

## **IS 13213 : 2018 Polyurethane Full Gloss Enamel (Two Pack) — Specification (*First Revision*)**

Polyurethane full gloss enamel is a two-pack coating system mainly used as a protective topcoat for railway coaches, diesel, and electric locomotives, providing strong resistance to atmospheric corrosion. Known for its high durability and long-lasting color and gloss retention, this enamel is also widely applied to heavy vehicles such as buses. It is designed to withstand chemical, environmental, and physical damage, making it ideal for wet, humid, coastal, and industrial conditions.

First published in 1991, IS 13213 was revised in 2018 to add a lead content restriction of 90 ppm, enhancing health and environmental safety. This standard specifies requirements for the composition, durability, and application of the enamel, which consists of an enamel base (containing acrylic polyol and pigments) and a hardener (with aliphatic poly-isocyanate). These components must be mixed in a specified ratio and used within 4 hours to ensure optimal performance.

The standard prescribes tests for film thickness, drying time, flexibility, adhesion, and chemical and weathering resistance. It mandates accelerated weathering tests using xenon arc or QUV apparatus to validate durability. Packaging and labeling requirements include safety warnings for the enamel's toxicity and flammability, along with clear instructions to keep it out of reach of children and guidelines for safe handling.

Sampling and testing protocols are detailed to verify product consistency, emphasizing durability and resistance to environmental factors as key quality criteria.