Understanding CE Marking

DuPont™ SafeSPEC™

What is the CE marking?

The European Union has identified six levels of protection (Types) to facilitate the choice of chemical protective clothing. To carry the CE marking, chemical protective equipment (category III) must pass one or more of the garment "Type" tests, meet or exceed the minimum requirements for the materials' physical and chemical properties, and be correctly identified and labeled. In addition, the products must be manufactured to a consistent quality, and the manufacturer must either hold a quality certificate such as ISO 9000, or be subject to regular inspections by the notified laboratory.

Protection performance levels may differ even if products are certified with the same Type. The test results reveal the differences.

The CE marking means that chemical protective clothing meets certain minimum requirements. However, it does not mean that chemical suits of the same Type offer the same level of protection performance. This is why it is essential to look at the results of the tests carried out on the material used to make the garment.

Chemical protective clothing certified to a specific "Type" can have very different performance properties in terms of protection, durability and comfort. The indicated "Type" simply means that the suit has passed one or more of the whole suit liquid tests and meets the minimum performance requirements for the constituent mechanical and barrier tests.

Other important criteria to be taken into consideration

Tips for making a safe selection

When evaluating the qualities of a suit for a particular job, industrial safety and economic factors both play an important role in the final decision.

1. Protective barrier

Without doubt, this is the most important consideration in the selection process. The material from which the suit is made must be proven to offer protection against all the hazardous substances to which the wearer could be exposed to based on the hazard assessment.

2. Durability

Many applications require mechanical strength. Therefore it is recommended to test how the material behaves in contact with abrasive surfaces. Only intact material can act as a barrier.

3. Design is critical to comfort and protection

A good fit ensures that a protective suit provides the wearer with both comfort and adequate protection. Poorly fitting garments run a higher risk of tearing and restrict movement, which can affect the wearer's ability to carry out work safely and efficiently.

4. Quality

In addition to the quality of the garment's material, the quality of garment manufacturing also plays a vital role in the overall level of protection. DuPont checks the finishing and quality of material of each protective garment during the manufacturing process. Buyers should bear the following criteria in mind: seam tightness and strength, sizing, applied quality control and garment guarantees by the manufacturer.

Understanding the CE marking "Types"

Type 1ET / Norm EN 943-2
Specifies the minimum requirements for the chemical protective suits used by emergency teams (ET), including component parts such as gloves and boots, which may be specified elsewhere.

Type 1 / Norm EN 943-1
Specifies the minimum requirements, test methods, marking and information supplied by the manufacturer for the following categories of ventilated/non-ventilated limited-use and reusable chemical protective suits, including component parts such as gloves and boots, which may be specified elsewhere.
Type 1: gas-tight chemical protective suit.
Type 1a: gas-tight chemical protective suit with a breathable air supply, independent of the ambient atmosphere, e.g. a self-contained, open-circuit, compressed-air breathing apparatus, worn inside the chemical protective suit.
Type 1b: gas-tight chemical protective suit with an independent breathable air supply, e.g. a self-contained, open-circuit, compressed-air breathing apparatus, worn outside the chemical protective suit.
Type 1c: gas-tight chemical protective suit with a breathable air system, providing positive pressure, e.g. an air line.

Understanding the CE marking “Types” (continued)

Type 2 / Norm EN 943-1

Specifies the minimum requirements, test methods, marking and information supplied by the manufacturer for the following categories of ventilated/non-ventilated limited-use and reusable chemical protective suits, including component parts such as gloves and boots, which may be specified elsewhere.

Type 2: non-gas-tight chemical protective suit. A non-gas-tight chemical protective suit with a breathable air system providing positive pressure.

Type 3 / Norm EN 14605

Specifies the minimum requirements for the following categories of limited–use and reusable chemical protective clothing:

Full-body protective clothing with jet-tight connections between the different parts of the clothing (Type 3: liquid-tight clothing) and, if applicable, with liquid-tight connections to component parts, such as hoods, gloves, boots, visors or respiratory protective equipment, which may be specified in other European standards. Examples of such clothing are one-piece coveralls or two-piece suits, with or without gloves, hoods, visors, integrated socks and boot covers.

