

## **IS 4151: 2015- Protective helmets for motorcycle riders**

**Protective helmets for motorcycle riders** are essential **personal protective equipment**, designed to reduce the risk of **head injury** during **road accidents**. Since this product is intended for everyday use by two-wheeler riders, these helmets have to necessarily provide critical protection against **impact and abrasion hazards**.

**Indian Standard IS 4151: 2015** formulated by the Bureau of Indian Standards(BIS) sets forth detailed specifications for materials, construction, performance, and testing of motorcycle helmets, addressing the quality expectations of consumers. However, the standard states that while helmets significantly improve safety, they may not completely prevent injuries or fatalities in severe accidents. IS 4151 was first issued as an emergency IS in 1967 and the present 2015 version is the fourth revision which has been taken up on the basis of experience gained during these years and to bring in line with latest developments at international level, keeping in view the **Indian climatic and road conditions**.

The standard mandates **impact absorption** tests with impact points and use of a kerb stone anvil, increased impact velocity and head injury criteria, to ensure the helmet effectively reduces head injury risks in various scenarios. The IS prescribes that Helmets to have a secure chin strap and tests for the **retention** system, preventing the helmet from slipping off during an accident. The standard includes **micro-slip** tests and resistance to abrasion for chin straps.

The standard addresses **Comfort and Durability by insisting that the Helmets** shall have **comfort padding** made from sweat-resistant and non-irritant materials along with the constructional requirements, ensuring they are suitable for prolonged use and different weather conditions. The standard now allows **ventilation** for enhanced comfort, and **includes side impact tests** to check helmet durability under various temperatures and humidity conditions..

The standard also specifies a range of tests, including rigidity tests, projection and surface friction checks, an audibility test, and quick-release mechanisms to verify helmet functionality in emergencies.

IS 4151: 2015 reflects upon materials for protective padding and comfort padding and safety testings, specific markings on the helmets, providing consumers with a reliable benchmark for safety and quality.

The Ministry of Road Transport and Highways vide Helmet for riders of Two Wheeler Motor Vehicles (Quality Control) Order, 2020 of reference S.O. No. 4252 (E) 26/11/2020 has made **BIS certification mandatory** for this product, thus reinforcing consumer confidence.