EN 812 – Industrial Bump Caps

Very much like Industrial Safety Helmets (EN 397), Industrial Bump Caps are there to protect your head but not against falling objects. They protect your head from static objects that you could "bump" your head into. (E.g. walking into low ceilings or hanging obstructions). Industrial Bump Caps are tested for:

Impact/Shock Absorption

Impact tests are carried out similar to those required for industrial helmets, but using a lower energy level – a 5kg flat striker is dropped onto the helmet from a height of 250mm, with a maximum allowable transmitted force of 15kN. Impacts are carried out on the front and rear of the helmet, with the head form tilted at 30° and 60° to reflect the nature of any impacts likely in use. This test is carried out on several helmet samples, following pre-conditioning to high temperature, low temperature, water immersion and UV ageing. There is also the option to expand the temperature range for the pre-conditioning if claimed by the manufacturer.

Penetration

As with industrial helmets, bump caps are intended to provide protection against sharp or pointed objects (such as corners or protruding elements of static objects), and so a penetration test is required. The test is based on a method similar to the shock absorption test, in that a striker is dropped from a set height onto the helmet fitted to a fixed head form. However, in this case, the striker is a pointed cone, and rather than measure the transmitted force, the assessment is based on whether the striker makes contact with the head form underneath the helmet. This can be carried out using indicator material (e.g. plasticine or soft metal) on the head form itself, or by establishing electrical contact between the striker and head form (where if the striker contacts the head form, a circuit is complete which sounds an alarm). As with shock absorption, the penetration test in EN 812 is carried out at a lower energy (500g striker dropped from 500mm) than that specified in EN 397, to reflect the nature of the hazards. As with the impact testing, this is carried out on helmets pre-conditioned to high temperature, low temperature, water immersion and UV ageing.

Design Requirements

Most specifications for protective helmets include a number of requirements for the design of a helmet in addition to the specific performance requirements. These typically encompass the area of coverage provided by the helmet, as well as the field of vision afforded to the user when worn. They can also cover a number of ergonomics and safety-based requirements, such as clearance between the head and the shell of the helmet (particularly in the case of industrial helmets).