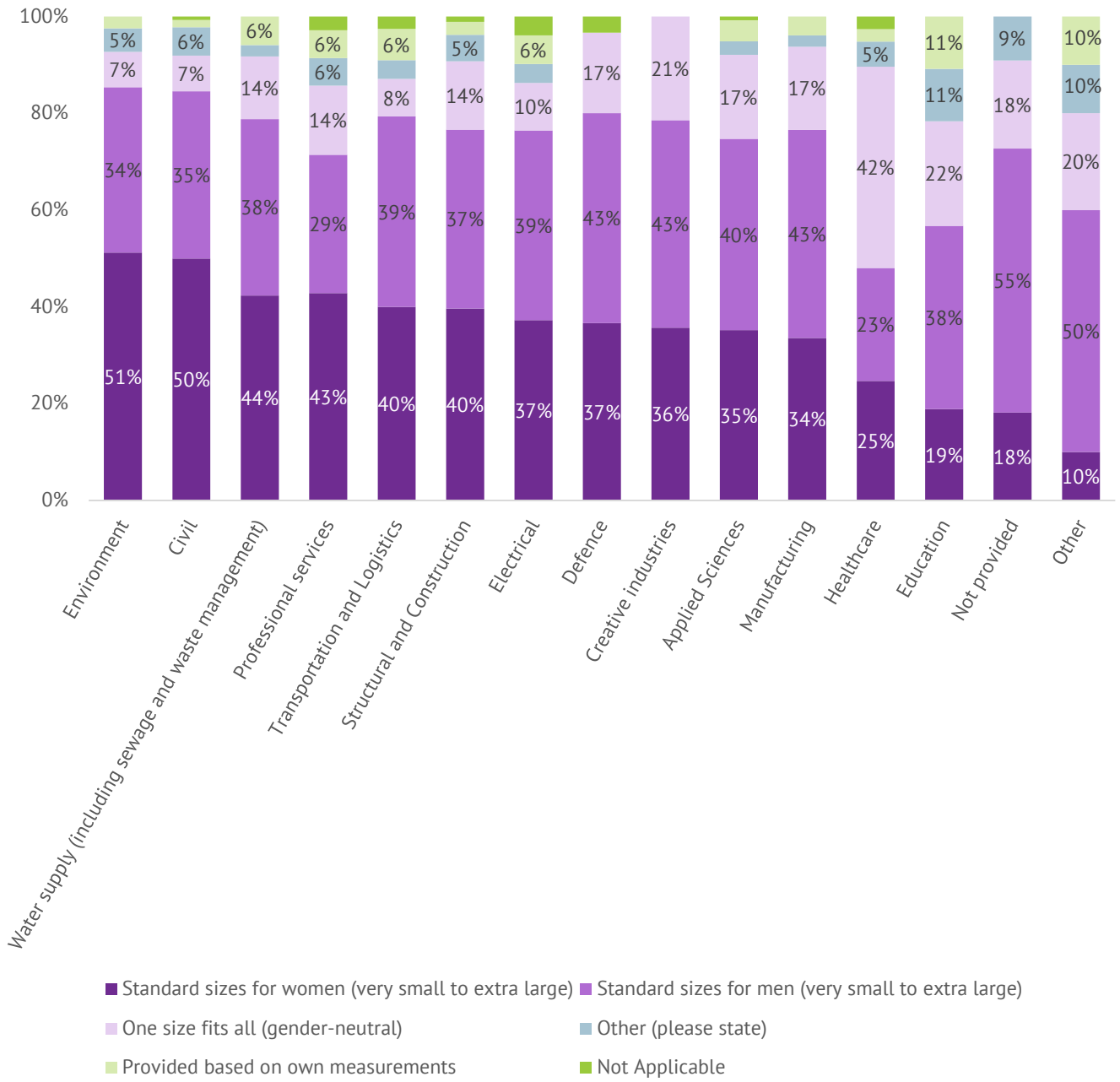


Figure 7. Thinking about the top three PPE items that fit you best, which sizes are available? By profession

While more than a third of survey respondents (38%, n=472) state that their PPE has an average fit a similar amount (35%, n=446) find their PPE to not fit well, compared to 4% (n=44) who find it fits perfectly (s. Figure 8). In comparison, only 12% (n=18) of men stated that their PPE does not fit well, and 16% (n=24) said that their PPE fit perfectly.

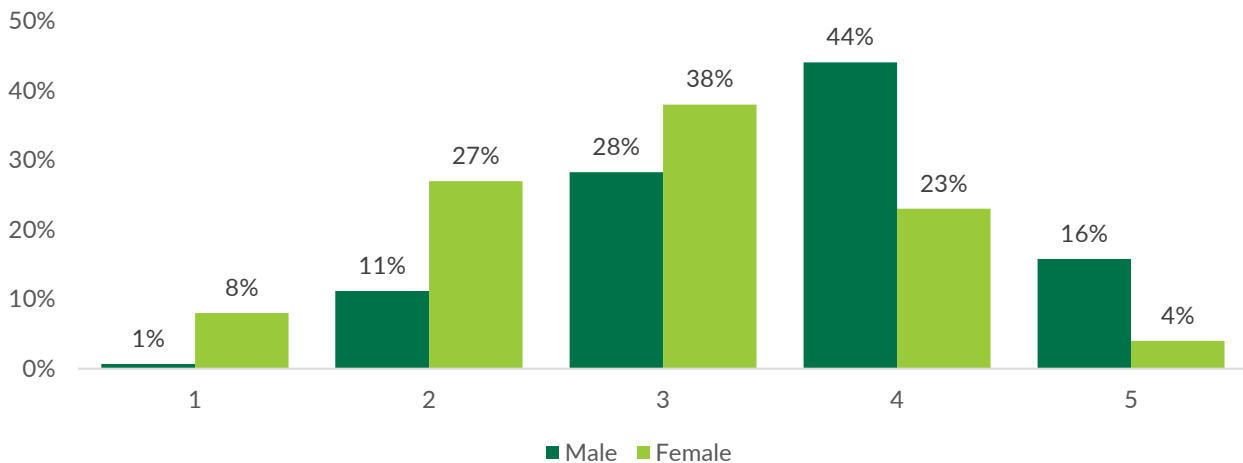


Figure 8. Thinking about the top three PPE items that fit you best, how well does your PPE fit you? (Score 1-5 where 1 is doesn't fit well at all and 5 is fits perfectly, comparison by sex (n=1403))

As seen in Figure 9, 42% (n=518) of survey respondents report having to personally make modifications to their PPE because of poor fit, despite HSE regulations for PPE stating this is not a suitable solution². These include having to:

- **Roll up sleeves or legs:** Rolling up the excessive material to ensure feet and hands are not covered in the excessive material. This leads to bunched up material around the ankles and wrists which is likely to move or unroll and, therefore, needs continuous adjustment throughout the working time.
- **Adjust the tailoring:** Many women either tailor the PPE themselves or take it to a tailor to adjust, often at their own costs (s. section 3.4).
- **Use additional layers:** Women tend to wear additional layers, such as multiple socks or undershirts to make large PPE fit them better. This causes issues particularly in summer when additional layers can lead to overheating.
- **Remove layers:** For PPE that is too tight women remove layers to increase their range of movement, potentially increasing their exposure to the cold and hazardous materials.

² Health and Safety Executive regulations on PPE, [Link](#) [last accessed 10.04.24]

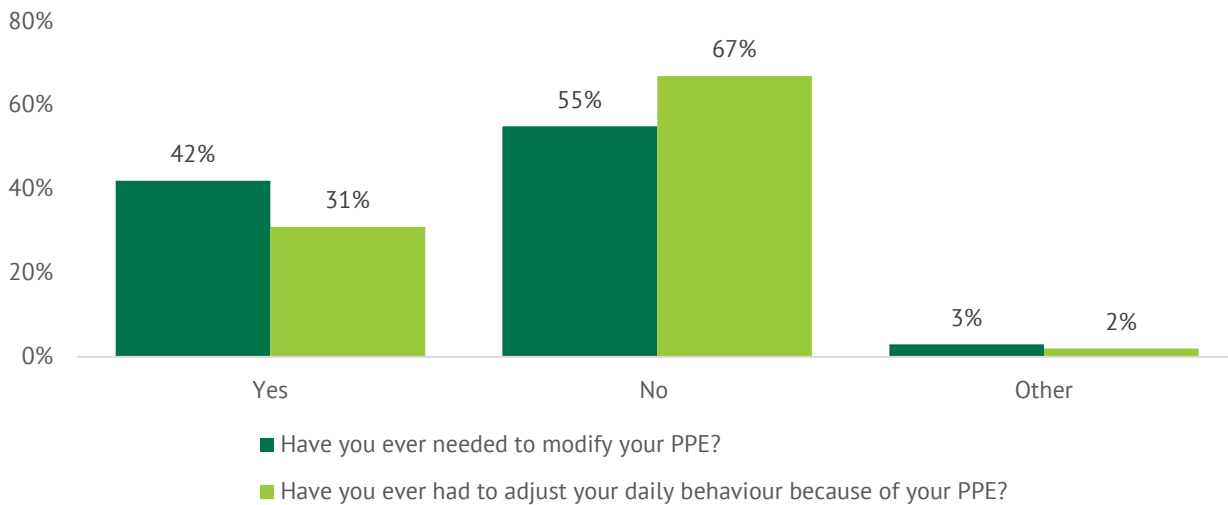


Figure 9. Have you ever needed to modify your PPE?

And Have you ever had to adjust your daily behaviour because of your PPE?

Similarly, 31% (n=379) of women report having to adjust their behaviour because of the equipment they use. This includes having to:

- **Adjust the way they move:** Women report having to take smaller or slower steps, adjusting the way they climb in and out of vehicles or climb ladders.
- **Reduce times or tasks that require PPE:** Women try to reduce the time they need to spend in ill-fitting PPE including reducing the time spent walking in the PPE, and/or skipping breaks to finish tasks quicker.
- **Avoid wearing PPE:** This includes avoiding areas of their workplace or tasks where PPE was required or changing tasks on days where appropriate PPE was not available. This results in women being excluded from conversations and puts additional pressure on women to manage their workloads around the availability of PPE.
- **Bring an extra bag:** PPE is often too tight at the hips resulting in less space in pockets. In addition, women’s specific PPE was reported to have fewer or smaller pockets compared to men’s PPE. Both mean women have to take extra bags for tools and/or daily necessities. This presents additional challenges depending on the worksite and not having a safe, accessible, or appropriate space to store the bag.
- **Change clothes:** Women report having to change clothes at work several times to reduce the time spent in PPE. This requires extra time to change and multiple sets of clothes, as well as careful planning around PPE needs. This contrasts to men’s reported experience in which they can wear PPE continuously.

“[I] can’t drive in orange PPE trousers as they are too restricting, so I have to get changed somewhere, rather than arriving on site in PPE.”

“[I have to] delegate tasks to less qualified people because of lack of dexterity with ill-fitting gloves”

Several specific items of equipment were identified as causing specific issues for women. These are explained below.

Protective bodywear

Protective bodywear includes but is not limited to jackets, overalls, trousers, hi-vis clothes, waterproofs, body armour, lab coats and scrubs.

The main challenge that women face across sectors is that PPE is in most cases based on men's sizes and bodies. This applies not only to PPE that is explicitly labelled as 'men's' but also for 'unisex' sizes. This results in women reporting the following challenges:

- **Wrong sizes:** Particularly petite women report all PPE they own is too big for them, even if they ordered the smallest size available. This results in baggy clothes which slide down their body restricting their movement and requiring continuous adjustment.
- **Wrong proportions:** Many women report that the PPE they use does not account for women's chest and hips or waist. This leads to women having to size up to ensure they can close their PPE. Sizing up, however, causes the PPE to not fit other parts of their body, such as arms or shoulders.
- **Wrong length:** The length of the PPE, in particular arm and leg length, are reported as being too long for most women. This is often exacerbated when the women need to size up to fit the PPE around their chest and hips.

As well as general issues, there are challenges specific to some groups of women. Taller women, plus sized women and petite women explain that there are rarely any proper-fitting PPE options for them:

- For **tall women**, the length of sleeves and legs are often not long enough in both men's and women's PPE.
- For **plus sized women** there are often limited options available as women's sizes only go up to a size 18 and men's PPE often does not accommodate their larger bodies.
- For **petite women**, women's clothing is too long and ill-fitting, and many describe the men's PPE as 'drowning' them.

The survey respondents also acknowledge sizing is not uniquely a women's issue and have witnessed male colleagues struggle with inclusive sizes.

Shoes and gloves

Safety shoes and gloves frequently cause challenges to women. Safety shoes, such as those with steel toe cap, wellington boots and others are the most common individual PPE items which causes challenges. These include:

- **Limited sizes:** Many suppliers of PPE do not have shoes available below a size 7, although in some cases size 5 or 6 are available. There are also no half-sizes available. This means women must wear shoes that are too large for them.

- **Men's sizes:** The shape and support needs of women's feet differ, meaning that for women wearing men's shoes provides insufficient arch support, the heels and overall fit are also too wide. Men's sizes also do not correlate with women's sizes, for example a men's size 6 is 4mm longer than a women's.
- **Laces:** The laces of men's shoes are too long when women were tying the shoes to fit tightly. This creates a trip hazard or risk of the laces getting caught on objects in the workplace.
- **Weight:** Safety boots are often heavy which causes women challenges moving across worksites and leaves some in pain.

“Safety shoes are so bulky that it is painful and impossible to move on site, especially if you need to walk all day in mud.”

The main issue with gloves is that fingers are too long which results in a loss of dexterity affecting women's ability to complete tasks. In some cases, women do not wear the required gloves increasing health and safety risks.

In places where disposable gloves are used, there is often a lack of supply of smaller sized gloves. This seems to be a particular issue for the healthcare sector. In other sectors, such as construction, manufacturing and the energy sector, smaller gloves are not purchased as employers believe not enough employees need them.

“My chemical resistant gloves are cumbersome and make me clumsy, so I opt for double disposable gloves to improve dexterity and reduce risk.”

One size fits all items

Helmets or other head protection, eye protection (such as safety glasses), face masks, and ear protection are items currently stocked as one size fits all. However, many women experience challenges with these mainly because they are too big, even with adjustable fittings, and therefore do not stay in place while working, have gapping, or diminish their protectiveness another way.

Women who wear prescription glasses must wear safety glasses over these which results in pressure points behind the ears. At the same time prescription safety goggles are expensive and not easily accessible to the women.

Respondents report that protective headwear does not account for women's hair. For women to safely operate in work they need to have their hair up, such as in a ponytail or braid, to ensure it does not become a hazard. However, protective headwear does not accommodate for these or similar styles. Headwear, furthermore, did not account for different hairstyles, especially for that of under-represented ethnicities or accommodate for hijabs. This resulted in women having to choose between wearing painful headwear, changing their hairstyles, or not wearing adequate protection.

“My company looked for hardhats that accommodate different hairstyles and they weren't up to industry standards.”

3.4 Supply and costs

The limited supply of fit for purpose PPE and the adjustments women make means that women incur a substantial personal cost to acquire fit for purpose PPE. Survey respondents indicate that, few employers are able or willing to reimburse women for these additional costs. According to the qualitative responses, the main reason women are required to buy their own PPE is primarily because employers are not able to provide them with proper-fitting PPE. Most commonly, the items that women purchase themselves are safety boots, gloves, overalls, or other items of personal clothing as a workaround for ill-fitting PPE.

As seen in Figure 10, 77% (n=1144) of survey respondents report that PPE is paid directly by their employer or the company that they visit (9%, n=136). 9% (n=124) of respondents pay for their own PPE with either an allowance their employer gives them, or they get reimbursed through their employers. Around 5% (n=78) of women must pay for their own PPE, either because their employer does not reimburse them, or they are self-employed.

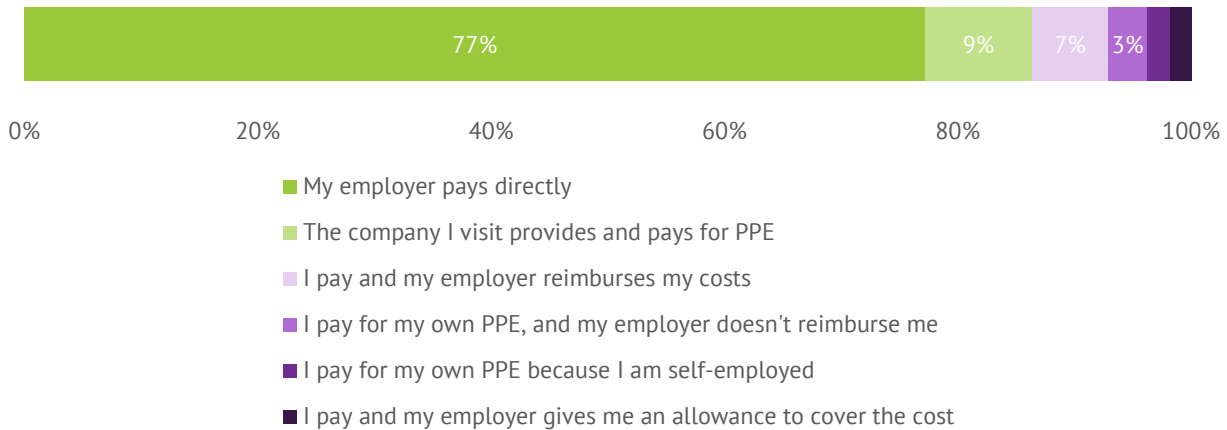


Figure 10. In general, who pays for your PPE? n=1444

For the survey respondents who need PPE to cover more of their body, 55% (n=18) state that their employer provides the PPE, 18% (n=6) need to provide their own and 9% (n=3) receive it from the company they are visiting. It is noteworthy that 15% (n=5) of women did not have access to PPE that

covers more of their body (s. Figure 11).

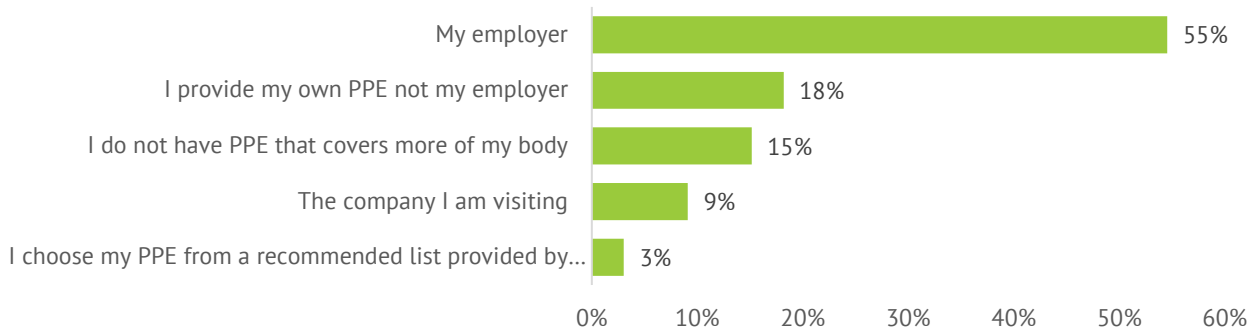


Figure 11. If you need PPE to cover more of your body, who provides your PPE? n=33

Some women report being able to claim back the expenses from their employer, but this varies significantly by employer, and at times the individual supervisor. However, in many cases it was either not possible at all or the administrative burden to place a specialised order or claim expense was too onerous resulting in women using their own income.

