

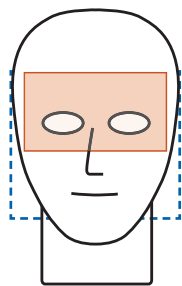


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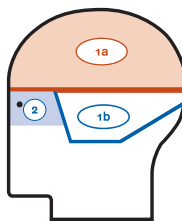
8 PROTECTION ZONE VISOR



According to the new helmet specification a visor is still not mandatory. If one exists, it has to comply with the visor standard EN 14458. To comply with this standard an eye protection that covers at least the area framed in red (see figure) is required.

However, a facial protection visor (area framed in blue) as applied for Dräger HPS 6200 offers a higher degree of protection. It is indicated on the visor with the symbol ☺.

9 PROTECTION ZONES FIRE FIGHTING HELMET



The new standard EN 443:2008 defines the upper part (protection area 1a) as protection zone, which corresponds with a half shell helmet (helmet type A). In order to create a full protection helmet (helm type B), the protective zones 1a and 1b are required – this is the design of the full integral helmet Dräger HPS 6200.

Protective zone 1a	Minimal protection area	Minimal protection area Helmet type A
Protective zone 1a + 1b		Full protection area Helmet type B
Protective zone 2 = Visor		Visor is optional. If one exists, it has to conform to the new visor classification EN14458!

The New Standard: Reaction To Increased Risk.

The requirements and testing procedures of the new standard EN 443:2008 were adapted to the newest insights in material properties and manufacturing technologies. In addition, they were extended under consideration of the current practical experience of the fire fighters and a new evaluation of their risk analysis.

This does not only take into account the increased risk potential for the fire fighters; a further aspect was the harmonisation of requirements for protective equipment for fire fighters including the helmet (e.g. compressed air breathing apparatus and intervention garment).

The result of the new standard EN 443:2008 are significantly improved safety regulations for the protection of fire fighters. Dräger took part in developing the new standard and provided research results as well as requirement-oriented analyses to the European standardisation committee for fire fighter helmets. There are two different helmet types: The half shell and the full integral helmet.

We have created a video about this topic, which you can order free of charge from one of our branches under the part number 90 46 344.

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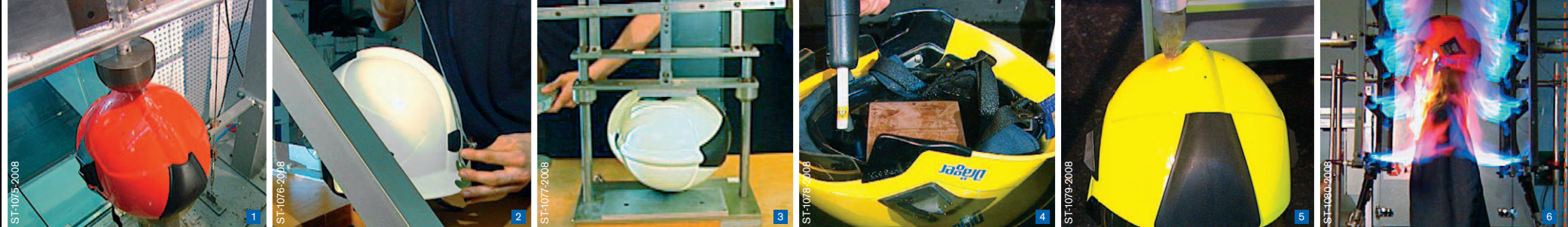
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Under Evaluation: The Fire Fighting Helmet Dräger HPS 6200.

According to the new STANDARD EN 443:2008 helmets for fire fighting in buildings and other structures



The New Standard EN 443:2008 – Increased Safety During Missions.

Fire fighters worldwide risk their lives every day. No mission is like the other. Therefore the protective equipment has to comply with highest standards. At the same time the comfort for the wearer has to be maximised.

Dräger researches new technologies in the area of fire fighter helmets and develops products which reduce the risk for the action forces as much as possible. Countless technical improvements were realised for this product range. Dräger is able to establish new standards in regard to safety at work and in extreme situations due to long-time experience and know-how.

