

NFPA 1977-2016 Edition

Standard on Protective Clothing and Equipment for Wildland Fire Fighting

TIA Log No.: 1422

Reference: Table 6.1.14.3(a), 6.1.14.3, Table 6.1.14.3(d)(new), Figure 6.1.14.7(c), 6.1.14.4, 6.1.14.5, and Figure 6.1.14.7(c)

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1. Revise title of Table 6.1.14.3(a) to read as follows:

Table 6.1.14.3(a) Minimum Sizing Requirements for Men's Protective Upper Torso Garments (in.)

...

2. Revise cross references to 6.1.14.3 to read as follows:

6.1.14.3 Manufacturers shall produce garments in accordance with the minimum sizing requirements indicated in Table 6.1.14.3(a), Table 6.1.14.3(b), Table 6.1.14.3(c), Table 6.1.14.3(d), and Table 6.1.14.3(~~de~~).

3. Add a new Table 6.1.14.3(d) and renumber subsequent table to read as follows:

Table 6.1.14.3(d) Minimum Sizing Requirements for Women's Protective Upper Torso Garments (in.)

<u>Dimension Measured*</u>	<u>Garment Size</u>					<u>Amount of Change†</u>
	<u>XS</u>	<u>S</u>	<u>M</u>	<u>L</u>	<u>XL</u>	
<u>Regular</u>						
<u>Chest (A)</u>	<u>18-20</u>	<u>19-21</u>	<u>20.25-22.25</u>	<u>21.75-23.75</u>	<u>23.25-25.25</u>	<u>1-2.5</u>
<u>Sleeve (B)</u>	<u>22.75-24.75</u>	<u>23.5-25.5</u>	<u>24-25-26.25</u>	<u>25-27</u>	<u>25.75-27.75</u>	<u>.75-2.5</u>
<u>Waist (C)</u>	<u>17-19</u>	<u>18-20</u>	<u>19.25-21.25</u>	<u>20.75-22.75</u>	<u>22.25-24.25</u>	<u>1-2.5</u>
<u>Length (D)</u>	<u>26.5-28.5</u>	<u>27-29</u>	<u>27.5-29.5</u>	<u>28.5-30.5</u>	<u>29.5-31.5</u>	<u>.5-1</u>
<u>Petite</u>						
<u>Chest (A)</u>	<u>17-19</u>	<u>18-20</u>	<u>19.25-21.25</u>	<u>20.75-22.75</u>	<u>22.25-24.25</u>	<u>1-2.5</u>
<u>Sleeve (B)</u>	<u>21.75-23.75</u>	<u>22.5-24.5</u>	<u>23.25-25.25</u>	<u>24-26</u>	<u>24.75-26.75</u>	<u>.75-2.5</u>
<u>Waist (C)</u>	<u>16-18</u>	<u>17-19</u>	<u>18.25-20.25</u>	<u>19.75-21.75</u>	<u>21.25-23.25</u>	<u>1-2.5</u>
<u>Length (D)</u>	<u>25.5-27.5</u>	<u>26-28</u>	<u>26.5-28.5</u>	<u>27.5-29.5</u>	<u>28.5-30.5</u>	<u>.5-1</u>
<u>Tall</u>						
<u>Chest (A)</u>	<u>19-21</u>	<u>20-22</u>	<u>21.25-23.25</u>	<u>22.75-24.75</u>	<u>24.25-26.5</u>	<u>1-2.5</u>
<u>Sleeve (B)</u>	<u>23.75-25.75</u>	<u>24.5-26.5</u>	<u>25.25-27.25</u>	<u>26-28</u>	<u>26.75-29</u>	<u>.75-3</u>
<u>Waist (C)</u>	<u>18-20</u>	<u>19-21</u>	<u>20.25-22.25</u>	<u>21.75-23.75</u>	<u>23.25-25.5</u>	<u>1-2.5</u>
<u>Length (D)</u>	<u>27.5-29.5</u>	<u>28-30</u>	<u>28.5-30.5</u>	<u>29.5-31.5</u>	<u>30.5-33</u>	<u>.5-1.5</u>

*Letters in parentheses refer to Figure 6.1.14.7(c).

Note 1: To convert measurements to millimeters, multiply by 25.4.

Note 2: Suggested Women's shirt size chart: FLAT measurements in INCHES (shirt measurements NOT body measurements)

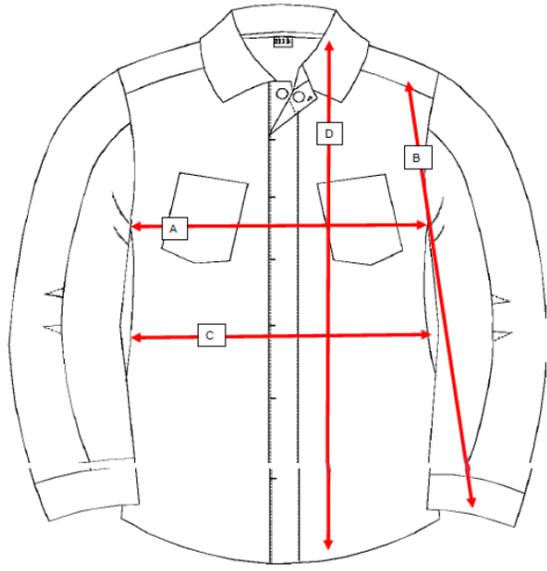
Note 3: Each company will determine grade rules to determine the respective brand's ideal fit.