“I need to source my own PPE to fit me (e.g. boots, trousers with kneepad pockets which fit, flameproof boiler suit from a different manufacturer than what the company supplier offers).”

In addition, women experience additional costs adjusting ill-fitting PPE. This involves either taking their PPE to a tailor for adjustments or using their own time and equipment to adjust. The tailoring of the PPE can be challenging due to the material of the PPE and the requirements of location of, for example, reflectors on hi-vis clothing. To make ill-fitting shoes more comfortable and less hazardous, several women report purchasing insoles or different laces, as the original ones were too long, at their own cost.

“I have had to have my overalls tailored, at my own cost, to fit as the size provided did not fit anywhere on my body.”

There is a growing number of women-specific PPE items available, however, these are often significantly more expensive compared to men’s. This results in employers being more reluctant to provide women’s specific equipment because of the costs. For example, some companies bulk buy PPE to achieve economies of scale but purchase ‘unisex’ or ‘men’s’ equipment.

“My shoes, which are smaller than the others, are twice as expensive, and in addition my soles are expensive too. The gloves I use are 6 times more expensive than those my male colleagues use.”

3.5 Summary

Many women report challenges in accessing and using PPE that fits them appropriately. The most common challenge women face is PPE being designed for a male user, as men are seen as the average

user. This causes challenges due to the differences in men and women's bodies. This includes differences in chest, hip and waist circumference and ratio, as well as height and feet size.³ These differences mean that women require different measurements in their clothing compared to men, both in length, fit and circumference. Women specific PPE is gradually becoming more readily available, but this is progressing slowly, and the currently available women-specific PPE does not come without issues.

³ The average height of a man in England is 175.9 cm and the average height of a women is 162.4cm. The average shoe size in the UK is 5.5 for women and a 7 for men.

4. Why this is an issue

This next section covers the different ways in which ill-fitting PPE affects women and their ability to work. Survey respondents report that they often only have the choice between using ill-fitting and potentially hazardous PPE or not being able to do their job. As a result, the lack of appropriate equipment excludes women from being able to perform some of their duties, as it would be too dangerous.

“My PPE theoretically protects me, but my role was modified to avoid the most hazardous activities.”

The frequency and duration that PPE is worn for differs substantially across respondents and their roles. Whilst 36% (n=521) are only required to wear PPE on site visits (less than once a week) 17% (n=241) are required to wear PPE every day and 13% (n=191) were not required wear it at all. More than a quarter (26%, n=376) of women were required to wear PPE ranging from at least once a week, to 2-3 and 4-5 days a week (s. Figure 12).

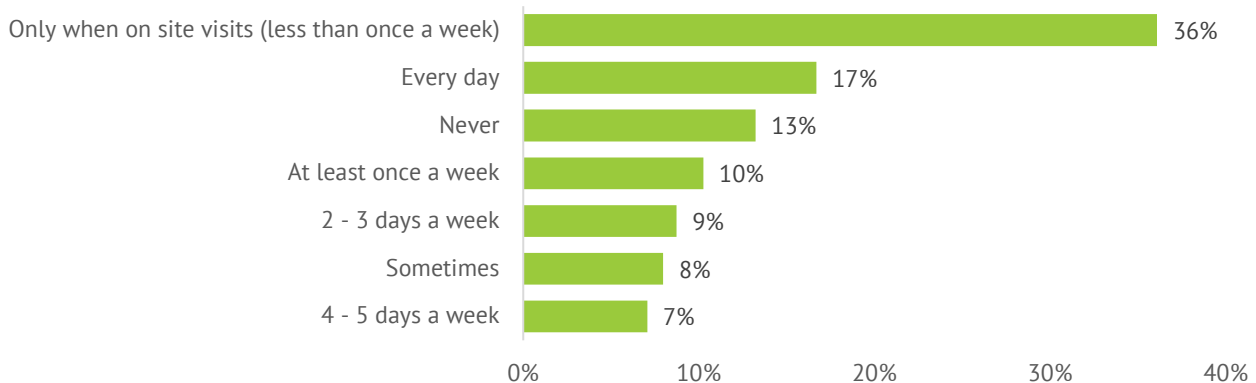


Figure 12. How often are you required to wear PPE to your job? n=1444

Similarly, when required to wear PPE, a third of women (35%, n=434) wore it all day, with just under a third wearing it for 4 hours or more. The remaining 34% (n=431) wore PPE between 1-4 hours, and only 3% (n=39) wore it for less than an hour (s Figure 13).

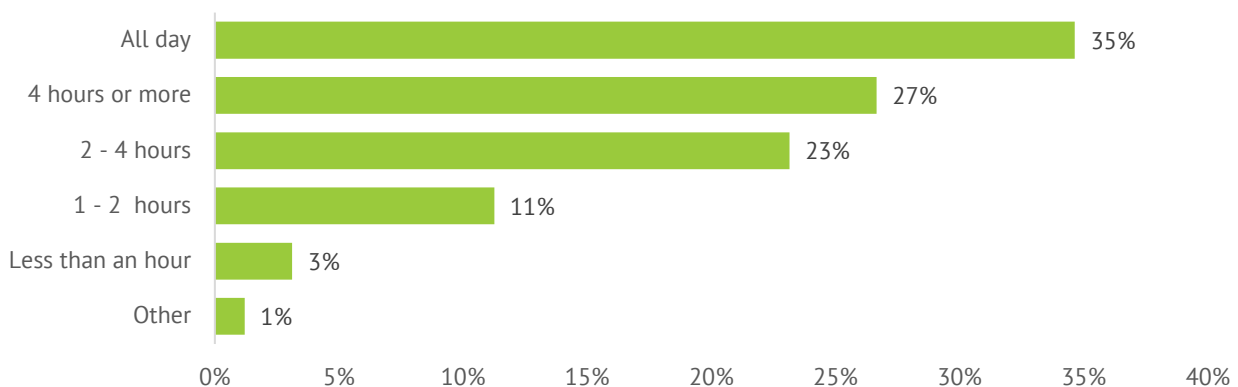


Figure 13. When you do wear PPE, how much time do you spend wearing it? n=1253

Analysis between the frequency and duration of women wearing PPE shows that 59% (n=140) of respondents who must wear PPE every day also have to wear it all day. Similarly, 34% (n=175) of respondents who are required to wear PPE only on-site visits also spend all day wearing it. On average, 71% (n= 71) of women who have to wear PPE 4-5 days a week and 80% (n=191) of those who have to wear it every day spend either 4 hours or more or all day wearing PPE (s. Figure 14).

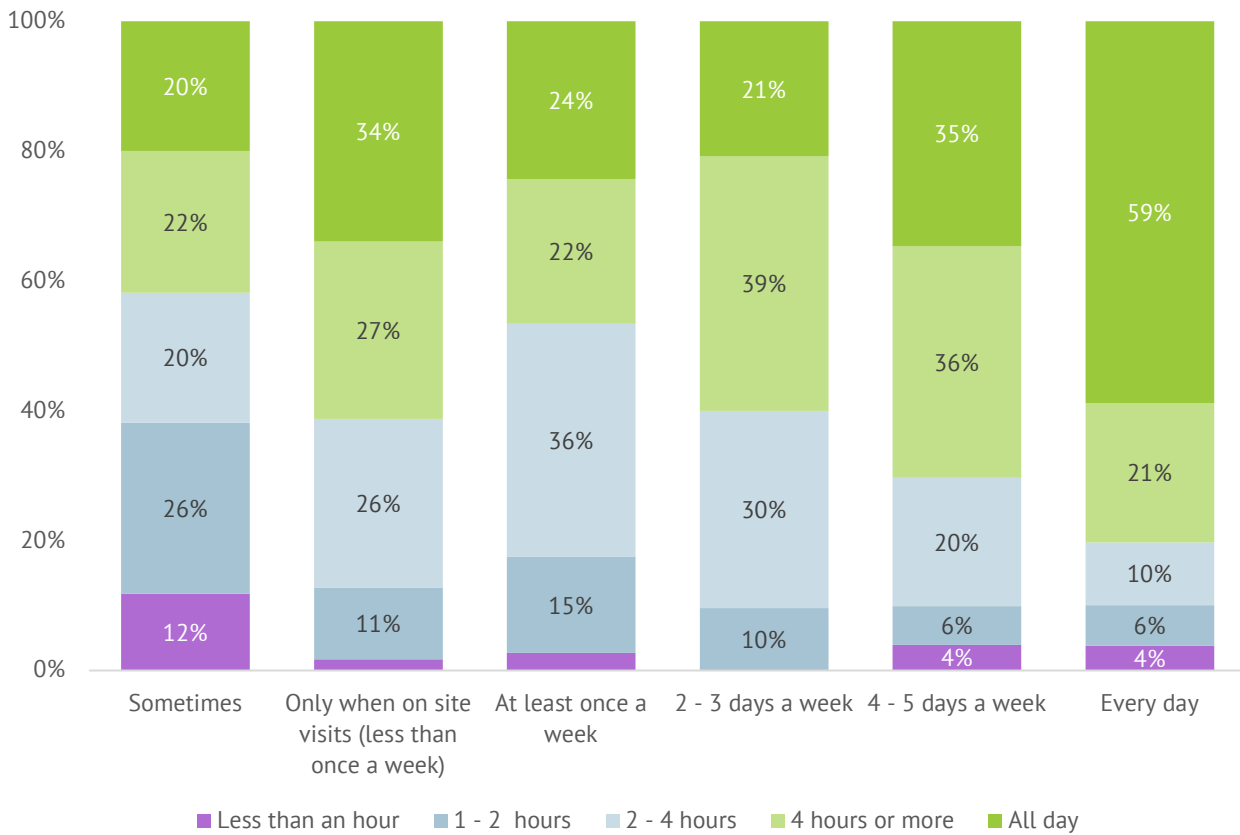


Figure 14. Frequency and duration of wearing PPE, cross tabulation analysis, n=1253

4.1 Hazards and other effects on ability to work

As seen in Figure 15, 50% (n=626) of respondents state that their PPE does not restrict them from doing their job effectively, compared to 18% (n=222) who feel that PPE is restrictive and 32% (394) who feel neutrally about the restrictiveness of their PPE.

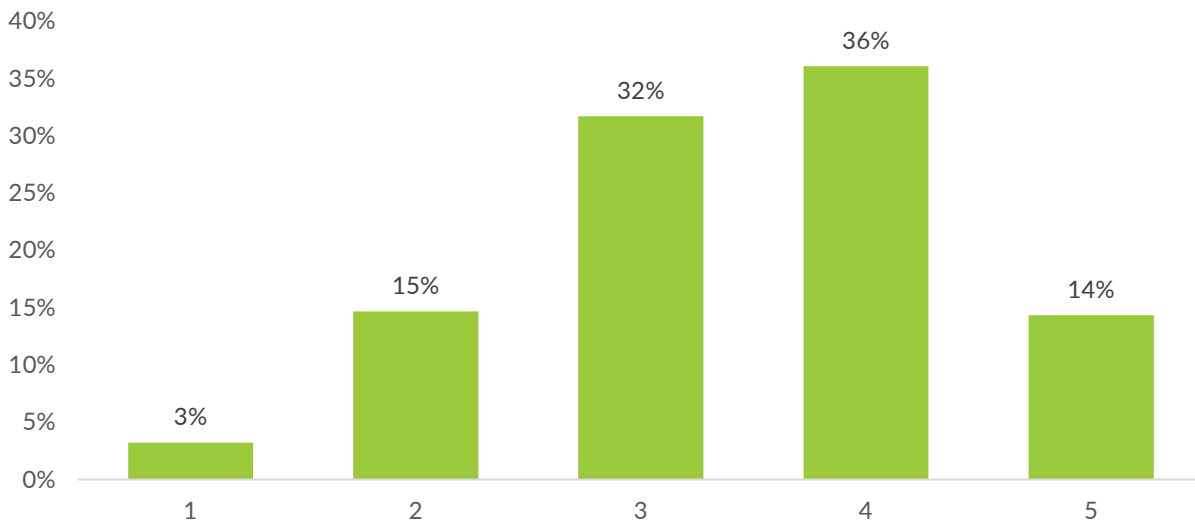


Figure 15. Thinking about the top three PPE items that fit you best, how much does your PPE restrict your ability to do your job effectively? Score 1-5 where 1 is very restricting and 5 is not at all (n=1242)

“I have to tuck my overalls into my boots to avoid tripping over them while working on slippery rocks, however this makes them less effective at preventing disease-transmitting fluids getting on my clothes.”

24% (n=301) of respondents note that their current PPE restricts their movement, whereas 44% (n=559) say it does not and 31% (n=382) are neutral about the restrictiveness of their PPE (s. Figure 16). This indicates that not all women feel the restriction of their movement affects their ability to perform the tasks in their job effectively. The qualitative findings demonstrate that women adapt their way of working to enable them completing their tasks, but often feel uncomfortable doing so or took a longer time to complete the tasks.

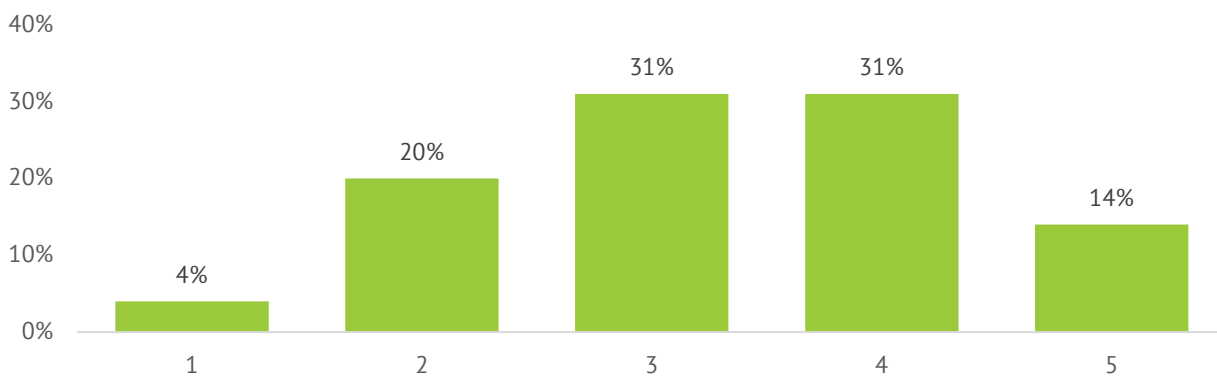


Figure 16. Thinking about the top three PPE items that fit you best, how much does your PPE restrict your movement? Score 1-5 where 1 is very restricting and 5 is not at all, (n=1242)

“Not having full range of movement, especially in a railway environment, is a huge safety risk.”

“PPE boots are too big and difficult to walk in, I was told to just wear ordinary shoes but that wouldn't protect me from heat or spills.”

According to the qualitative questions in the survey, ill-fitting equipment can negatively affect women's ability to work and increase work related risks including:

- **Tripping hazards:** Women are more likely to trip over extra fabric or extra fabric snagging on equipment.
- **Risk of exposure to harm:** Sleeves being too long results in women having to roll them up. These then tend to slide down effecting not just on productivity but also creating hazards, particularly when using machinery, medical equipment or working with hazardous substances.
- **Restricted movement:** This causes hazards particularly for those who need a full range of movement to safely navigate their workplace (i.e. climbing ladders, getting in and out of HGVs or similar). It sometimes results in women not being able to do tasks safely or taking longer to do them as they need to move more carefully or slowly to avoid hurting themselves.
- **Potential risk to life:** A few women use climbing harnesses and emergency equipment including lifejackets or air systems at their workplace, and these do not fit them appropriately, creating a risk to their lives.

To work around the challenges relating to the ill-fitting PPE, women at times must make a judgement on whether it is more hazardous to work with the ill-fitting PPE or without.

“My face is also different, so I have to adjust and modify masks so they are tight enough, to avoid inhaling dangerous dust/particles.”

4.2 Challenges related to health and disabilities

There are several health effects that women experience due to the ill-fitting PPE. The most common injuries women report includes blisters and the clothes being too loose in the wrong places resulting in chaffing and painful irritations to the skin. The most common prevention for this is layering personal, well-fitting clothes below the PPE. This causes other issues, such as overheating, particularly in the summer.

“If I'm walking, I have a lot of thigh chaffing due to the low crotch (usually just inches from my knee).”

The limited protection from the elements women experience through ill-fitting PPE can lead to women being too hot or too cold for extended periods of time or water getting underneath the protective gear. Being exposed to the elements leads to severe discomfort and poses a potential health risk to the women.

“My waterproof bib and braces are too long in the leg so have to be rolled up and too big around my hips to chest which allows water to get in.”

Women report experiencing pain because of ill-fitting equipment. This includes pain due to hair getting stuck in helmets or hardhats, seams being in the wrong places or head, neck, and back pain due to the weight of PPE particularly helmets and other head wear.

“I’ve been left with cuts from chafing caused by the belt. Pressure from the belt makes endometriosis flare ups worse, the body armour vest causes me to sit strangely in the car and causes massive problems on the shoulders and lower back. I think the pressure on my hips has also given me hip pain, clicking hips and sciatica.”

