



IS 3549 : 2023

Rubber Hoses and Hose Assemblies for Water
Suction and Discharge – Specification

This standard specifies the requirements for **textile-reinforced**, smooth-bore rubber water suction and discharge hoses and hose assemblies designed for water suction and discharge are commonly used in industrial and agricultural settings to transfer water under a range of environmental conditions.

The standard categorizes hoses into three types based on their operational duty requirement: **light-duty, medium-duty, and heavy-duty**, each suited for varying suction service and discharge pressures. The standard sets guidelines for hoses to operate effectively in ambient temperatures from -25°C to $+70^{\circ}\text{C}$ and water temperatures from 0°C to $+70^{\circ}\text{C}$.

High-quality hoses are expected to exhibit **durability, flexibility**, and resilience against environmental factors. **Performance** expectations include high tensile strength, sufficient elongation at break, and robust **adhesion** between the hose layers.

Consumers seek hoses that maintain flexibility at low temperatures, **resist ozone damage** and withstand significant hydrostatic pressure without leaks or ruptures. Additionally, good hoses should demonstrate **aging resistance**, sustaining their mechanical properties even after prolonged use or exposure to extreme temperatures.

To ensure functional performance, hoses should resist collapse under suction (suction flattening resistance) and maintain form under **bending stress**, achieving specified minimum bend radii without kinking or breaking. Moreover, end fittings and couplings must be strong, durable, and compatible with different hose types.

This standard addresses these expectations through strict material, construction, and performance specifications. To confirm that the hoses meet tensile strength and elongation benchmarks, tests are conducted on both finished hoses and rubber test sheets. The standard also enforces a hydrostatic-pressure proof test to verify that hoses can withstand operational pressures without structural failure and burst test, low-temperature flexibility test and ozone resistance to ensure hoses meet durability requirements.

It also specifies suction and bending tests to gauge hose resilience against collapse and kinking, vital for applications requiring frequent bending or exposure to vacuum pressures.

This standard plays a crucial role in meeting the consumer expectations for **durability, safety**, and **reliability** of rubber water suction and discharge hoses across a wide range of applications.