†The amount of change between two consecutive garment sizes for the dimension measured.

Table 6.1.14.3(~~de~~) Minimum Sizing Requirements for Protective One-Piece Garments (in.)

...

4. Add a new Figure 6.1.14.7(c) and renumber subsequent figure to read as follows:



<u>A. Chest</u>	<u>C. Waist</u>
<u>B. Sleeve Length</u>	<u>D. Length</u>

A. Chest Circumference. Measurement of upper torso garment from folded edge to folded edge, at base of armholes and multiplied by 2 to obtain circumference.

B. Sleeve Length. Measurement from midpoint of shoulder diagonally down sleeve to bottom edge of cuff.

C. Waist Circumference. A garment measurement from top edge of waistband from folded edge to folded edge, and multiplied by 2 to obtain circumference.

D. Total Length. Upper torso garment measurement from high point shoulder at base of collar to bottom edge of garment.

FIGURE 6.1.14.7(c) Womens Upper Torso Measurements [to be used with Table 6.1.14.3(d)]

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FIGURE 6.1.14.4.7(ēd) One-Piece Garment Torso Measurements [to be used with Table 6.1.14.3(ēe)].

5. Revise cross references in paragraphs 6.1.14.4 and 6.1.14.5, and Figure 6.1.14.7(c) caption to read as follows:

6.1.14.4 Size requirements for tall sizes for upper torso measurements as specified in Table 6.1.14.3(a) and Table 6.1.14.3(ēe) shall have an additional 25 mm (1 in.) added to the sleeve length dimension and an additional 38 mm (1 1/2 in.) added to the front and back length dimensions.

6.1.14.5 Garments shall be permitted for sizes midway between those specified, provided that they meet dimensional requirements that are midway between the respective values for corresponding even sizes specified in Table 6.1.14.3(a) through Table 6.1.14.3(ēe).

FIGURE 6.1.14.7(c) One-Piece Garment Torso Measurements [to be used with Table 6.1.14.3(ēe)].

Substantiation: In NFPA 1977-2016, Table 6.1.14.3(a) Minimum Sizing Requirements for Protective Upper Torso Garments, there is only one table that does not state Unisex, Men's or Women's. This table causes significant fit issues for women required to wear said garments when the appropriate measurements are not sufficient for women. There should be two separate size tables included for Protective Upper Torso Garments, one table specifically for women and a second table specifically for men as there are for protective lower torso garments.

Emergency Nature: The standard contains an error or an omission that was overlooked during the regular revision process. The proposed TIA intends to correct a previously unknown existing hazard. The proposed TIA intends to offer to the public a benefit that would lessen a recognized (known) hazard or ameliorate a continuing dangerous condition or situation.

The following testimonies are a couple of the responses that our company received after asking women of their concerns/issues regarding the current wildland firefighting uniforms. Since these can be somewhat lengthy, we only included a couple, but we have many more that have very similar responses. 1) "I'd like to work in PPE that helps my performance not hinder it. Something that makes my job safer and easier is something I'm prohibited from wearing. What I'm offered to wear literally makes me bleed. There's bigger issues with the NFPA sizing standards that need to be changed to get firefighters the best gear with the safest fit. I need to be able to run from fire at any time." and 2) "As a woman who has been in wildland fire for nearly 20 years I have struggled my entire career to have Nomex pants that fit as I have a curvy body shape with muscular thighs and a shorter rise than most men. This body shape does not lend itself to the standard cut and fit of men's pants. In order to get men's pants to fit my quads and hips I end up with pants that have a crotch that is nearly to my knees while the waistband is up to my ribs and is larger than necessary for my waist. Without a belt, there is no chance of them staying up and even with a belt they slide down throughout the day. The problem that this leads to is two-fold. One, I always have one hand busy pulling the crotch of my pants up so that I can hike, step over or just move around without the crotch of my pants restricting my movements or catching on obstacles. This makes having two hands available to do work challenging and increases the risk and hazard of my activities. Two, with the waist of my pants bunched up under my line gear chafing and blisters occur where my line-gear and pants waistbands rub. On 14-day assignments this has led to needing wound-care for blisters. Both of these issues pose a safety threat and a body shape such as mine isn't uncommon, especially in the field of wildland firefighting. It would be fantastic if this need could be recognized and gear designed and approved to fit the female body. All wildland firefighters deserve personal protective equipment that fits their bodies and allows them to safely do their work." We feel the responses substantiate a need for there to be a women's specific fit included in the NFPA 1977 Standard. Women feel unsafe and at risk while performing a physically demanding job wearing clothing made for men.

Anyone may submit a comment by the closing date indicated above. Please identify the TIA number and forward to the Secretary, Standards Council. [SUBMIT A COMMENT](#)