When asked in the survey about the discomfort they experienced, women report that in addition to the pain, the ill-fitting PPE also presents challenges to manage ongoing health conditions or, in some instances, worsen these. Women with disabilities also report additional barriers because of their PPE. Across the qualitative questions, the following challenges were expressed:

- **Medical equipment:** Women using medical equipment such as stoma bags, inhalers, or insulin pumps report that PPE cannot accommodate these. For insulin pumps, women experience challenges to attach it to their clothes due to the bulky material or having to roll up the waistband of their trousers. According to the survey respondents, for stoma bags, it is important where trousers sit on the body. This requires waistbands to be in specific places, such as low or high waisted trousers but the choice is rarely available. In addition, stoma maintenance means that women need to have access to full bathroom facilities, including a sink, at different times of the day to manage their stoma bag. The frequency for changing a stoma bag depends on the reason a person needs one.⁴
- **Chronic conditions:** A range of chronic conditions, such as arthritis, IBS, nerve pain, and spinal injuries require PPE that is accommodating to these conditions. This means PPE needs to be simple to put on and off, including having accessible fastening mechanisms (i.e. buttons can be a challenge for people with arthritis). The weight and tightness of PPE causes flareups or pain for those with chronic conditions. Different conditions are likely to require different adjustments, requiring consultation with the individual what needs there are to ensure the PPE is accessible.
- **Limb differences:** Limb differences require adjusted PPE which protect the individuals adequately while allowing women to carry out their work. Like chronic conditions, depending on the limb difference, there are likely different adjustments needed and having conversations with individuals about the adjustments needed.
- **Deafness or hard of hearing:** Particularly in working environments where masks are being used it can be challenging for individuals relying on lip reading and facial expressions to communicate. Having PPE that does not accommodate this excludes deaf people and people who are hard of hearing from the workplace. Having in-ear hearing protection was a challenge for those using hearing aids and results in individuals having to work without their hearing aids.
- **Gynaecological conditions:** Endometriosis is one of the most common gynaecological conditions with at least 1 in 10 women are living with it. The condition is associated with causing severe pain at

⁴ Bladder and Bowel (2024) How to change a stoma bag. Available at: <https://www.bladderandbowel.org/bowel/stoma/change-stoma-bag/>. Last accessed 29 March 2024

different stages of a women's menstrual cycle, including severe abdominal pain and bloating.⁵ This means around the endometriosis flareups the abdomen of women with endometriosis can change in size significantly, as well as be more sensitive to tight or stiff clothing, requiring softer or adjustable PPE.

“[I have] hypermobile joints. The heavy boots cause my feet and ankles to dislocate.”

4.3 Looking professional

Several women say they feel unprofessional in the ill-fitting PPE. The most common phrase used to describe this is: **“I felt like I was playing dress up in my dad's clothes.”** According to the qualitative responses, oversized PPE leads to their colleagues and clients taking them less seriously, particularly those working in male dominated industries such as construction, manufacturing, and the energy sector. Some of the women report getting negative or degrading comments from male colleagues.

“Older coworker men considered it funny that short women's PPE didn't fit. Once I was told I didn't need new PPE and only wanted it to look good in selfies.”

Plus-sized women report that they sometimes struggle to access well-fitting PPE and having equipment that is too small or unavailable is awkward for them and their colleagues. Stigma around weight means that women requiring larger PPE are exposed to comments about their weight and health and make women reluctant to speak up. At the same time, having to ask for larger sizes results in feeling judged and requires embarrassing conversations with superiors or colleagues.

“It's embarrassing, I avoid going on site as much as I should as I look and feel stupid. As a young woman like others with body hang-ups this just magnifies and literally illuminates my issues and hang-ups giving me huge confidence issues.”

As previously mentioned, women explain they try to adjust their PPE often. At times women use materials available at work, such as safety pins, cable ties or duct tape. Women explain if these adjustments were visible, they feel they look less professional.

The cut of certain items provided a further challenge to being perceived as professional through showing excessive amounts of skin. Women who only have access to men's work trousers reported that low waistlines exposed their back or bottom. Medical personnel wearing scrubs explained that when they sized up to fit into the PPE the V neck scooped too low exposing their chest. This led to them feeling unprofessional, as well as receiving inappropriate comments from colleagues.

“With tops as you can't choose a length, they are far too short for me, so I still have to order men's tops to have some dignity.”

⁵ Endometriosis UK (2024) What is endometriosis? Available at: <https://www.endometriosis-uk.org/what-endometriosis>. Last accessed 29 March 2024.

The survey respondents acknowledge that whilst there is an increase in the availability of women's specific PPE, this is not always appropriate or professional for the following reasons:

- **Inconsistent sizing:** Women's PPE is inconsistent to high street clothing sizes and is often significantly shorter or smaller resulting in women not being properly covered by the PPE (i.e. too short shirts or jackets). At the same time, the sizing and fit does not accommodate women's chests or hips better than men's PPE.
- **Lower safety specification:** Where women's PPE was available, women reported that several options had lower protection standards⁶ compared to equal men's PPE. This limits the accessible options to women.
- **Colours:** Women's PPE is often available in different colours compared to men's PPE. Women's PPE tends to be available in pink or purple, or with floral patterns. Women explain that this means they stand out more on sites and receive derogatory comments from their colleagues.
- **Pockets:** Survey respondents report that women-specific PPE has smaller or fewer pockets than men's or had pockets on the chest which made it difficult to access and resulted in inappropriate comments from colleagues. Due to the lack of pockets women are at times not able to have all the tools they need on their person or need to bring additional bags to carry the tools.

“I don't like when they make the women's PPE pink. People on site make fun of you.”

“I have had to carry a bag as the pockets were inadequate on the trousers, and there were none on the vest.”

4.4 Sensory effect

Ill-fitting PPE has some effects on women's senses with sense of touch (36%, n=437), vision (18%, n=222), ability to communicate (11%, n=131) and hearing (11%, n=125) being the most restricted. Conversely senses of taste (85%, n=1074), smell (75%, n=1034) and breathing (64%, n=996) tend not to be restricted for those who have completed the survey. (s. Figure 17).

⁶ PPE items often come with different safety or purpose requirements depending on their use. Different activities might require different levels of protection.

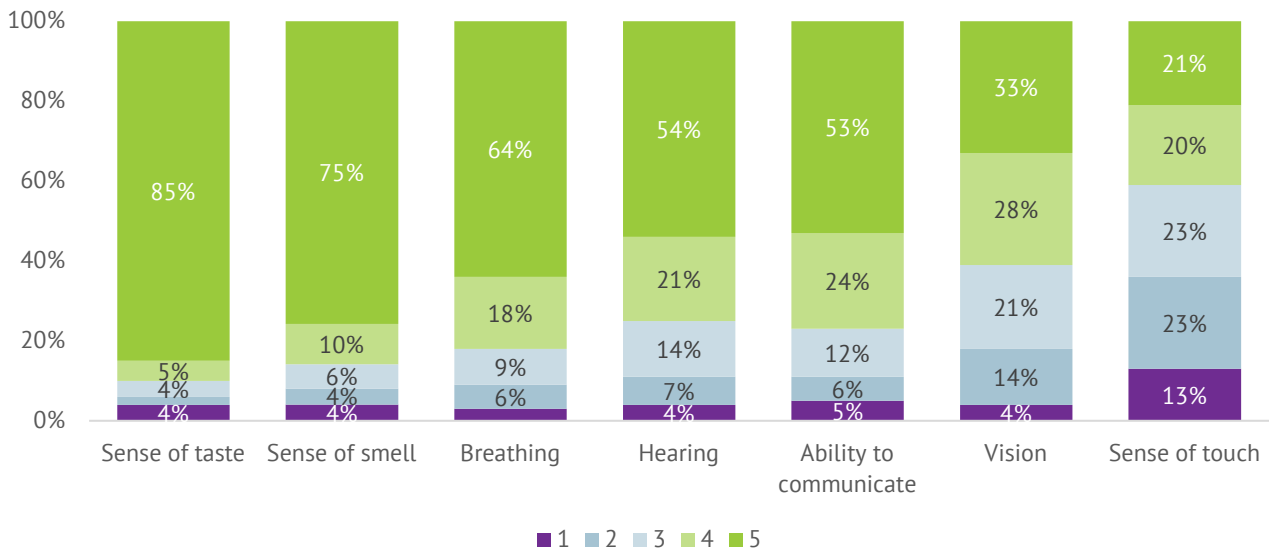


Figure 17. Thinking about PPE items for your face/head/hands/chest, how much does your PPE restrict your [sense] at work? Score 1-5 where 1 is very restricting and 5 is not at all

Some respondents report challenges with their PPE due to their sensory processing. This includes people with autism, sensory processing disorder or other (mental) health conditions. They explain that the material of the PPE was irritating and distressing them, and negatively affecting their work.

“I have sensory issues, nothing fits so I get rubbing, I’m constantly having to readjust everything, so it doesn’t fall off / get in the way of work. I get sensory overwhelmed by it and feel I stick out from my male colleagues looking unprofessional because I’m being hindered while I work by my PPE.”

The materials are not always breathable making women sweat and making the PPE cling to their body in ways which made them feel uncomfortable. The material of some PPE was scratchy and irritated skin, as well as caused distraction to respondents.

“I am autistic and so have sensory needs. I must make sure that the clothes I wear under my overalls are soft, and when something is uncomfortable it can niggle at me a lot.”

4.5 Religious, cultural, and personal reasons

When asked whether PPE items need to cover more of women’s body for religious, cultural, or personal reasons, only 2% (n=29) of survey respondents replied ‘Yes’. Due to the low sample size, we were unable to conduct cross tab analyses with other demographic data such as age, ethnicity, profession, and highest level of education to explore this in any further detail.

There were also limited options for PPE that are vegan, and existing options were often more expensive.

5. Specific needs

5.1 Different stages of life

Out of 461 survey respondents who need their PPE to take account of any additional needs, 64% (n=297) mentioned periods, 18% (n=81) menopause and 14% (n=65) other physical or medical needs (s. Figure 18).

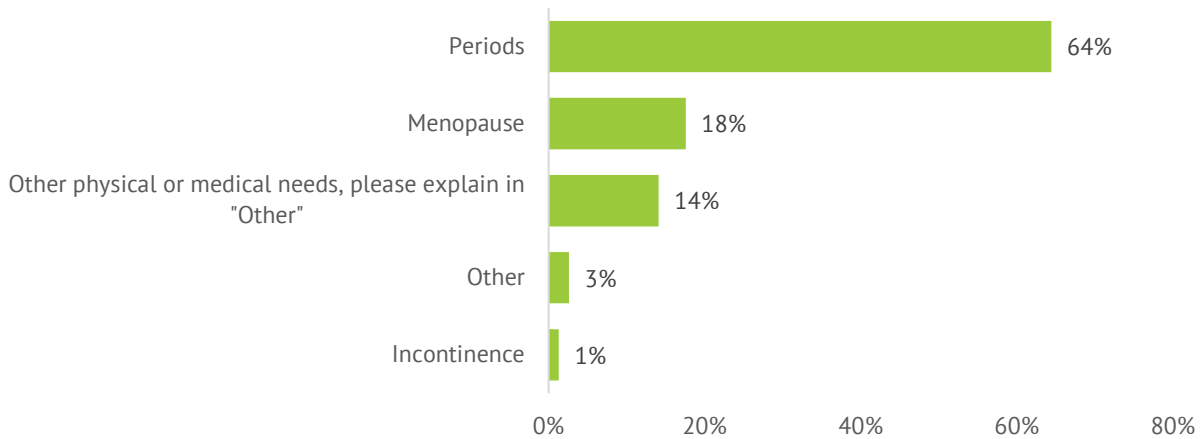


Figure 18. Have you ever needed your PPE to take into account any of the following? n=461

The open text responses highlighted the breadth of respondents' other physical or medical needs that they needed their PPE to consider, such as:

- Vision and hearing impairment
- Reduced mobility
- Crohn's Disease
- Achilles tendonitis
- Dermatitis
- Raynaud's Syndrome
- Nerve pain
- Respiratory conditions
- Endometriosis
- Allergies
- Uterine fibroids

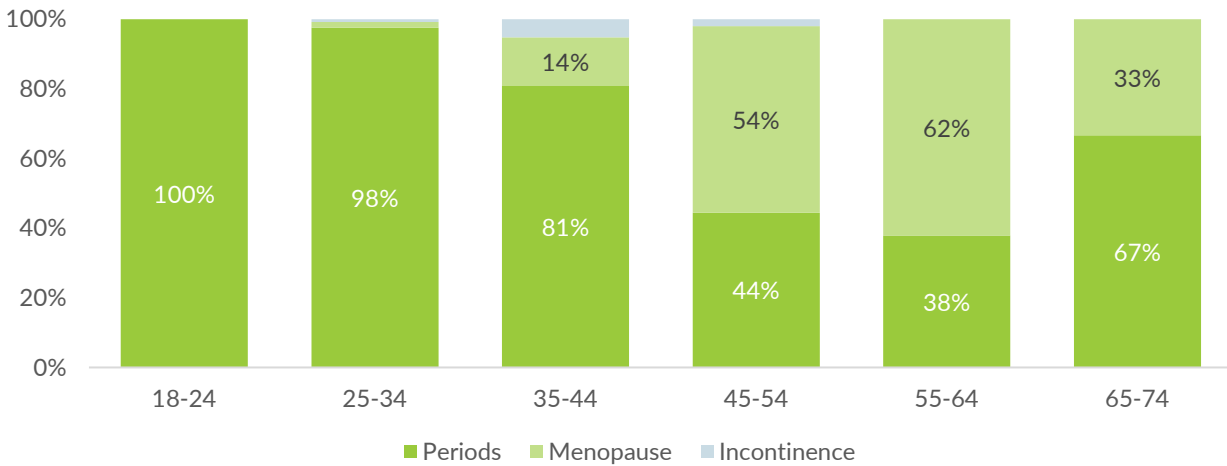


Figure 19. Have you ever needed your PPE to take into account any of the following? by age, n=409

5.1.1 Pregnancy

Out of 1247 responses to Q27, 11% (n=141) needed maternity PPE (s. Figure 20). However more than half (61% n=87) of those respondents were not provided with maternity PPE or had to provide their own, compared to just 16% (n=22) who were provided with this. Just under a quarter of women (23%, n=32) who chose 'Other' as an option mentioned having to adjust their own PPE, wear a bigger size in order to fit with their maternity needs as the company was unable to provide adequate alternatives (s. Figure 21).

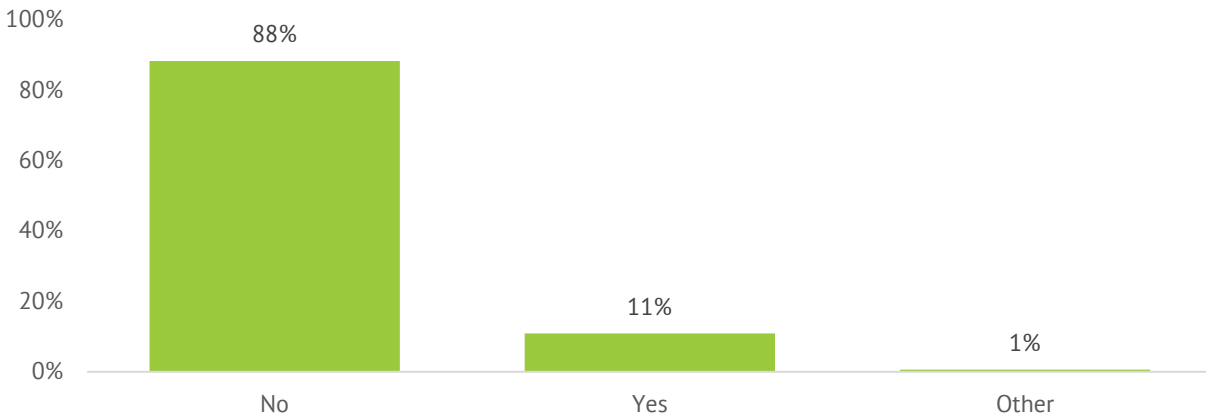


Figure 20. Have you ever needed maternity PPE? n=1247

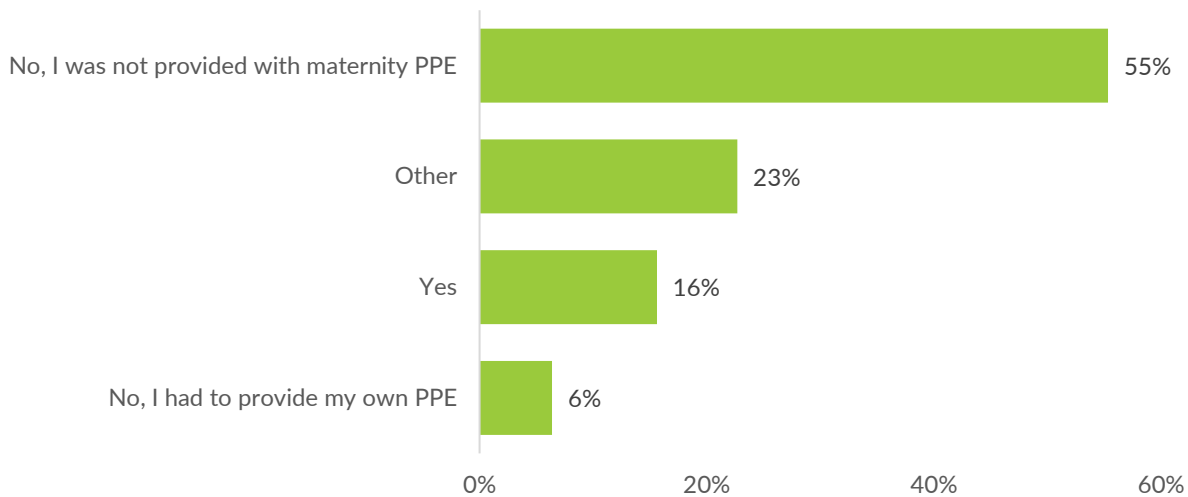


Figure 21. If you needed maternity PPE did your company provide it? n=141

As seen in Figure 22, 51% (n=73) of respondents found that their maternity PPE to be very or somewhat uncomfortable, compared to only 14% (n=20) of respondents who rated it as comfortable and 35% (n=51) who were neutral.

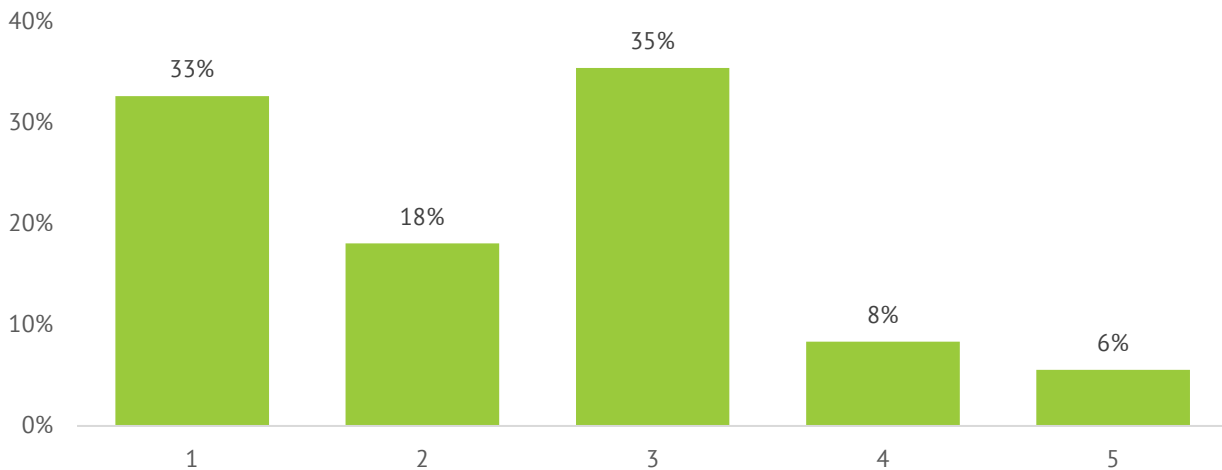


Figure 22. Thinking about maternity PPE, how comfortable was your PPE? Score 1-5 where 1 is very uncomfortable and 5 is very comfortable, (n=144)

42% (n=57) of the respondents who picked a 'Yes' response (s. Figure 23) noted that the maternity PPE provided affected their ability to continue in their role. 22% (n=30) were affected until they went on maternity leave 19% (n=26) had to change their role until they went on maternity leave, and 1% had to leave the company before their maternity leave commenced. Similarly, 5% (n=7) mentioned having to change roles immediately due to a lack of appropriately fitting PPE.

