DUPONT PERSONAL PROTECTION

PROTECTIVE CLOTHING AND BLOODBORNE PATHOGENS

There is no single test that qualifies a garment for bloodborne pathogens (BBP) protection.

Manufacturers make many claims regarding BBP protection. Often, these claims focus on "passing" a specific ASTM test. However, BBP applications are very different and the Personal Protective Equipment (PPE) needed varies from situation to situation. To select an appropriate garment, employers must understand their workplace hazard and how a given test method may be used to meet their obligations under the BBP regulations. This document provides information to help end-users understand manufacturers' claims about garment BBP performance.

OSHA Bloodborne Pathogens Regulation (29 CFR 1910.1030)

What 29 CFR 1910.1030 States:

The OSHA Bloodborne Pathogen regulation requires that employers provide appropriate personal protective equipment at no cost to the employee when it is "reasonably anticipated skin, eye, mucous membrane or parenteral contact with blood or other potentially infectious materials may result from the performance of an employee's duties."

What you need to know:

- The OSHA standard does not mandate or recommend any specific testing for PPE against bloodborne pathogens. It is misleading to claim that any garment meets the requirements of the OSHA bloodborne pathogens regulations under all conditions.
- The selection of the proper garment depends on the situation.
- OSHA does not recommend or endorse specific products for this use.
- Protection from bloodborne pathogens requires additional personal protection equipment in addition to garments.

***Bottom Line**—beware of manufacturer claims of "OSHA compliance"; these claims are inappropriate and unfounded. No garment satisfies the OSHA Bloodborne Pathogens rule under all situations.*

ASTM F1670—Synthetic Blood Penetration Test Method

What ASTM F1670 States:

A specimen is subjected to synthetic blood at a prescribed pressure for a period of time. Test liquid is forced against fabric being tested in a pressurized cell. If liquid droplets are seen on the outside of the test fabric, the material has failed the test.

What you need to know:

- Method utilizes arbitrary value for applied pressure (2 psi) that is not substantiated in actual end-use settings.
- Intended as a screening test for ASTM F1671 (described on following page).
- Typically, seams and closures are not tested even though these components generally offer less barrier protection than the fabric.

***Bottom Line**—beware of claims of "Pass" for ASTM F1670. This method is not intended to qualify that garment being considered will provide protection in applications involving potential bloodborne pathogens.*

ASTM F1671—Bacteriophage Penetration Test Method

What ASTM F1671 States:

A specimen is subjected to a liquid medium containing a viral surrogate at a prescribed pressure for a specified period of time. Test liquid is forced against fabric being tested in a pressurized cell. A detection device is used to identify penetration of the viral surrogate even if liquid penetration is not visible.

What you need to know:

- Method utilizes arbitrary value for applied pressure (2 psi) that is not substantiated in actual end-use settings.
- Typically seams and closures are not tested even though these components generally offer less barrier protection than the fabric.

***Bottom Line**—beware of claims of "Pass" for ASTM F1671. There are bloodborne pathogen exposure situations during which applied pressure (e.g., resting elbow or kneeling in pool of liquid) may be considerably less or may significantly exceed the arbitrary 2 psi pressure threshold. In other words, even a garment that passes ASTM F1671 may not provide adequate viral barrier under all conditions. In addition, the construction of seams and closures may have considerably less barrier than the garment fabric. End-users should request data on seam performance under ASTM F1671 from the garment supplier or distributor.*

DuPont Personal Protection

can provide a wide range of protective fabrics along with their specifications to meet a broad spectrum of needs. We believe these garments, when used properly as part of a protocol which includes other protective equipment and thorough personal hygiene practices, may help reduce the opportunity for contamination of workers' skin and clothing by potentially infectious pathogens.

Garments made of DuPont™ Tyvek® and DuPont™ Tychem® are not appropriate for all situations. Tyvek® protective clothing fabric blocks penetration from synthetic blood at 2 kPa (0.3 psi), demonstrating that Tyvek® offers some degree of protection. The sewn seams and closures of typical Tyvek® garments may provide less barrier protection than the Tyvek® fabric.

If exposure to moderate-to-large volumes of body fluids is expected, taped-seam protective garments made of Tychem® fabrics, which are liquid impervious materials, should be considered along with techniques that help reduce the risk and volume of body fluid contact.

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