



Gender-Responsive Standards

- **Female firefighters face a higher risk of injury and fatality in structural and wildland firefighting.** Firefighting turnout suits are primarily developed for male firefighters and present design, comfort, and mobility issues when worn by female firefighters.¹
- **Female healthcare professionals are less likely to feel safe performing their jobs because of poor fitting personal protective equipment.** Male measurements have historically influenced the design of PPE. As a result, female healthcare professionals are nearly four times as likely as their male counterparts to experience poor-fitting surgical gowns, and twice as likely to experience poor-fitting masks.²
- **Female drivers and passengers are 73% more likely to be injured in car accidents.** Crash test dummies have historically been based on male anthropometric measurements, leaving female drivers at a greater risk for injury in frontal car crashes, even if they are wearing seatbelts.³

Developing Gender-Responsive Standards

Gender-responsive standards are developed with consideration of the physical and physiological differences between genders – including grip strength, physical dimensions, skinfold thickness, and body fat percentage – and they feature technical requirements that address these differences.

While gender is not relevant to all standards, it should be considered if the standard focuses on a product, component, or system that is used by people.



When gender is considered in standards development, more people are protected.



Technical Committees Taking Action

Technical committees can determine if gender differences are relevant and adequately addressed in a standard by implementing the following practices:

Assessing Data Representation

- Re-evaluate reference models or values intended to represent the human body if they are based solely on male measurements.
- If the standard incorporates anthropometric measurements, develop technical requirements based on sex-disaggregated data when available.
- Report gender demographics for datasets used in the standard.
- Include citations for all sources of data used in the standard.

Evaluating Test Subject Requirements

- Consider if the testing requirements would allow for a product to pass even if all female test subjects failed or the results were waived.



Gender-Responsive Standards Spotlight

ANSI/CAN/UL 3741: Standard for Safety for Photovoltaic Hazard Control addresses safety principles and processes for evaluating rapid shutdown photovoltaic arrays that can help protect firefighters from shock hazards on homes and buildings with solar panels.

UL 3741 uses direct current body resistance data modified for female firefighters, which are roughly two thirds the limits for male firefighters, to help protect both. Physical characteristics such as body weight and skin sensitivity could have a direct effect on certain threshold limits for electricity, and female firefighters tend to have lower threshold limits than most male firefighters.

¹ McQuerry et al. (2023). "Female firefighters' increased risk of occupational exposure due to ill-fitting personal protective clothing." *Frontiers in Materials*. Vol. 10. <https://www.frontiersin.org/journals/materials/articles/10.3389/fmats.2023.1175559/full>

² Janson et al. (2022). "PPE fit of healthcare workers during the COVID-19 pandemic." *Applied Ergonomics*. Vol. 99. <https://www.sciencedirect.com/science/article/pii/S000368702100257X>

³ Forman et al. (2019). "Automobile injury trends in the contemporary fleet: Belted occupants in frontal collisions." *Traffic Injury Prevention*. Vol. 20. <https://doi.org/10.1080/15389588.2019.1630825>