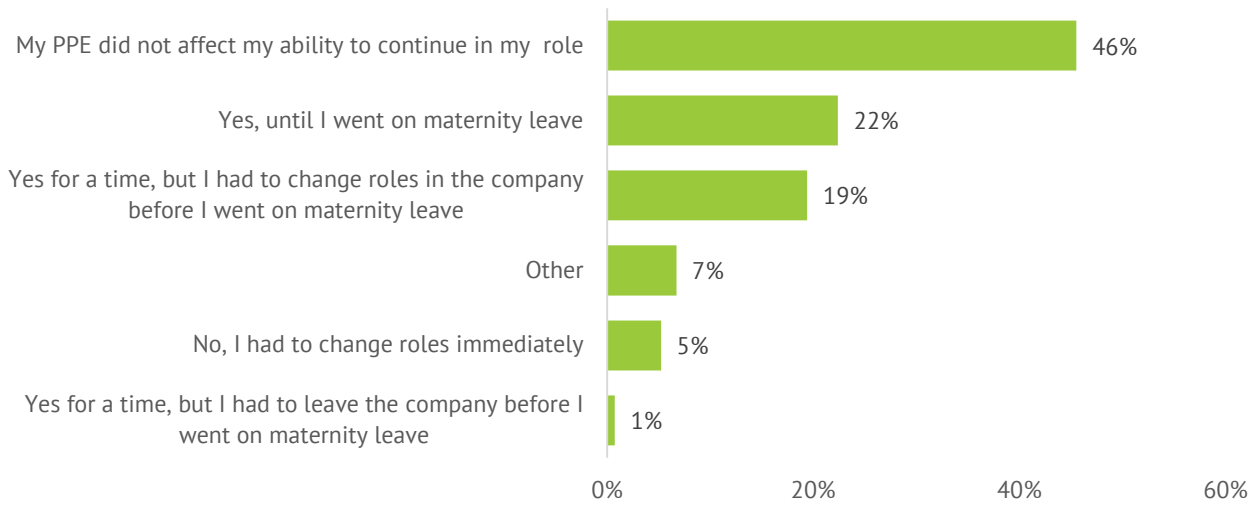


Figure 23. If you needed maternity PPE, did your PPE affect your ability to continue in your role until your agreed date for maternity leave? n=134

There are some differences across sectors regarding the provision of maternity PPE. Less than 20% (n=4) of women who worked within Applied Sciences, Healthcare, Transportation and Logistics and Structural and Construction, or Professional Services were provided with maternity PPE. A third or more of women working in the Civil and Professional Services sectors were provided with maternity PPE. Furthermore, women working in professions such as Electrical, Education, Transportation and Logistics, Manufacturing, Water Supply and Healthcare had to provide their own maternity PPE.

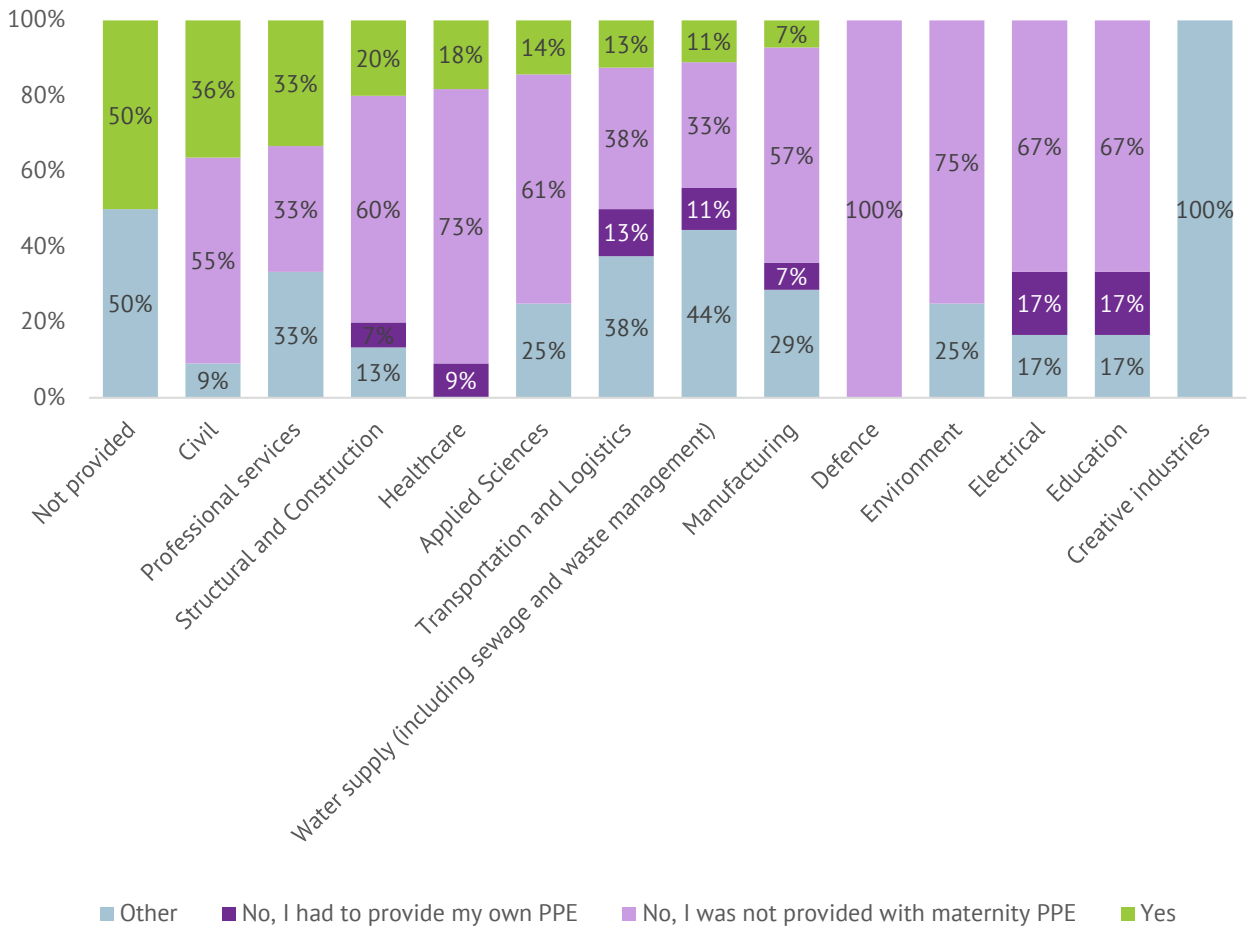
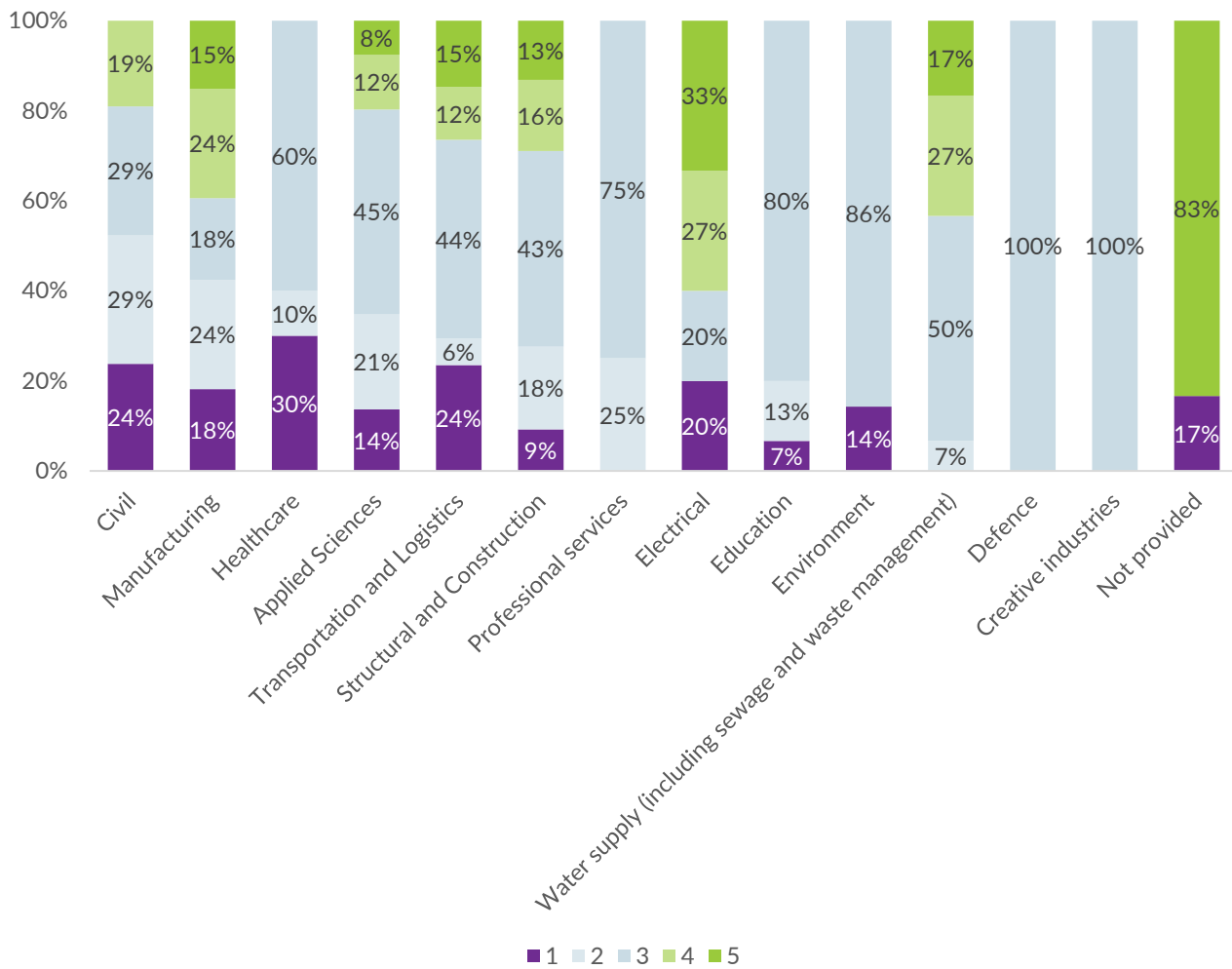


Figure 24. If you needed maternity PPE did your company provide it? n=141

Women who did not disclose their profession, those working in Manufacturing, Water Supply and Electrical sectors were more likely to rate their maternity PPE as more comfortable compared to those working in Applied Sciences, Healthcare, the Civil sector. Nonetheless, around a quarter or more of women working in Healthcare, Transportation and Logistics, Civil and Electrical sectors thought that their maternity PPE was very uncomfortable.



**Figure 25. Thinking about maternity PPE, how comfortable was your PPE?
Score 1-5 where 1 is very uncomfortable and 5 is very comfortable, by profession**

PPE did not affect the majority of respondent’s ability to continue in their role until their agreed date of maternity leave. However, just under 50% of women working in Structural and Construction, Manufacturing, Healthcare, Environment and Applied Sciences stated that the lack of maternity PPE did affect their ability to continue their roles and left their roles prior to going on maternity leave. Likewise, 60% of women working in the Electrical sector were also unable to continue their role or had to leave the company, and 10% of respondents working in the Structural and Construction and Healthcare professions were required to change roles immediately (s. Figure 26).

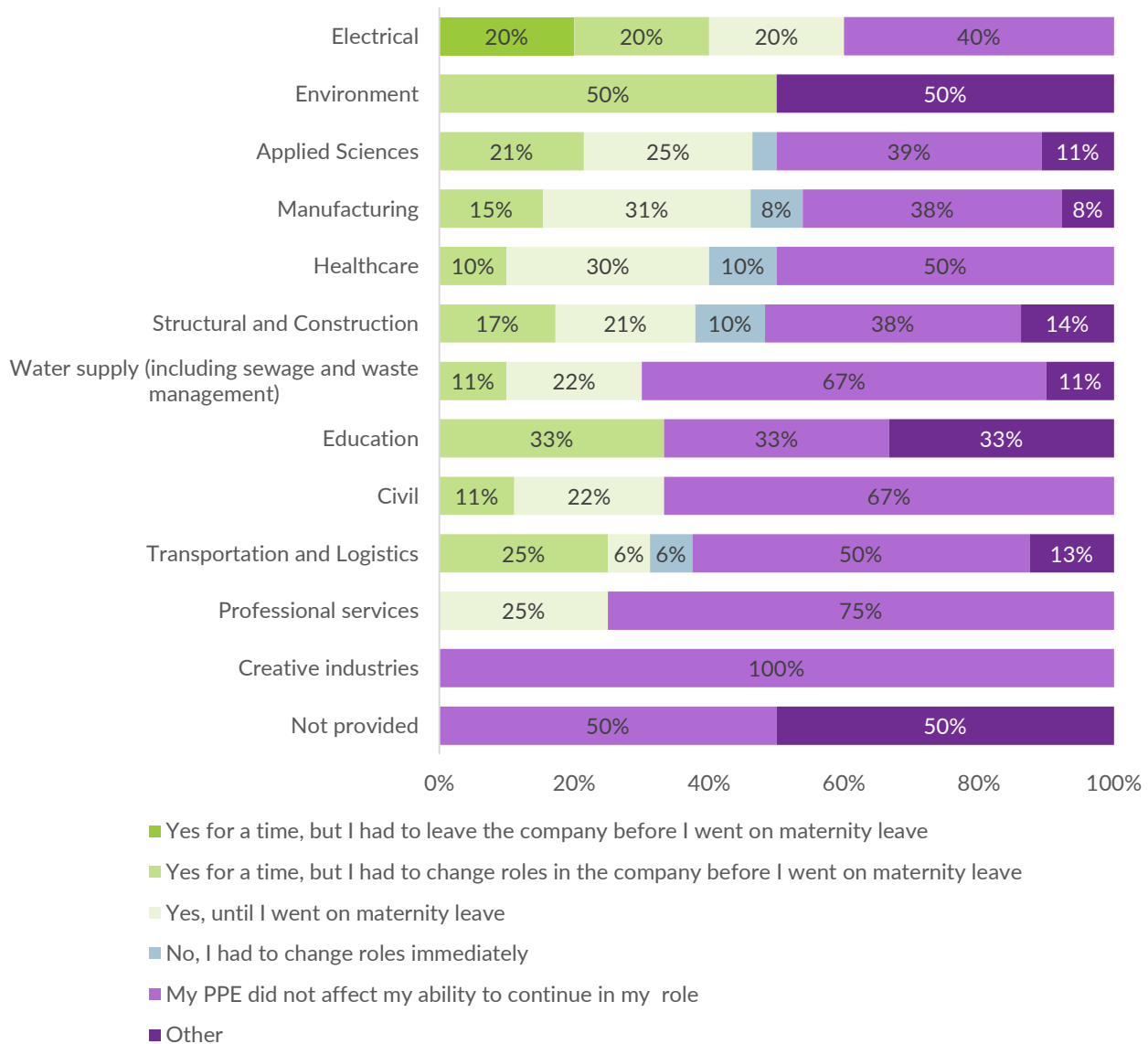


Figure 26. If you needed maternity PPE, did your PPE affect your ability to continue in your role until your agreed date for maternity leave? by profession

Just under half of respondents found their maternity PPE to be neither comfortable nor uncomfortable and around a third of respondents found their maternity PPE uncomfortable. Only 9% (n=5) of women aged 35-44 and no respondents aged 45-54 rated their maternity PPE as very comfortable (s. Figure 27).

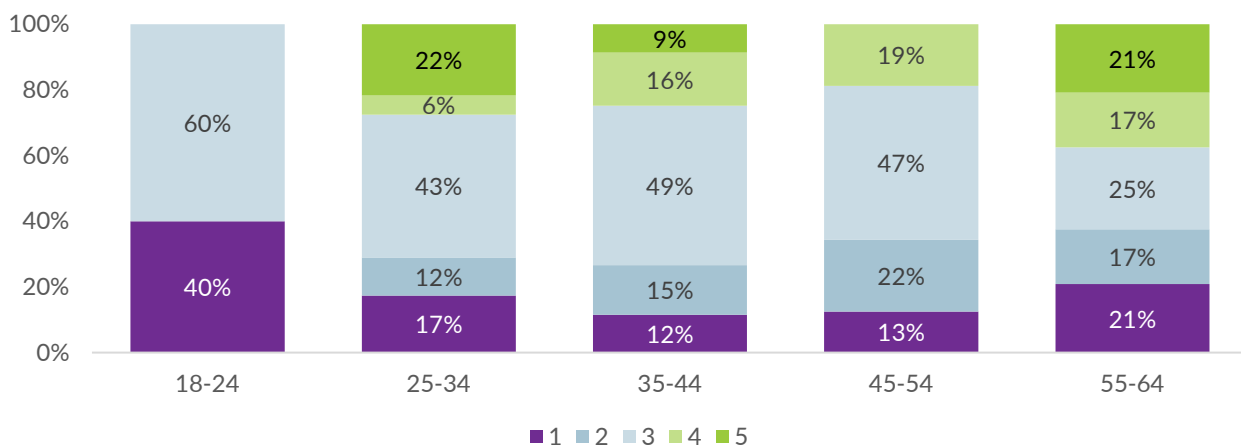


Figure 27. Thinking about maternity PPE, how comfortable was your PPE? Score 1-5 where 1 is very uncomfortable and 5 is very comfortable, by age

5.1.2 Menopause

Women who are experiencing pre-menopausal or menopausal symptoms report that the PPE does not take their needs into account. Hot flushes are a particular challenge as the PPE is too warm and does not have options to regulate temperature. The material of a lot of items of PPE is not breathable and made hot flushes worse for the women experiencing them.

“[I] find the material too hot and not breathable as someone going through perimenopause, it is difficult to control hot flushes and I end up feeling wet through.”

According to the qualitative responses, the PPE is not suitable or adaptable for the physical changes women experience around menopause. This includes weight gain and changes to their body shape. As women go through menopause, they might require new or different PPE to account for these changes.

“I’m concerned about having the overalls taken in too much around the legs/waist as my weight can change, especially with menstrual bloating and being in perimenopause.”

