

IS 11855: 2017- Design and Use of Rubber Seals for Hydraulic Gates – Recommendations

Dams and barrages are constructed to store or divert water for purposes such as **irrigation and electricity generation**. In these structures, hydraulic gates are essential components used to **control water flow** through various sections, including tunnels, spillways, hydel channel head regulators, forebay intake structures, bypass channels, and draft tubes of powerhouses.

To prevent unwanted water leakage through closed gates, seals are installed on either the gate or the metal frame within the gate slot. Rubber is the preferred material for these seals due to its excellent **elasticity, flexibility, and resilience**. Rubber deforms under pressure to create a tight seal and returns to its original shape once the load is removed, ensuring consistent performance in controlling water flow within **hydraulic structures**.

Rubber seals for hydraulic gates are specialized components designed to **prevent leakage** in hydraulic structures by creating a reliable, flexible seal that withstands water pressure. These seals play a critical role in maintaining the **safety and functionality of hydraulic gates** used in various water management applications, such as **dams, canals, and reservoirs**.

The rubber seals for hydraulic gates shall be durable offering high **resistance to wear**, high **Tensile Strength** and **Hardness**, ensuring a long **service life**. It shall also exhibit **flexibility**, elasticity and **reduced friction** for smoother operation.

The Indian Standard IS 11855: 2017 formulated by Bureau of Indian Standards provides comprehensive guidelines for **design** and use of different types of rubber seals for hydraulic gates and addresses the consumer expectations by specifying the **material requirements** ensuring durability and performance. The physical properties specified in the standard sets clear requirements for Shore A hardness, tensile strength, and **elongation**, establishing benchmarks for strength and flexibility. The standard also recommends **fluorocarbon cladding** to reduce friction.

Through this standard, **IS 11855: 2017**, a certification from BIS ensures that rubber seals for hydraulic gates meet performance standards, aligning with consumer expectations for quality and reliability.