Partial body protection garments offering protection against permeation of chemical liquids to specific parts of the body. Examples of such garments are: laboratory coats, jackets, trousers, aprons, sleeves, hoods (without air supply), etc. As partial body protection leaves some parts of the body unprotected, this document only specifies the performance requirements for the clothing material and the seams.

Type 4 / Norm EN 14605

Specifies the minimum requirements for the following categories of limited-use and reusable chemical protective clothing:

Full-body protective clothing with spray-tight connections between the different parts of the clothing (Type 4: spray-tight clothing) and, if applicable, with spray-tight connections to component parts, such as hoods, gloves, boots, visors or respiratory protective equipment, which may be specified in other European standards. Examples of such clothing are one-piece coveralls or two-piece suits, with or without gloves, hoods, visors, integrated socks and boot covers.

Partial body protection garments offering protection against permeation of chemical liquids to specific parts of the body. Examples of such garments are: laboratory coats, jackets, trousers, aprons, sleeves, hoods (without air supply), etc. As partial body protection leaves some parts of the body unprotected, this document only specifies the performance requirements for the clothing material and the seams.

Type 5 / Norm EN ISO 13982-1

Specifies the minimum requirements for chemical protective clothing resistant to penetration by airborne solid particles (Type 5). These garments are full-body protective items covering the trunk, arms and legs, such as one-piece coveralls or two-piece suits, with or without hoods, visors and foot protection. Requirements for component parts, such as hoods, gloves, boots, visors or respiratory protective equipment, may be specified in other European standards.

Type 6 / Norm EN ISO 13034

Specifies the minimum requirements for limited-performance, limited-use and reusable chemical protective clothing. Limited-performance chemical protective clothing is intended for use in cases of potential exposure to light sprays, liquid aerosols or low-pressure, low-volume splashes, which do not require a complete liquid permeation barrier (at molecular level). The scope of this standard covers both chemical protective suits (Type 6) and partial body protection garments (Type PB [6]).

Chemical protective suits (Type 6) cover and protect at least the trunk and the limbs, e.g. one-piece coveralls or two-piece suits, with or without hoods, integrated socks or boot covers. This standard specifies the minimum requirements for the connections between the different parts of Type 6 suits, by using a whole-suit spray test according to a variant of EN 468:1994, as described in 5.2.

Partial body protection garments, e.g. coats, aprons, sleeves, etc. of similar limited performance (Type PB [6]), cover and protect specific parts of the body and are not subjected to the whole-suit test.

PRODUCT TERMS OF USE AND WARNINGS

Garments made using Tyvek® fabrics will burn and possibly melt. None of these garments should be worn near heat, open flames, sparks or any other possible ignition source nor should they be worn in potentially explosive or flammable environments. If these garments do burn or melt while being worn, it may increase the severity of burn injuries even when worn over garments which are flame resistant, including, but not limited to, Nomex® IIIA garments. This information is based upon technical data DuPont believes to be reliable. It is subject to revision as additional knowledge and experience are gained. DuPont makes no guarantee of results and assumes no obligation or liability in connection with this information.

It is the user's responsibility to determine the level of toxicity and the proper personal protective equipment needed. It is intended for information use by persons having technical skill for evaluation under the specific end-use conditions, at their own discretion and risk.

Anyone intending to use this information should first verify that the garment selected is suitable for the intended use. In many cases, seams and closures may provide less barrier than the fabric. If the fabric becomes torn, abraded or punctured, end user should discontinue use of garment to avoid compromising the barrier protection. SINCE CONDITIONS OF USE ARE OUTSIDE OUR CONTROL, DUPONT MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION, NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE AND ASSUME NO LIABILITY IN CONNECTION WITH ANY USE OF THIS INFORMATION. This information is not intended as a license to operate under or a recommendation to infringe any patent, trademark right.

Garments made of Tyvek® should have slip-resistance materials on the outer surface of boots, shoe covers, or other garment surfaces in conditions where slipping could occur.

Tyvek® Plus and Tyvek® Xpert contain natural rubber latex which may cause allergic reactions in some sensitized individuals. Anyone who begins to exhibit an allergic response during the use of DuPont products should immediately cease using these products.

For further information about the barrier performance, please contact your Tyvek® supplier or DuPont Customer Service.

DuPont Personal Protection

Customer Service:
United States 1 800 931 3456
Canada 1 800 387 9326

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