5.1.3 Periods

Women report challenges accessing the bathroom in their PPE. This is because of the bulkiness of PPE which needs to be taken off in often tight bathroom spaces, Portaloos or on in the outdoors. The PPE, especially overalls and waterproof trousers, can require women to remove most of their clothing to access the bathroom, as they have no specific adaptations for bathroom access, unlike for men. It also requires significantly more time for women to use the bathroom to the extent that several women had received comments from male colleagues about the time they are spending in the bathroom. As a result, some women report they avoid drinking water or going to the bathroom. This challenge exacerbates around their periods. On days where women require more frequent access to bathrooms, such as when they have their periods, this affects their productivity due to the time needed to access the bathroom.

“I have to strip off my PPE to use the bathroom because it’s so bulky and restricts movement. This is especially difficult as it takes time and I have to restrict hydration, so I don’t have to go to the toilet as much.”

According to the qualitative data, the PPE also does not account for weight changes and bloating that frequently occur around a woman’s menstrual cycle meaning PPE will fit differently at different stages of a cycle, affecting how fit for purpose the PPE is.

“Women’s bodies change over the month, with bloating, discomfort etc - expandable and softer waistbands would be better.”

Some PPE items are only provided to women in light colours which makes the women feel anxious around their periods. They are worried about bleeding through the PPE which would make them feel unprofessional and expose them to comments from male coworkers. They feel especially uncomfortable if the company provides the equipment. A lack of pockets means that women need to take additional bags for their personal belongings, including sanitary products. This makes women stand out on the worksites as men’s PPE comes with sufficient pocket sizes that meet their day-to-day requirements.

“My coveralls on a nuclear site were white to show if any spills had occurred. Sadly, this meant that for a woman, any leaks were also seen. It happened but was quite a taboo topic of conversation.”

Women who brought up the issues of their PPE and the effect it has on them during their periods report not being taken seriously and male senior staff they discussed this with were embarrassed discussing period-related needs and impacts.

5.2 Highest level of education

The data and charts presented in the following sections vary and have been selected based on whether any relevant findings or differences among age, ethnicity, highest level of education and profession were identified. We have determined the relevance of the findings by examining the differences in percentages of each demographic group and only reporting if there is at least a 10% difference between two given groups.

Across all education types, most respondents raise concerns about ill-fitting PPE with the majority choosing to contact their employer or line manager. Respondents who had completed a Degree Apprenticeship or Foundation Degree are most likely to raise concerns about their PPE compared to other education levels, and more than half raised these concerns with their employer. Women who completed an apprenticeship/HND are more likely to raise concerns with their line manager. On the other hand, respondents who had a GCSE/BTEC as their highest qualification are the least likely to bring awareness about unsuitable PPE items (67%, n=14), followed by those with some university study. This

implies that women who hold a higher educational qualification are more likely to raise concerns about PPE with their employer, colleagues or PPE supplier compared to those with lower qualifications (s. Figure 28).

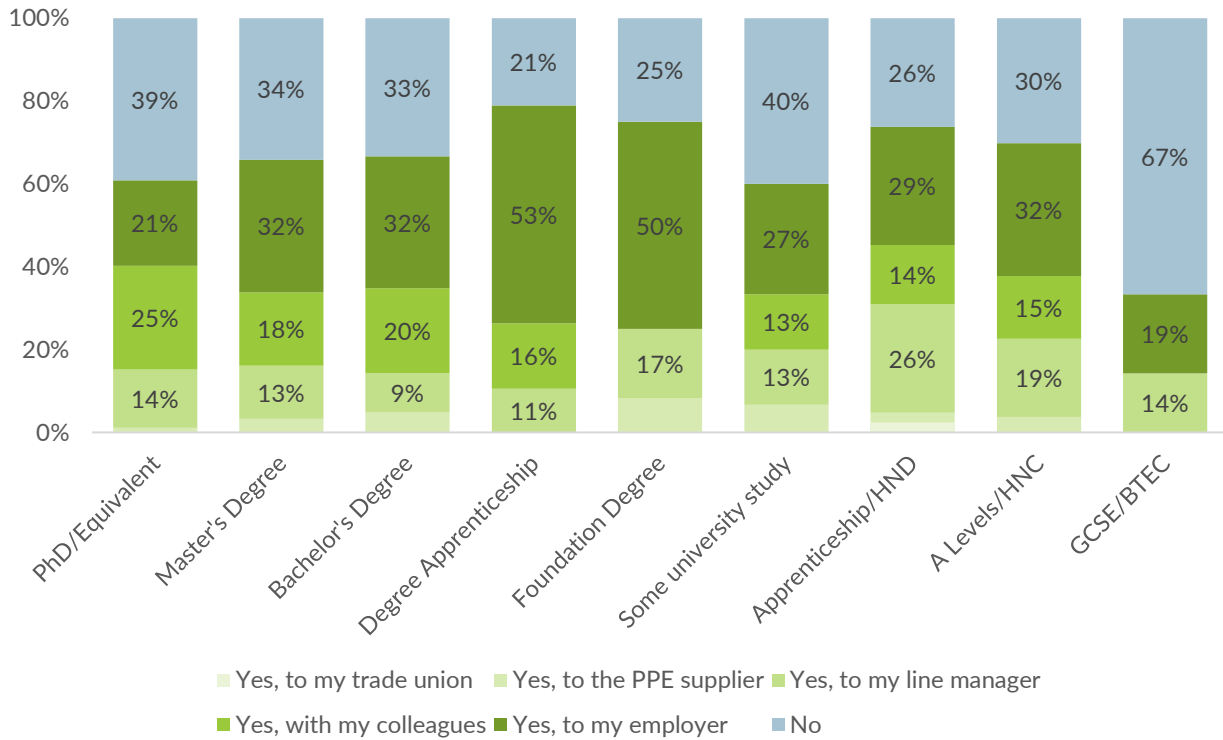


Figure 28. Have you ever raised concerns about ill-fitting PPE? by education, n=1172

Overall, employers did not fully address women’s concerns about ill-fitting PPE. More respondents with mid or lower level qualifications such as a Degree Apprenticeship, Foundation Degree and GCSE/BTEC reported fully addressed concerns (11%-14%) compared to their counterparts with higher qualifications (6%-9%). Nonetheless, around 50% of women’s PPE concerns were not addressed, and women whose highest level of education was a GCSE/BTEC qualification exhibited the highest percentage (63%, n=5).

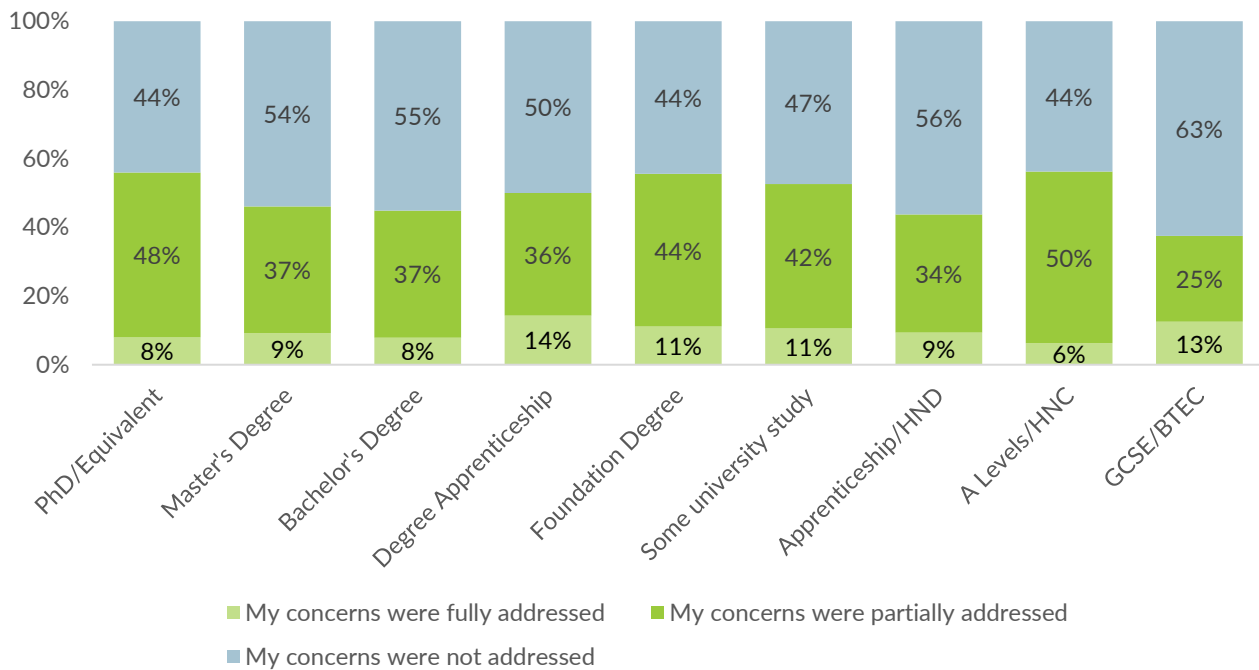


Figure 29. If you raised concerns about ill-fitting PPE, what was the outcome? By education

The majority of respondents were provided with PPE by their employer, regardless of their highest educational qualification. However, there was a difference ranging from 9%-17% between those with a higher education qualification (e.g., PhD, Master's & Bachelor's Degrees) compared to those with a lower qualification (e.g., GCSE, A-Levels Foundation Degree, Apprenticeships & Degree Apprenticeships). This suggests that women who hold a higher educational qualification are required to choose their PPE from a list provided by their employer or provide their own PPE more often than women who have a lower educational qualification. Furthermore, 12% (n=3) of respondents whose highest level of education is GCSE/BTEC had to provide their own PPE, compared to 2-8% of respondents with higher qualifications.

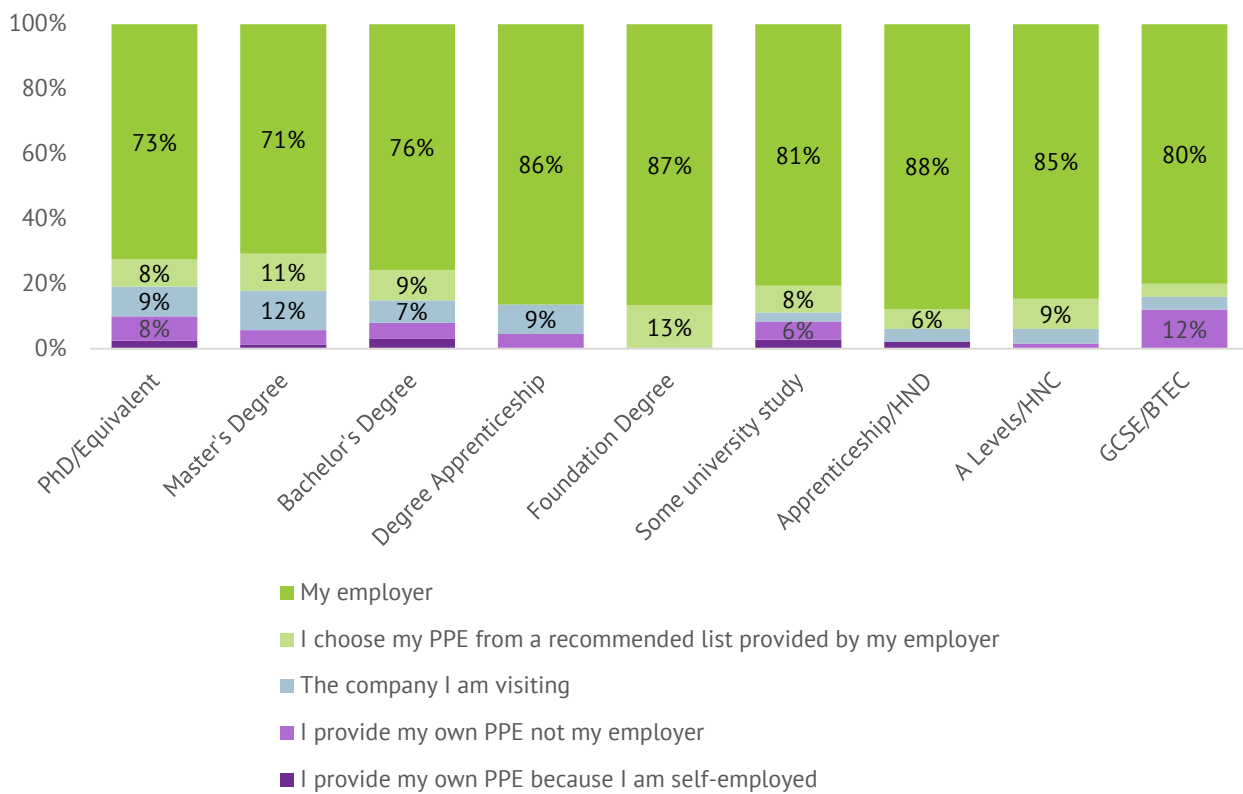


Figure 30. Who provides your PPE? By education

More than half of respondents who had an Apprenticeship/HND (55%, n=24) or a Foundation Degree (54%, n=7) as their highest qualification were required to wear their PPE every day, compared to only 9% (n=57) and 13% (n=15) of those holding a Master's Degree and PhD/equivalent respectively. Similarly, 19% of women with a PhD education qualification and 16% with a Bachelor's qualification were not required to wear PPE, compared to only 8% of those holding a GCSE/BTEC and Foundation Degree education. Lastly, just under half of respondents holding a Master's Degree (48%, n=288) or a GCSE/BTEC (44%, n=11) were required to wear PPE only when on-site visits.

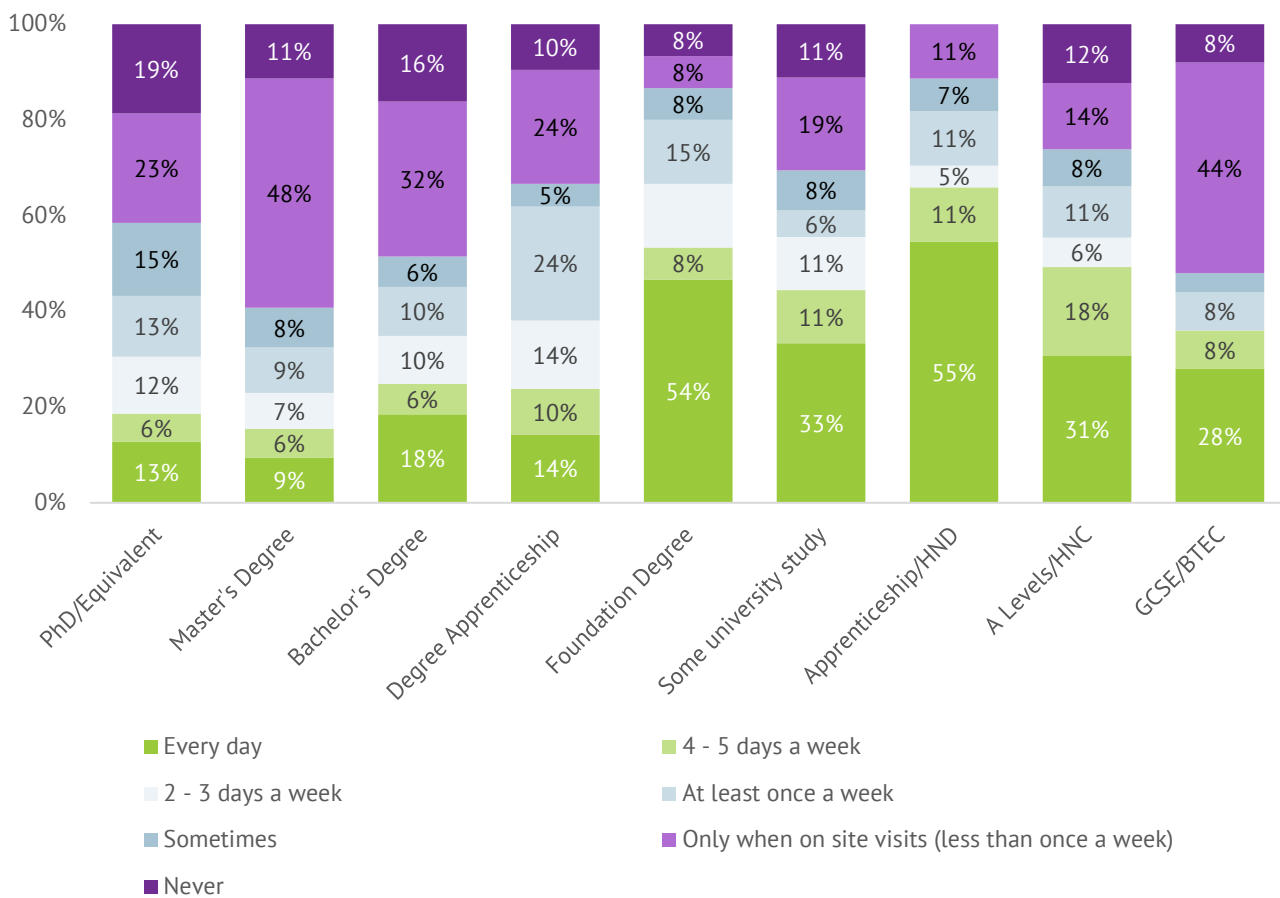


Figure 31. How often are you required to wear PPE to do your job? by education

Finally, compared to only 13% (n=14) of respondents with a PhD qualification, half of respondents who held an A Levels/HNC (49%, n=27), Foundation Degree (50%, n=7) and Apprenticeship/HND (55%, n=24) were required to wear PPE all day. 48% (n=11) of women with a GCSE as their highest qualification level were required to wear PPE for four hours or more compared to respondents with a Foundation Degree (7%, n=1), A Levels qualification (16%, n=9) and some university study (22%, n=7).

