EN 397: 2012
Industrial Safety Helmets

Mandatory tests:

- **Impact* :** Energy spread to the head form must not exceed 5 kN after the fall of an object of 5 kg at 1m high.

- **Penetration* :** The tip of the test mass used (3 kg from 1m height) must not come into contact with the skull.

- **Flammability :** The helmet is exposed to a flame and it must not burn with flame emission more than 5 seconds after removal of the flame.

* Impact and penetration tests are performed at room temperature, at +50 °C and at -10°C.

Optional tests:

- **Resistance at extreme temperatures:** testing impact and penetration are performed at +150 °C, at -20°C or -30 °C temperatures.
- **Electrical properties:** Protects against a short accidental contact with electric leads under voltage up to 440 Vac.
- **Lateral deformation:** Protects against lateral compression. The maximum deformation of the helmet should be ≤40 mm (LD).
- **Molten metal splashes:** The helmet is not deformed or penetrated by splashes of molten metal (MM).

ANSI/ISEA Z89.1: 2009
American National Standard for Industrial Head Protection

This standard describes Types and Classes, testing and performance requirements for protective helmets. These include recommended safety requirements for authorities considering the establishment of regulations or codes concerning the use of protective helmets.

TYPE I - Hard hats are designed only to withstand top impacts
TYPE II - Hard hats designed to withstand impacts from the top and the side.
Class C - Conductive Helmet = the hard hat will not protect the wearer from electrical hazards.
Class G - General Helmet = helmet can withstand an electrical current up to 2,200 volts.
Class E - Electrical Helmet = helmet that providing the highest level of electrical protection, withstanding currents up to 20,000 volts.

EN 50365: 2002
Insulating helmets for use on low voltage installations

This standard is for helmets used for working live or close tolive parts on installations not exceeding 1000 V a.c. or 1500 V d.c. Testing to EN50365 exceeds testing under EN397 for electrical properties.
Marking: double triangle + class +batch number.