# GLOVE STANDARD

## EN 13594 - PROTECTIVE GLOVES FOR MOTORCYCLE RIDERS - REQUIREMENTS AND TEST METHODS

Motorcyclists' gloves face two extremes of challenge. Firstly, they must be sufficiently thin, close-fitting and flexible so as to enable the rider to feel the controls and operate the motorcycle's switches without impedance or error. In direct contrast to these requirements, however, gloves must at the same time be sufficiently robust to withstand impact, abrasion and cuts in a motorcycle accident. There is also the potential for the wearer's hand to become trapped under the motorcycle, or even their own body, when sliding along a hard, abrasive road surface.

Put simply, gloves face a very difficult set of conflicting demands!

The original version of EN 13594, published in 2002, set a single abrasion resistance requirement of 2.5 seconds for glove materials. In the 2015 revision, this has been increased to 4 seconds for Level 1 gloves and 8 seconds for Level 2 gloves, but changes in the test apparatus means the two different versions' requirements do not bear direct comparison, as the original standard used an abrasive belt with twice the abrasiveness of that specified in the latest version.

In addition, the 2002 version of the standard required the abrasion resistance requirement to be met across the entire surface area of the glove. In the 2015 revision, the requirement only applies to the construction in the limited area of the heel of the hand.

The design requirements of gloves have also changed, in that where the 2002 standard required the cuff to extend not less than 50 mm above the wrist joint, the 2015 version retains this for Level 2 gloves but reduce the requirement to not less than 15mm for Level 1 gloves. Both performance levels of glove continue to be tested for restraint (resistance to displacement or removal from the wearer's hand), however.

Impact protection is optional for Level 1 gloves, but mandatory for Level 2 gloves. When tested with an impact energy of 5 Joules, the mean transmitted force requirement is 7 kiloNewtons for Level 1 gloves and 4 kiloNewtons for Level 2 gloves.

The latest version of the standard continues the original's requirements for tear strength of materials. The tests for strength of seams and impact cut resistance adopt methods from the industrial glove standard. Any metal studs or components of other materials which are intended to improve the abrasion resistance of certain parts of the glove must be fitted to a separate external layer and may not protrude to the inside of the glove.

Glove materials are also required to meet international requirements for their innocuousness, such as pH, Chromium 6, PCPs and azo dyes. In drafting the latest version of EN 13594, however, the industry lobby removed the requirement for testing glove materials for colour-fastness to water. Some certification bodies consider this an important safety and quality issue, however, so they still require this evaluation to take place.