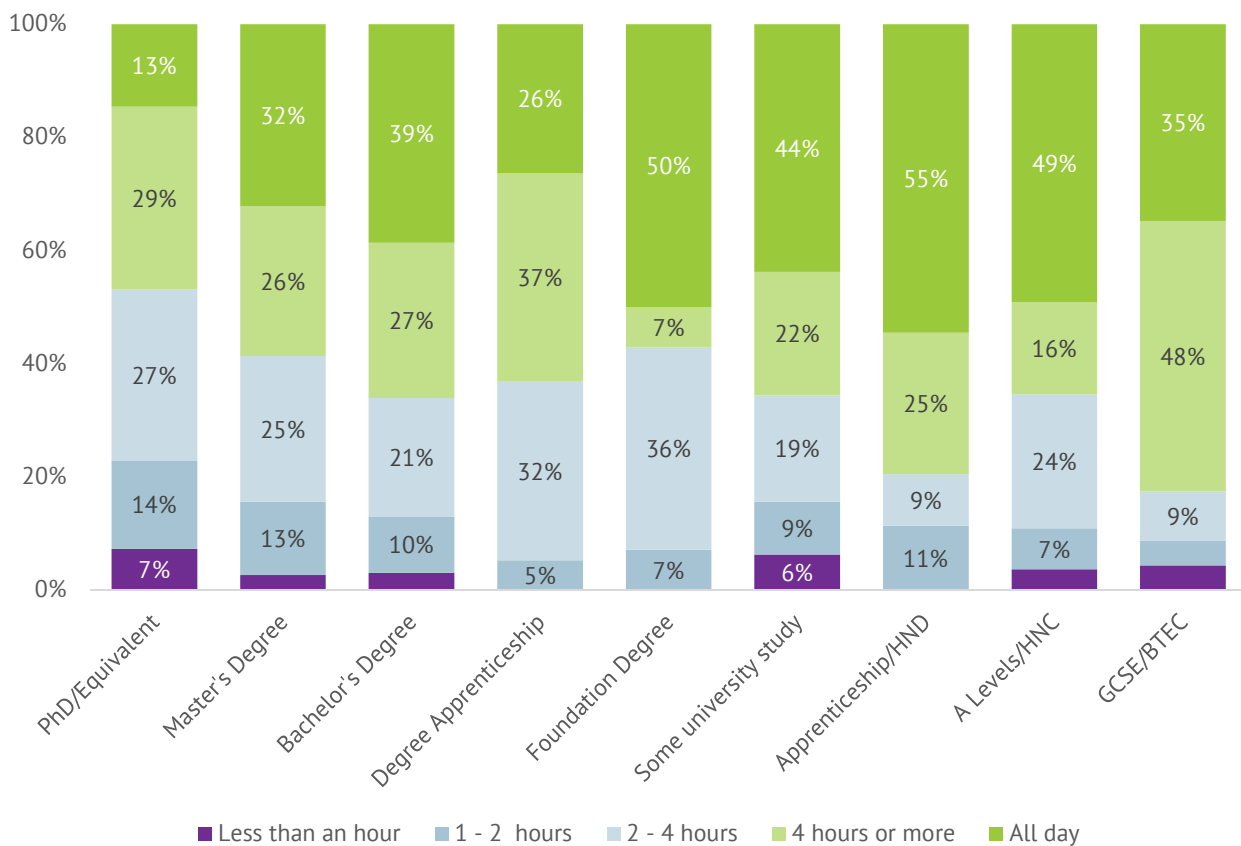


Figure 32. When you do wear PPE, how much time do you spend wearing it? by education

5.3 Age

In terms of age differences⁷, the chart below shows that the majority of respondents were required to wear PPE only when conducting site visits. More than a third (36%, n=54) of respondents aged 18-24 are required to wear PPE every day or 4-5 days a week compared to 20% of those aged 55-65 (n=15) and 65-74 (n=2). Conversely, almost half of respondents (47%, n=7) in the 65-74 age bracket were never required to wear PPE compared to only 4% (n=7) of those aged 18-24.

⁷ Important to note that the 65-74 age category only has 8 responses compared to the other age groups. As a result, the findings might not be representative of the whole population and in some instances, they cannot be accurately compared to the overall cohort. Careful interpretation of these results is needed.

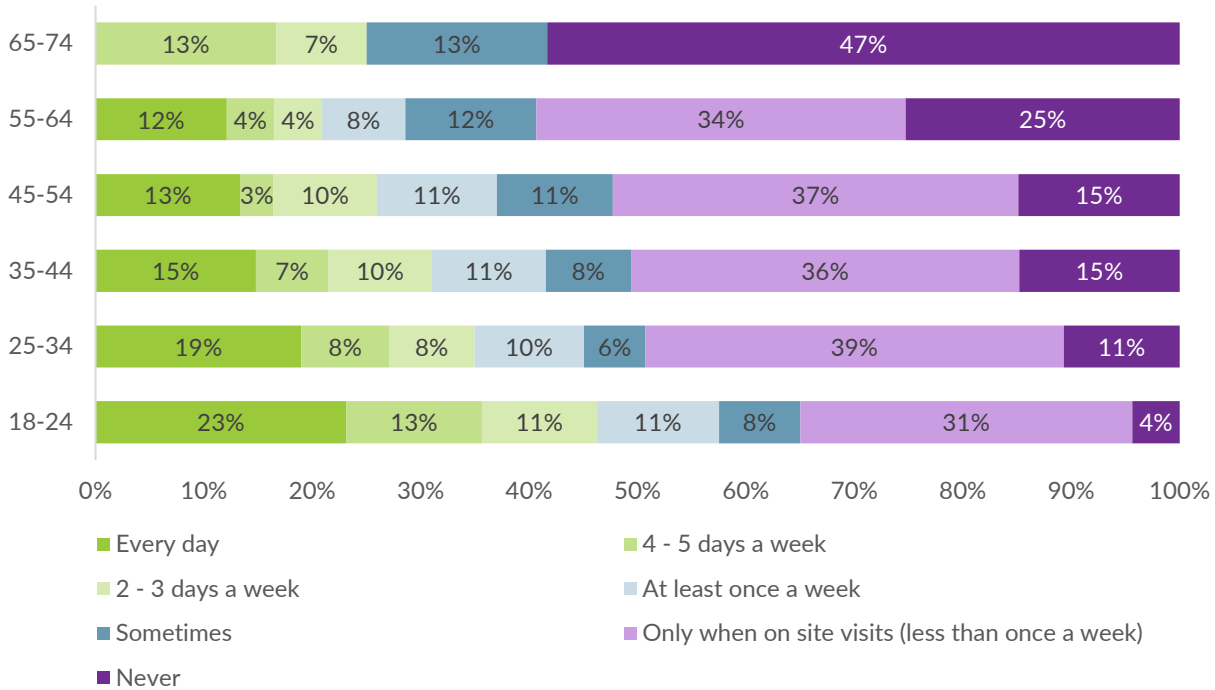


Figure 33. How often are you required to wear PPE to do your job? By age

Overall, more than a third of respondents wear their PPE all day, with 42% (n=64) of those in the 18-24 age group having to wear it all day. In contrast, most respondents in the 65-74 age group (57%, n=4) wear their PPE 4 hours or more compared to just over a quarter in the other groups.

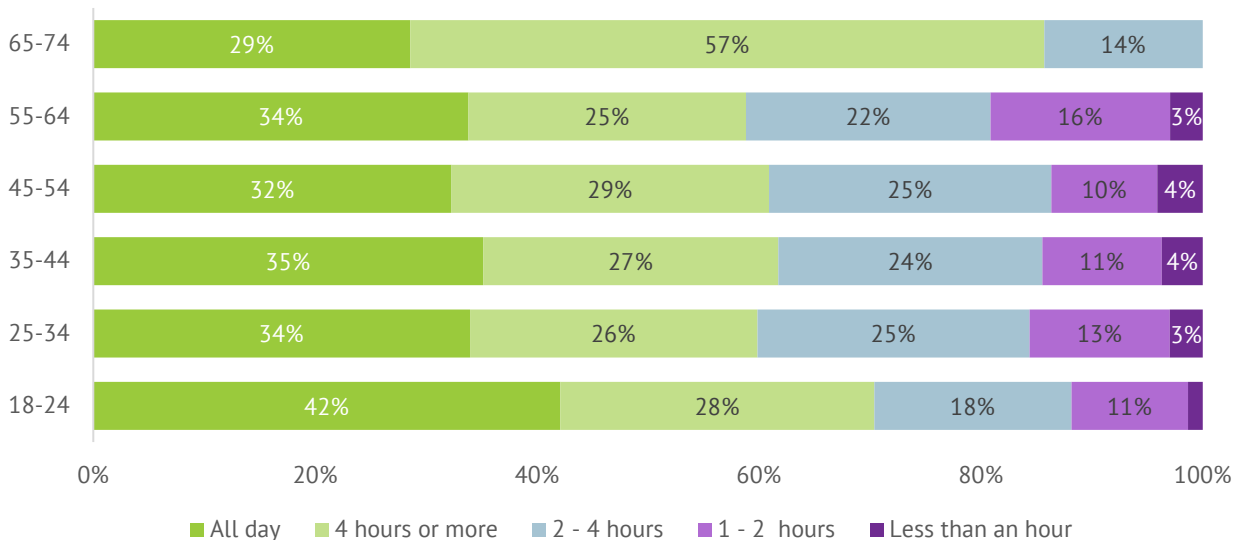


Figure 34. When you do wear PPE, how much time do you spend wearing it? By age

For the majority of respondents, PPE is provided by their employer regardless of age. Only 65% (n=5) of respondents aged 65-74 are provided with PPE by their employer, with a quarter receiving it from the company they are visiting (n=2), or they provide it themselves because they are self-employed (n=2).

However, these results cannot be accurately compared to the other age groups given the low number of responses.

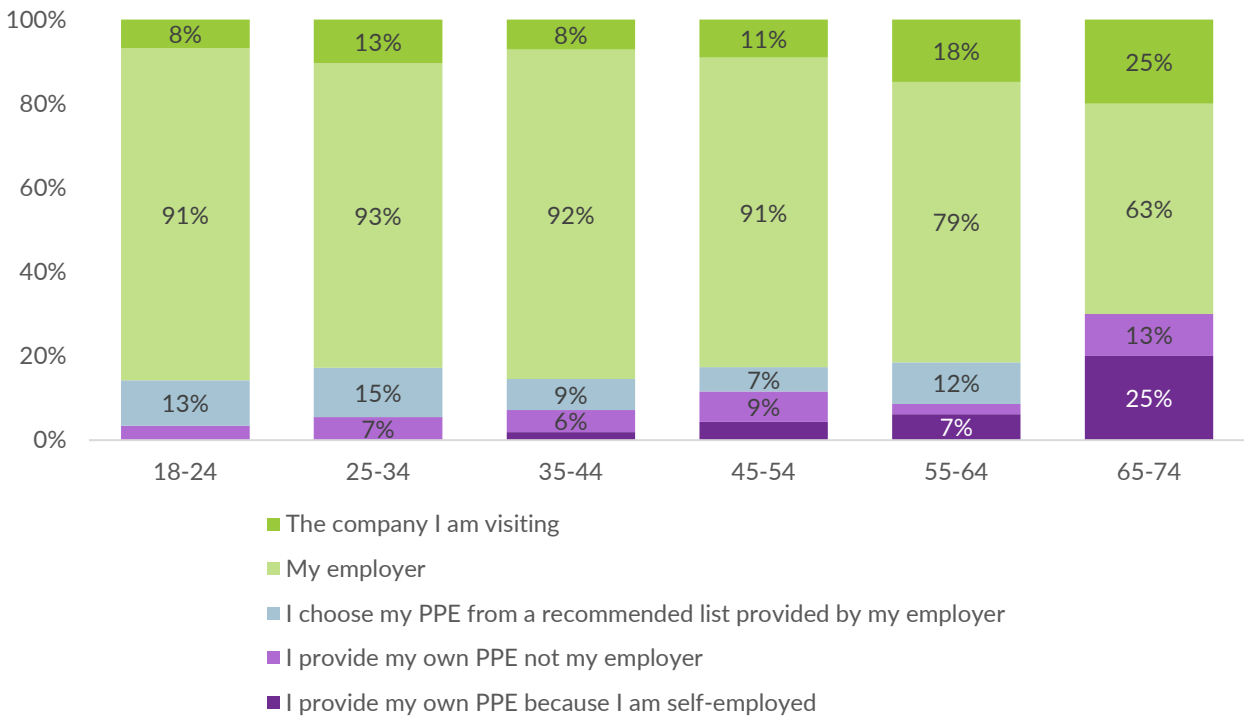


Figure 35. Who provides your PPE? By age

Similar findings are illustrated when looking at who pays for women’s PPE based on their age. For more than three quarters of respondents aged between 18-54, their employers pay directly for their PPE, followed by the company they are visiting. Looking at those aged 55-64 and 65-74, around two quarters of respondents have their PPE paid by their employer, and just under a quarter (22%, n=2) pay for their own PPE because they are self-employed.

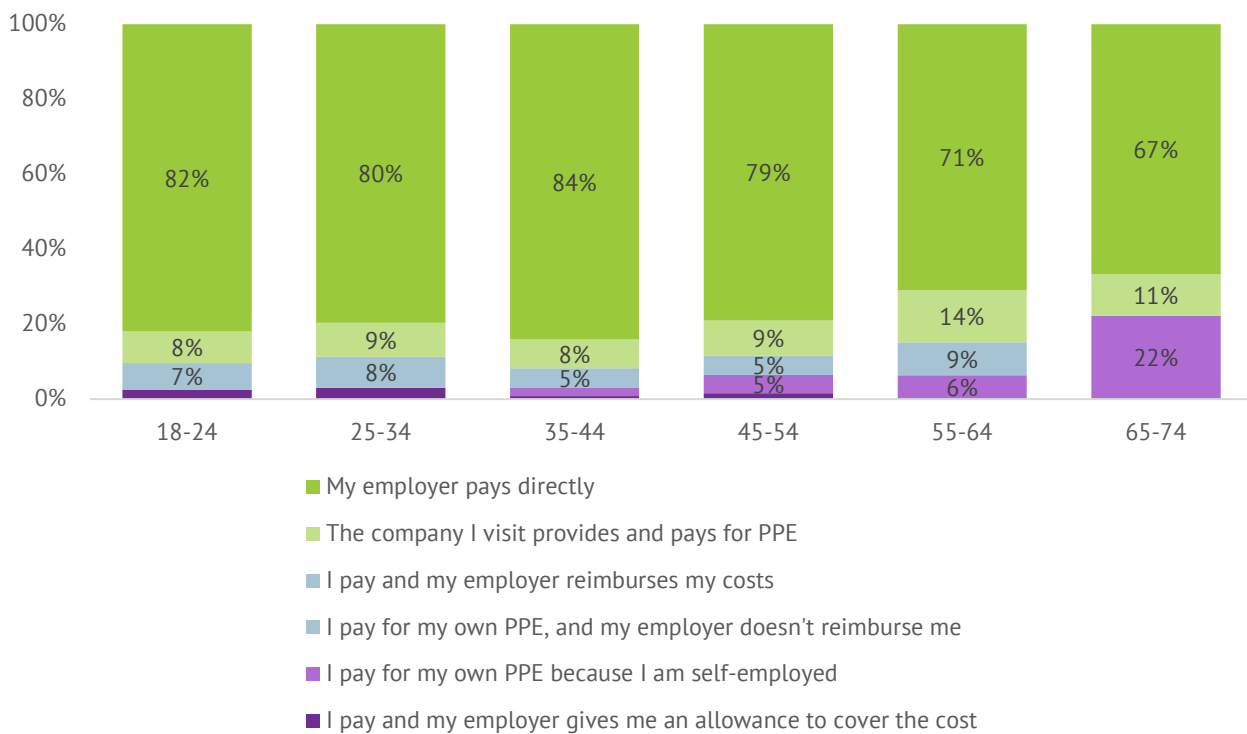


Figure 36. Who pays for your PPE? By age

For more than a third of respondents in the 25-35 (37%, n=163), 35-44 (36%, n=130), 45-54 (36%, n=81) and 55-64 (41%, n=28) age groups, even the PPE items they find most comfortable are moderately or very restrictive. Comparatively, just under a quarter (24%, n=37) of respondents aged 18-24 and 63% (n=5) of respondents aged 65-74 state that their best fitting PPE is restrictive. Lastly, around 50% of respondents aged 18-64 do not feel that their PPE restricts their ability to do their job effectively compared to only 13% of respondents in the 65-74 age category. More than a third of respondents in this age group (38%, n=3) feel that their job is restricted even when wearing their best fitting PPE.

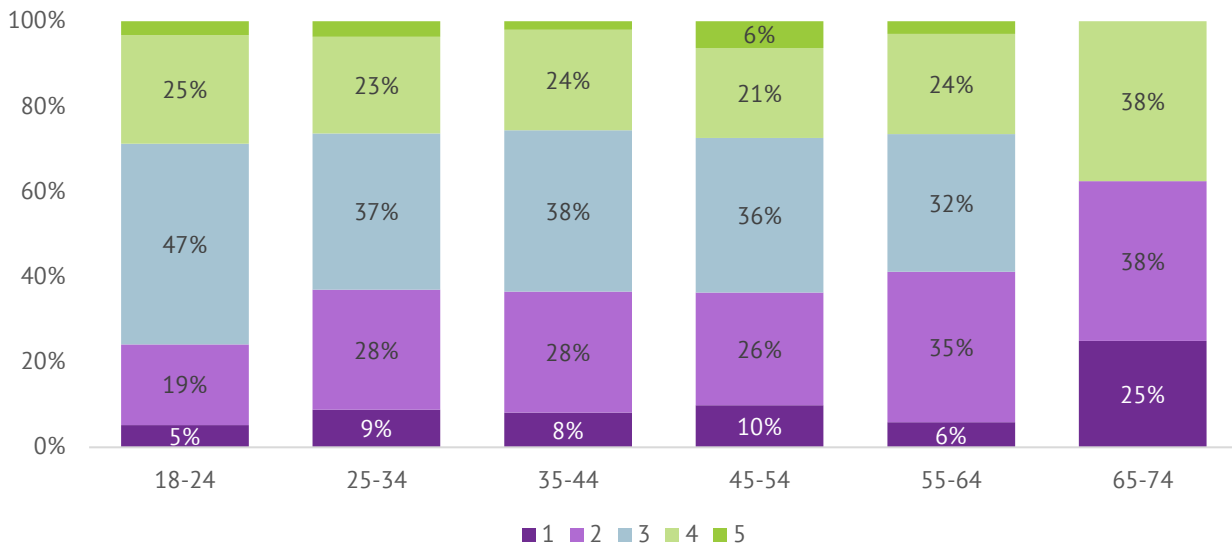


Figure 37. Thinking about the top three PPE items that fit you best, how comfortable is your PPE? Score 1-5 where 1 is very restricting and 5 is not at all, by age

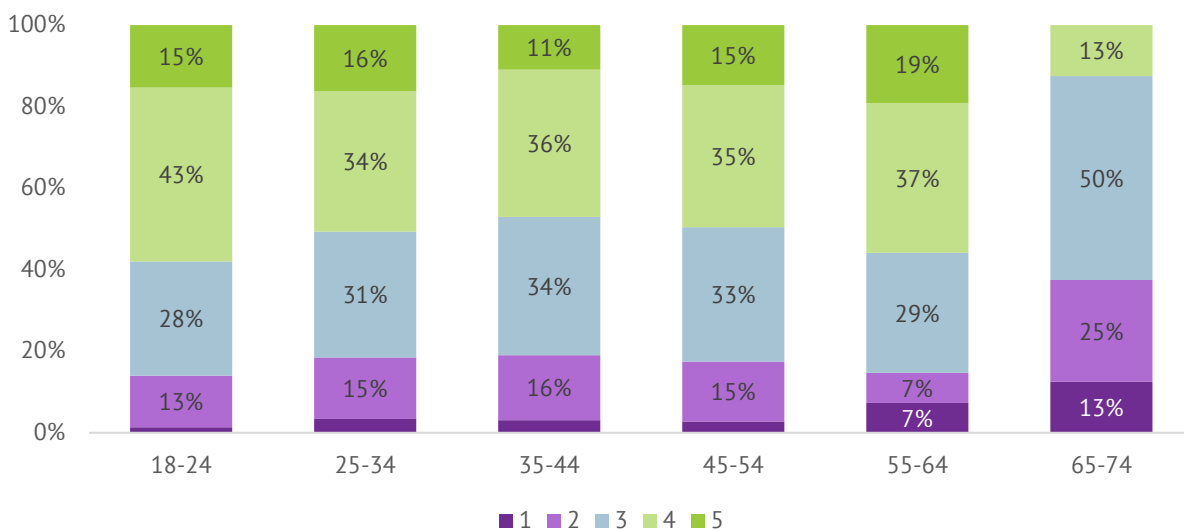


Figure 38. Thinking about the top three PPE items that fit you best, how much does your PPE restrict your ability to do your job effectively? Score 1-5 where 1 is very restricting and 5 is not at all. By age

5.4 Ethnicity

There are several differences between how often different ethnic groups are required to wear PPE. While 20% (n=8) and 25% (n=15) of Black or Mixed women respectively said they are required to wear PPE every day, only 12% (n=8) of Asian and 13% (n=28) of White women said the same. A quarter of White respondents are never required to wear PPE, compared to around 7-12% for all other ethnic groups.

