



Indian Standard IS/ISO 6742-2 :2015 – Cycles - Lighting and retro - Reflective devices: Part 2 retro - Reflective devices

Retro-reflective devices are materials or components designed to reflect light back to its source, regardless of the angle at which it hits the surface. In cycling, retro-reflective devices are used on various parts of the bicycle, such as pedals, spokes, tyres, and reflectors, to make the cycle and rider more visible to drivers. By reflecting headlights directly back to the driver, these devices improve visibility from long distances and various angles, enhancing safety for cyclists on roads.

Cyclists rely on retro-reflective devices to ensure visibility and safety on the road, especially in low-light conditions and they expect high quality Retro reflective devices should **Provide High Visibility, Maintain Accurate Color Reflection and Exhibit Durability Across Environmental Conditions.** *The Indian Standard IS/ISO 6742-2 for Cycles - Lighting and retro - Reflective devices: Part 2 retro - Reflective devices*, addresses these quality expectations by specifying the essential requirements for Retro reflective devices like **reflectors, retro-reflective tyres, and spoke devices** to ensure bicycle safety on public roads. Also, this standard specifies construction, testing, and durability requirements to ensure these components meet critical safety and performance expectations.

Key quality parameters defined in the standard include:

- **High Visibility:** To meet visibility needs, the standard specifies minimum CIL values for different observation and entrance angles
- **Accurate Color Reflection:** The standard ensures color accuracy with chromaticity coordinates based on CIE standards. These coordinates maintain consistent color reflection.
- **Durability Tests:** The standard mandates environmental tests to ensure resilience:
 - **Temperature Resistance:** Devices must operate between -30°C and 65°C.
 - **Impact Resistance:** Reflectors should withstand a drop impact test using a 100 g steel ball from a height of 1 meter.
 - **Moisture Resistance:** The devices are exposed to 25°C water to simulate rainy conditions.
 - **Fuel and Oil Resistance:** The standard requires devices to resist fuel and oil exposure for 24 hours without degradation.

The **DPIIT Quality Control Order** mandates that all Retro reflective devices for cycle sold, manufactured, or imported in India comply with IS/ISO 6742-2 and display the BIS Standard Mark, ensuring high-quality, safety for cyclists.