The new standard EN 443:2008 consists of extended safety requirements for additional improved protection of fire fighters on a mission. Dräger has tested their own fire fighter helmets meticulously and is introducing the results in this document. The safety requirements were not only fulfilled – the results have impressively demonstrated the safety and quality of the fire fighter helmet Dräger HPS 6200. The new generation of fire fighter helmets therefore provides the highest possible safety.

New Helmet Standard + Innovative Technologies = Dräger HPS 6200

1 IMPACT AND SHOCK ABSORBANCE

TESTING FOR THE EFFECTS OF IMPACT AND SHOCK

An iron ball with a weight of 5 kg impacted the preconditioned helmet from a height of 2.5 m. It struck five times on different test points. In order to provide optimum protection for the wearer, the remaining force on head and neck may amount to a max. of 15,000 Newton.

TEST RESULT FOR DRÄGER HPS 6200:

The remaining force amounts to less than 12,000 Newton. This means that the helmet passes the test without a doubt.

2 THE FASTENING SYSTEM: EFFECTIVENESS AND STRENGTH

TESTING FOR FIRM HOLD

1. Test: During the strip off test, a 10 kg weight pulls with full force on the helmet to test the effectiveness of the fastening system.
2. Test: The chinstrap is tested for strength by stretching it with the help of a small motor until a force of 250 Newton is applied.

TEST RESULT FOR DRÄGER HPS 6200:

The helmet stays on the head and the chinstrap withstands the breaking test. If forces of above 750 Newton are applied, the clip will open automatically to protect the wearer from strangulation.

3 LATERAL STABILITY

TESTING FOR STABILITY IN LATERAL AND LONGITUDINAL DIRECTION

This test evaluates the stability of the helmet in lateral and longitudinal direction under the application of heat. The load is gradually increased until a force of approx. 65 kg weight is applied to the helmet. According to the new standard this may result in deformation of max. 40 mm.

TEST RESULT FOR DRÄGER HPS 6200:

The deformation of approx. 25 mm is excellently small. It is particularly important to prevent possible leakages at the mask due to high lateral deformation when wearing a helmet mask combination.

4 ELECTRICAL INSULATION

TESTING FOR THE EFFECT OF ELECTRICAL CURRENT

For this test a current of 1200 Volt is applied into the water and the current in the inside of the helmet is measured. The new standard for fire fighter helmets EN 443 requires a value of max. 1.2 mA.

TEST RESULT FOR DRÄGER HPS 6200:

A barely visible amplitude of 0.5 mA is the result. Therefore the helmet provides highest safety from dangerous sources of electrical current or electric shocks during missions.

5 RESISTANCE TO PENETRATION

TESTING FOR PROTECTION OF FALLING, POINTED OBJECTS UNDER THE APPLICATION OF HEAT

For the penetration test the helmet is placed under applied heat radiation at first for 8 minutes of

continuous heat in a heat flow of 14 kilowatt per cubic metre, which corresponds with a temperature on the helm surface of approx. 250 degrees Celsius. A pointed object with a weight of 1 kg falls onto the helmet from a height of 2 metres. The helmet still has to offer protection

TEST RESULT FOR DRÄGER HPS 6200:

The test object only damages the outer layer of the helmet shell. The helmet still offers protection under these extreme requirements.

6 FLAME-ENGULFMENT

THE FLAME ENGULFMENT TEST

The first step is to heat up a dummy with fire fighter jacket, full-face mask and fire fighter helmet including accessories in an oven for 20 minutes at 90 °C. A flame engulfment of a temperature of 1000 degrees Celsius follows for 10 seconds. The test is passed if the helmet does not burn for longer than 5 seconds.

TEST RESULT FOR DRÄGER HPS 6200:

The helmet does not burn or smoulder for a second after the flame engulfment, the inside of the helmet is not damaged.

7 SYSTEM APPROVAL

Any existing helmet lamp, neck curtain and communication system is a mandatory part of the approval according to EN 443:2008. The Dräger HPS 6200 is approved as a system, all offered accessories from Dräger are test components according to EN 443:2008.