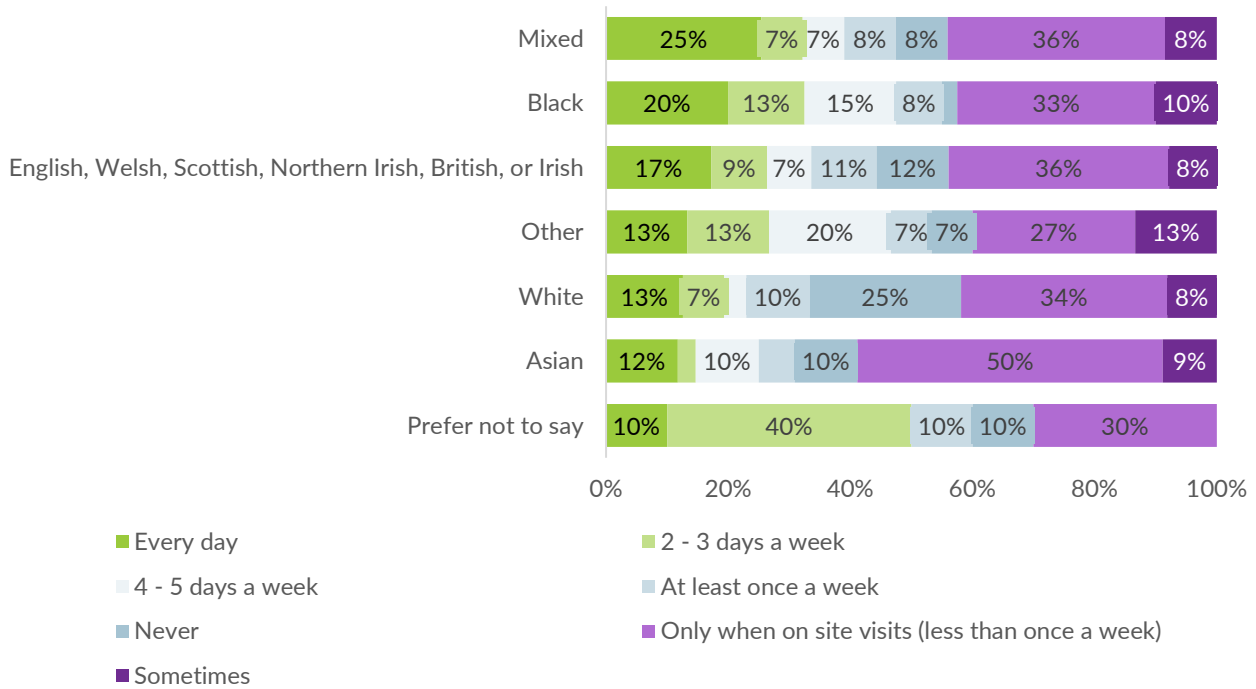


Figure 3939. How often are you required to wear PPE to do your job? By ethnicity

There are also differences in the length of time PPE is worn for. While only 23% (n=13) of Asian respondents wear PPE all day, 37% of Black (n=14) and Mixed (n=13) respondents said the same. Conversely 26% (n=15) of Asian respondents wear PPE for less than 2 hours, compared to just 11% (n=4) of Black respondents.

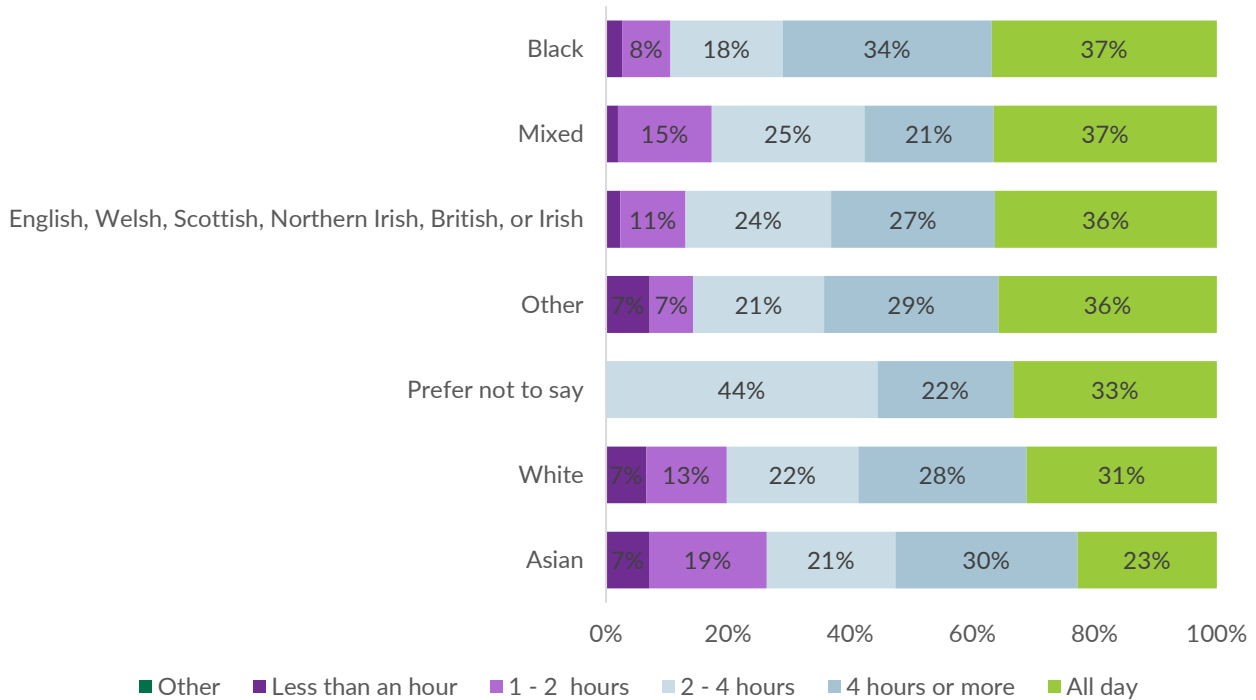


Figure 4040. When you do wear PPE, how much time do you spend wearing it? By ethnicity

Different ethnic groups also have different experiences while wearing PPE. For example, 39% (n=21) of Mixed respondents scored comfort of PPE as 1 or 2 (where 1 is very restrictive and 5 is not at all restrictive) compared to 23% (n=14) of Asian respondents. There are also differences in how these experiences affect wearers. While 66% (n=98) of White and 65% (n=37) of Asian respondents have never modified their PPE, only 41% (n=21) of Mixed respondents and 47% (n=18) of Black respondents said the same. Similarly, 29% of both White (n=21) and Asian (n=17) respondents said they have adjusted their daily behaviour due to PPE, compared to 41% (n=21) of Mixed respondents.

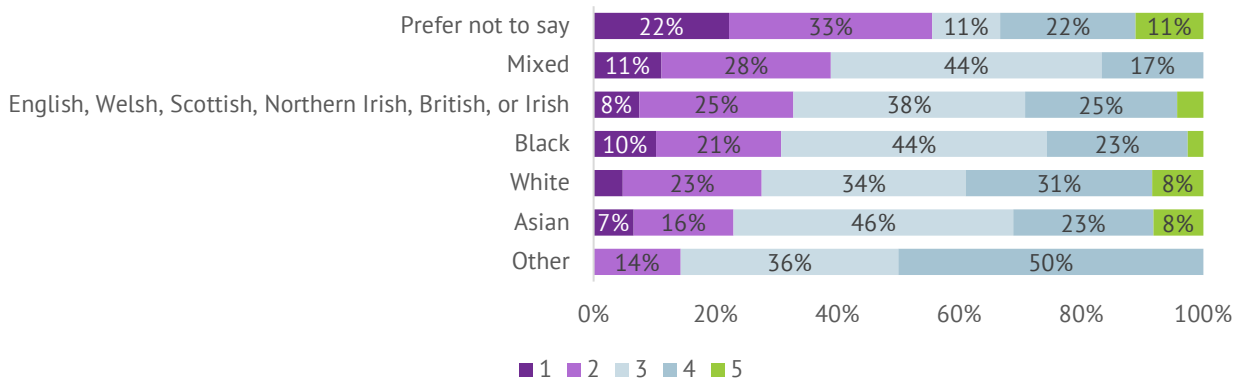


Figure 4141. Thinking about the top three PPE items that fit you best, how comfortable is your PPE? Score 1-5 where 1 is very restricting and 5 is not at all.

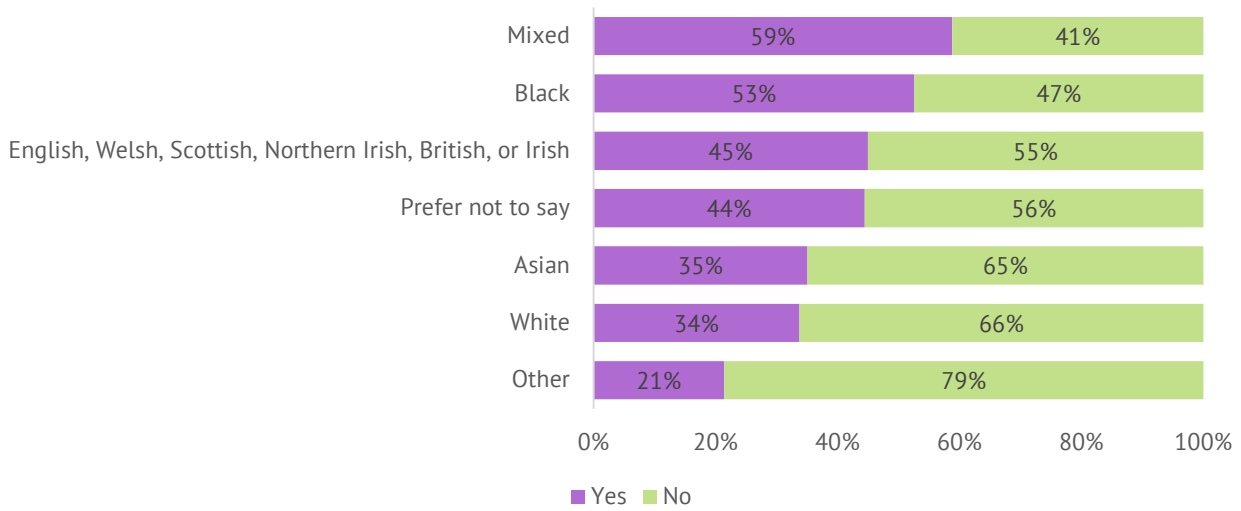


Figure 4242. Have you ever needed to modify your PPE?

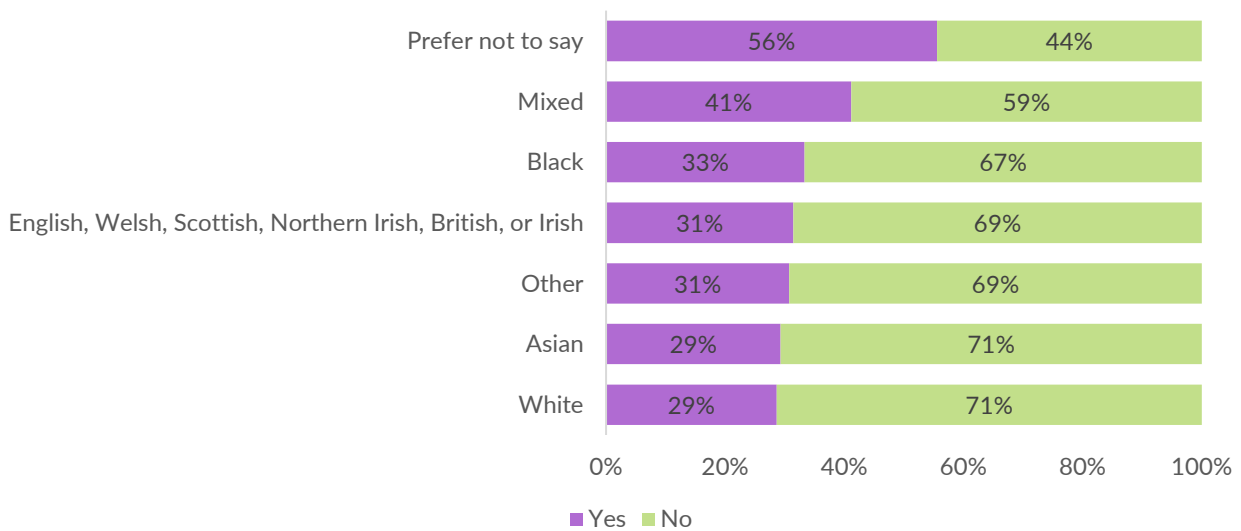


Figure 4343. Have you ever had to adjust your daily behaviour because of your PPE?

6. Conclusions and recommendations

6.1 Conclusions

The survey represents a substantial consultation of the female workforce in engineering. As presented within these findings whilst improvement is being seen in the availability of women specific PPE there is clearly a significant amount of progress still required to ensure that women engineers receive parity in relation to their health and wellbeing at work. Key findings include:

Lack of fit-for-purpose PPE

The analysis of survey findings paints a bleak picture for women who are required to wear PPE for work. With just 4% of women wearing PPE that fit perfectly the vast majority are wearing standard-sized equipment which comes with significant challenges and hazards. The main challenge that women encounter is that PPE is predominantly based on men's bodies and, therefore, does not account for differences in women's bodies such as height, chest-hip-waist ratio, feet, hand, and head sizes and more. It also does not consider different needs of women, for example, different requirements of PPE to access the bathroom.

Currently available women's PPE

PPE is not fit for purpose or accessible to women. The PPE is firstly, rare and if it is available, it is often more expensive and has longer delivery times compared to the male equivalent. The women's specific PPE sizing is highly inconsistent and there are often no size guides available. Women report having to size up compared to their high-street clothing sizes to find PPE that fits but that they need to guess which size they will need. In addition, the sizes available often stop at a size 18. This means a significant proportion of women, including those who wear sizes larger than 18, are excluded from accessing women's PPE.

Similarly, women's PPE does not consider different body types such as petite or tall women which leads to women's PPE not fitting for women who fall into these categories. Women, furthermore, criticise that women's specific PPE is frequently only available in pink or purple. Using these stereotypical colours, reinforces harmful stereotypes towards women, as well as makes women stand out in their workplace. Standing out further through these colours can lead to women receiving negative or mocking comments from colleagues and makes women feel less included in their workplace.

The survey indicates that this lack of availability is particularly acute for women working in the manufacturing, health, and applied science sectors. These sectors combined account for 36% of the female workforce⁸ and therefore potentially represents significant numbers of women who are unable to access adequate equipment.

⁸ Office for National Statistics. EMP13: Employment by Industry. Feb 2024. [Link](#) [last accessed 03.04.24]

The effects

Many women feel the PPE they have is restricting them from doing their job effectively by limiting or stifling movement and senses. In most cases, women reported through the qualitative findings that they continued their work despite the ill-fitting PPE and its restrictions. However, women explain that doing so exacerbates pain, physical or mental health challenges. PPE also does not account for different stages of women's lives, for example during pregnancy, which forces some women to change jobs.

The effect of ill-fitting PPE on dignity is also substantial. Women report feeling ridiculous or as though they are not being taken seriously in PPE that does not fit them properly. This is particularly a challenge for women in male dominated industries such as construction, manufacturing, or the energy sector. Ill-fitting PPE also exposes women to degrading comments from their colleagues and, through that, creates an additional layer of emotional burden to women.

The PPE women currently have access to is mostly not appropriate to accommodate women's needs. Most commonly, these include needs related to periods and menopause. These challenges are mostly linked to being able to put on and take off PPE easily to access the bathroom and having PPE made from material accounting for monthly bodily changes, as well as over the course of women's lives.

Fit for purpose PPE is meant to protect the women who wear it; however, ill-fitting PPE often exposes women to risk or harm ranging from trip hazards, risk of contamination through chemical or bio-hazardous materials, exposure to the elements to potential risks to their lives. When women raise these concerns, they can receive mixed responses from their line managers and colleagues procuring PPE. In a few cases women are seeing action or change due to their requests, however, in the majority of cases women do not receive a response or the issue is only partially resolved.

In some cases, women have to choose between being able to do their job or a specific task in ill-fitting PPE or to not do the job or task. Placing this choice on women or making women feel ridiculous for raising safety concerns about PPE is likely to limit the number of women who will work build careers in certain jobs or sectors. This excludes a significant proportion of the population as a talent pool for these sectors, as well as exacerbates issues of gender equality, especially regarding the gender pay gap and women's representation in STEM careers.

Economic considerations

Nearly half of women report that they have made or are making adjustments to the PPE that they use. The modifications ranged from DIY-adjustments with materials present at their work site to getting their PPE professionally tailored or tailoring the material themselves. Existing PPE that employers provide or that is accessible through catalogues employers provide, does not meet the requirements for women's sizes and fit which results in women purchasing their own equipment. Some respondents pay for their PPE upfront and are reimbursed by their employers and 5% of women purchase their own PPE. Those

that received an allowance reported at times that the allowance was not sufficient to cover the cost of the PPE they needed.

The cost of adjustments and buying their own PPE, even if fully or partially reimbursed, creates an economic barrier to women working safely within these industries. Having to pay for PPE and its alteration is likely a particular barrier for women in lower paying roles or early in their careers, who may not have the economic means to provide this. This increases the likelihood of women wearing ill-fitting PPE and being exposed to harm or leaving these jobs.

Creating accessible, inclusive work environments

Women centred design and production is required. This includes different access needs based on health condition and disabilities, as well as cultural and religious or ethnic needs. The survey reports women from various backgrounds have different experiences with PPE. This includes PPE not being compatible with medical equipment, the weight or material of PPE exacerbating health conditions, creating sensory overstimulation, or not being accommodating to cultural or religious hairstyles or headwear. These issues are not exclusive to women but will need to be taken into account when creating more accessible PPE. Not offering accessible PPE further places the burden of asking for modifications or alterations on minoritised groups and creates additional barriers to access to workplaces. Inaccessible PPE can affect the level of diversity within PPE required sectors and widen the disability employment gap.

Overall, the currently available PPE is not fit-for-purpose to protect women from harms in the workplace and the burden to create change and make workplaces more accessible is placed on women. This includes explaining why certain types of PPE are a challenge to women. There is a need to work with employers to raise awareness around the necessity of women specific PPE to alleviate the work individuals have to do to receive adequate PPE.

6.2 Recommendations

With the above in mind, we recommend five key actions to ensure women have access to appropriate and fit-for-purpose PPE:

1. **Conduct** a nation-wide survey of women's measurements to ascertain how suitable PPE can be produced for women of different sizes, backgrounds, religion, dis/ability and need. This survey exercise should include both women currently working in PPE-required sectors and those who do not. Prioritising design for women working in the manufacturing, health and applied sciences fields is likely to result in the greatest effect.
2. **Convene** a steering group of women from diverse backgrounds who currently work in the sector to oversee every step of this process, from designing and conducting the measurement exercise to collaborating with producers and suppliers.
3. **Coordinate** with PPE producers and suppliers and encourage them to account for the findings of the measurement exercise and include new, suitable PPE in their stocklists.

4. **Engage** with employers to highlight the importance of fit for purpose PPE and specific requirements women might have to alleviate the pressure and responsibility on individual women to create change within their workspace.
5. **Lobby** for access to fit for purpose PPE as a right within policy and legislation to facilitate better and easier access for women to fit for purpose PPE and relieve the financial burden to make alterations or purchase their own.

Appendix 1: Survey Questionnaire

PPE Clothing Survey: Is your PPE fit for purpose?

23 Feb 2024

A survey of male and female engineers who wear PPE to assess its suitability and fit. You do not have to complete the survey and can ask for your data to be removed by emailing ceo@wes.org.uk. Identifying data will not be associated with responses and is stored separately.

About You

Demographic information

1. We would like to measure thousands of men and women with a photo app, to provide accurate PPE sizing data to the industry. You do not need to wear PPE as part of your job to be involved. If you would like more information on the measurement phase when it opens, please provide your name and email address here.

First name and Family name (e.g. Jane Smith)

2. Email address

3. Sex - This survey relates to clothes that fit your body. Men and women's bodies differ significantly from each other, so it is important to respond according to your biological sex.

- Female
- Male
- Prefer not to say

4. Age

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65-74
- Over 75
- Prefer not to say

5. Ethnicity

- Asian or Asian British
 - Indian
 - Pakistani
 - Bangladeshi
 - Chinese
 - Any other Asian Background
- Black or Black British
 - Caribbean
 - African
 - Any other Black, Black British, or Caribbean background
- Mixed or multiple ethnic background
 - White and Black Caribbean
 - White and Black African
 - White and Asian
 - Any other Mixed or multiple ethnic background
- White
 - English, Welsh, Scottish, Northern Irish or British
 - Irish
 - Gypsy or Irish Traveller
 - Roma
 - Any other White background
- Arab
- Any other ethnic group
- Prefer not to say

6. What is the highest level of education you have attained?

- GCSE/BTEC
- A Levels/HNC
- Apprenticeship/HND
- Degree Apprenticeship
- Some university study
- Foundation Degree
- Bachelor's Degree
- Master's Degree
- PhD/Equivalent

7. Which sector do you work in?
- Aerospace
 - Applied Sciences
 - Automotive
 - Biology
 - Chemical
 - Construction
 - Civil
 - Education
 - Electrical and Electronic
 - Energy (including electricity, gas, renewables)
 - Hardware
 - IT
 - Manufacturing (food, products, chemicals)
 - Mechanical
 - Structural
 - Which sector do you work in?
 - Structural
 - Telecoms
 - Transportation
 - Water supply (including sewage and waste management)
 - Other

Categorising your PPE

What & how often do you wear PPE and who supplies and pays for it.

8. How often are you required to wear PPE to do your job?
- Every day
 - 4 - 5 days a week
 - 2 - 3 days a week
 - At least once a week
 - Only when on-site visits (less than once a week)
 - Sometimes
 - Never

9. When you do wear PPE, how much time do you spend wearing it?

Please select the option you use most often.

- All day
- 4 hours or more
- 2 - 4 hours
- 1 - 2 hours
- Less than an hour
- Other

10. In general, who provides your PPE?

Please tick all that apply.

- My employer
- The company I am visiting
- I choose my PPE from a recommended list provided by my employer
- I provide my own PPE because I am self-employed
- I provide my own PPE not my employer
- Not Applicable
- Other

11. In general, who pays for your PPE?

Please tick all that apply.

- My employer pays directly
- The company I visit provides and pays for PPE
- I pay and my employer gives me an allowance to cover the cost
- I pay and my employer reimburses my costs
- I pay for my own PPE, and my employer doesn't reimburse me (please provide details in the Other section)
- I pay for my own PPE because I am self-employed
- Other

12. What type of PPE do you wear for work?

- Anorak/Storm Coat (Heavy duty)
- Apron
- Bib and Brace
- Body armour
- Bodywarmer
- Boots
- Coveralls
- Ear protectors
- Eye protectors
- Full face mask
- Gauntlets
- Gloves
- Gown
- Hair covering
- Hard hat
- Helmet
- Jacket
- Lab coat
- Mask – full face
- Mask – nose and mouth
- Polo Shirt
- Protective leggings
- Safety glasses
- Shoe coverings
- Shoes
- Snood
- Sweatshirt
- T-Shirt
- Trousers
- Trousers (hi-visibility)
- Vest (hi-visibility)
- Visor
- Waistcoat

Experiences of wearing PPE

Please answer according to the top three PPE items that fit the best. If you want to add specific information for the rating questions, please note the question number and give more details in the box provided. There is also a box for overall comments about PPE at the end.

13. Thinking about the top three PPE items that fit you best, which sizes are available?

- One size fits all (gender-neutral)
- Standard sizes for men (very small to extra large)
- Standard sizes for women (very small to extra large)
- Provided based on own measurements
- Other (please state)
- Not Applicable

14. Thinking about the top three PPE items that fit you best, how well does your PPE fit you?

Score 1-5 where 1 is doesn't fit well at all and 5 is fits perfectly.

1	2	3	4	5
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15. Thinking about the top three PPE items that fit you best, if your PPE is not a perfect fit, please give details of the PPE affected and how it doesn't fit below.

16. Thinking about the top three PPE items that fit you best, how much does your PPE restrict your ability to do your job effectively?

Score 1-5 where 1 is very restricting and 5 is not at all.

1	2	3	4	5
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17. Thinking about the top three PPE items that fit you best, how much does your PPE restrict your movement?

Score 1-5 where 1 is very restricting and 5 is not at all

1	2	3	4	5
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18. Thinking about PPE items for your chest/face/head, how much does your PPE restrict your breathing?

Score 1-5 where 1 is very restricting and 5 is not at all

1	2	3	4	5
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19. Thinking about PPE items for your chest/face/head, how much does your PPE restrict your ability to communicate at work?

Score 1-5 where 1 is very restricting and 5 is not at all

1	2	3	4	5
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20. Thinking about PPE items for your hands, how much does your PPE restrict your sense of touch at work?

Score 1-5 where 1 is very restricting and 5 is not at all

1	2	3	4	5
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21. Thinking about PPE items for your face or head, how much does your PPE restrict your vision at work?

Score 1-5 where 1 is very restricting and 5 is not at all

1	2	3	4	5
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22. Thinking about PPE items for your face or head, how much does your PPE restrict your hearing at work?

Score 1-5 where 1 is very restricting and 5 is not at all

1	2	3	4	5
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23. Thinking about PPE items for your face or head, how much does your PPE restrict your sense of smell at work?

Score 1-5 where 1 is very restricting and 5 is not at all

1	2	3	4	5
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24. Thinking about PPE items for your face or head, how much does your PPE restrict your sense of taste at work?

Score 1-5 where 1 is very restricting and 5 is not at all

1	2	3	4	5
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25. Thinking about the top three PPE items that fit you best, how comfortable is your PPE?

Score 1-5 where 1 is very restricting and 5 is not at all

1	2	3	4	5
---	---	---	---	---

26. If your PPE is not very comfortable, please give details below

27. Have you ever needed maternity PPE?

- Yes
- No
- Other

28. If you needed maternity PPE did your company provide it?

- Yes
- No, I had to provide my own PPE
- No, I was not provided with maternity PPE
- Other

29. Thinking about maternity PPE, how comfortable was your PPE?

Score 1-5 where 1 is very uncomfortable and 5 is very comfortable

1	2	3	4	5
---	---	---	---	---

30. If you needed maternity PPE, did your PPE affect your ability to continue in your role until your agreed date for maternity leave?
- Yes, until I went on maternity leave
 - Yes for a time, but I had to change roles in the company before I went on maternity leave
 - Yes for a time, but I had to leave the company before I went on maternity leave
 - No, I had to change roles immediately
 - No, I had to leave the company immediately
 - My PPE did not affect my ability to continue in my role
 - Other
31. Do you need PPE to cover more of your body for religious, cultural, or personal reasons?
- Yes
 - No
 - Other
32. If you need PPE to cover more of your body, who provides your PPE?
Tick all that apply.
- My employer
 - The company I am visiting
 - I choose my PPE from a recommended list provided by my employer
 - I provide my own PPE because I am self-employed
 - I provide my own PPE not my employer
 - I do not have PPE that covers more of my body
 - Other
33. Have you ever needed your PPE to take into account any of the following?
Tick all that apply. Feel free to give details in the Other option.
- Periods
 - Incontinence
 - Menopause
 - Other physical or medical needs, please explain in "Other"
 - None of the above
 - Other

34. Have you ever needed to modify your PPE?

- Yes
- No
- Other

35. If you have ever had to modify your PPE for any reason, please give details below
Please give as much detail as possible

36. Have you ever had adjust your daily behaviour because of your PPE?

For example, having to carry an additional bag due to small pockets

- Yes
- No
- Other

37. If you have ever had to adjust your daily behaviour because of your PPE for any reason, please give details below

38. Have you ever raised concerns about ill-fitting PPE?

Please use the Other box if the correct option is not listed. The next question deals with the outcome of raising concerns

- Yes, to my employer
- Yes, to the PPE supplier
- Yes, to my line manager
- Yes, to my trade union
- Yes, with my colleagues
- No
- Other

39. If you raised concerns about ill-fitting PPE, what was the outcome?

Use the Other box to give more detail

- My concerns were fully addressed
- My concerns were partially addressed
- My concerns were not addressed
- Other

40. Please provide more detail for any of the questions above. It would be helpful if you refer to the question numbers in your response.

For example: Q10. My company doesn't provide PPE, but I often go to client sites where I am given what's available; Q17. PPE stopped me getting into a small space;

41. Please use this space to make any other comments about your PPE.

Appendix 2: Respondent information

Age

34% (n=495) of respondents were aged between 25-34, followed by those in the 35-44 (n=419) and 45-54 (n=262) age categories.

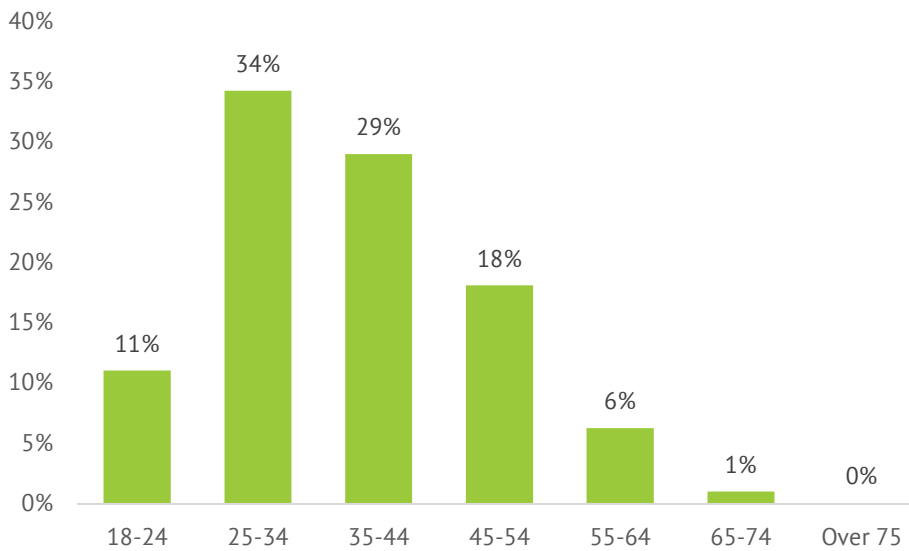


Figure. Age distribution, n=1444

Ethnicity

71% (n=1027) of survey respondents stated their ethnicity as English, Welsh, Scottish, Northern Irish, British or Irish, 15% (n=222) as White, and 13% (n=182) as other ethnicities. Given that only the first choice relates to nationality whilst the others relate to respondents' ethnicity, it is impossible to determine the racial makeup or the majority of respondents. As a result, the following findings should be interpreted with caution.

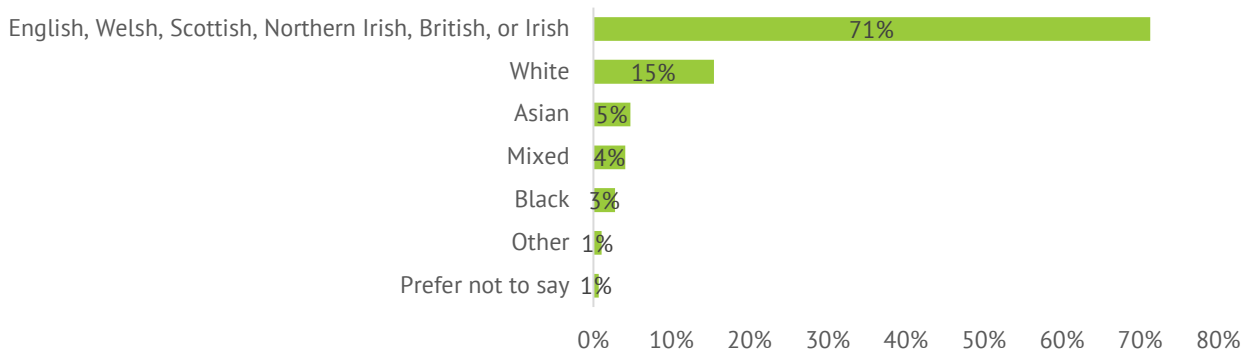


Figure 44. Ethnicity distribution, n=1441

Sector

Women completed the survey working in diverse employment sectors and professions, with the majority working in Applied Sciences (n=277, Structural and Construction (n=188), Transportation and Logistics (n=166) and the Civil (n=164) sectors.

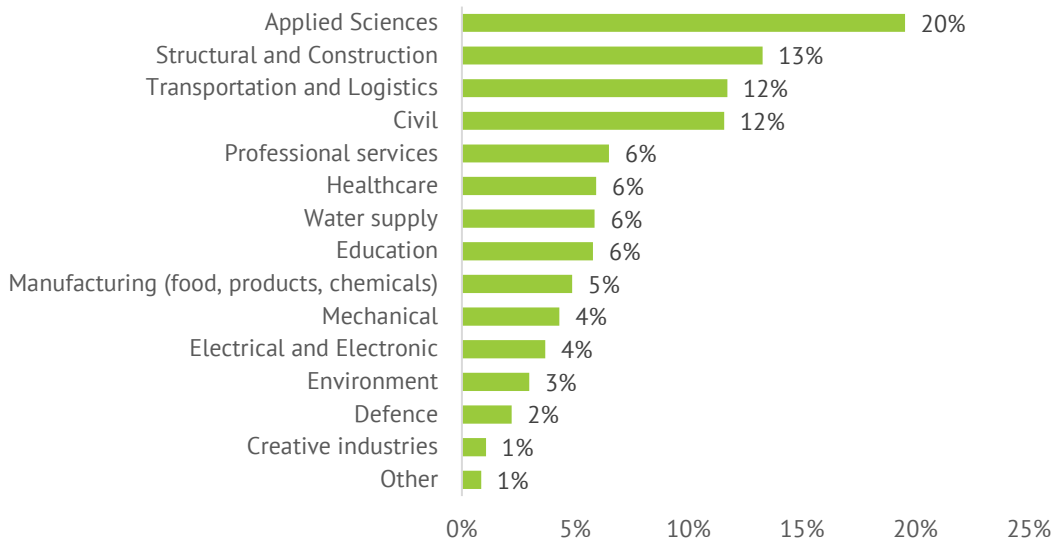


Figure 45. Distribution of professions, n=1418

Highest level of education

Overall, 86% (n=1238) of women who completed the survey held one form of higher education such as a Master’s Degree (42%, n=601), a Bachelor’s Degree (36%, n=519) or a PhD or equivalent (8%, n=118). Other types of education include A Levels/HNC (5%, n=65), Apprenticeships/HND (3%, n=44), some university study and GCSE/BTEC (2%, n=25).

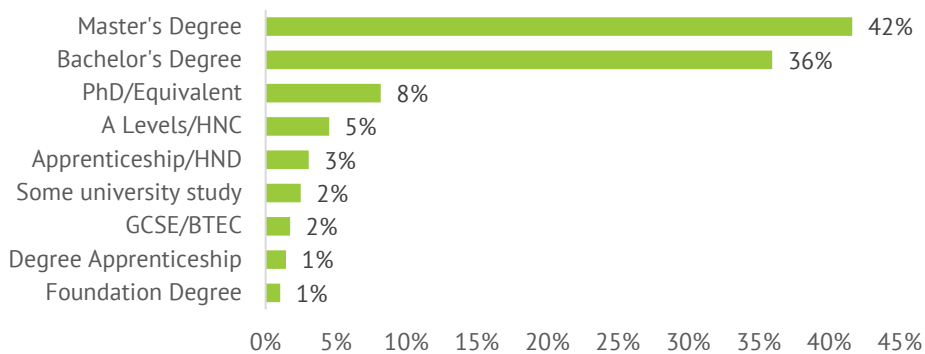


Figure 46. What is the highest level of education you have attained? n=1444



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