IS 8674 : 2013 Fibre ropes – Polyethylene – 3- and 4 -strand ropes (third revision)

IS 8674:2013 standard "Fibre Ropes — Polyethylene — 3- and 4-Strand Ropes," is based on the international standard ISO 1969:2004. This Indian standard specifies the requirements for polyethylene fibre ropes used for general service, covering both 3-strand hawser-laid ropes and 4-strand shroud-laid ropes. These ropes are primarily used in various industries for applications like lifting, securing, and mooring.

Key Elements of the Standard:

- Scope: The standard covers the design, construction, and physical properties of 3-strand and 4-strand polyethylene ropes.
- Designations: Ropes are classified based on the type of construction (3-strand or 4-strand), material (polyethylene), and reference number, which corresponds to the approximate diameter in millimeters.
- Physical Properties: The standard specifies the linear density and minimum breaking force for each rope size, ensuring consistency in strength and durability.

Some of the important test mentioned in the standard are::

1. Linear Density Measurement (ISO 2307): Ensures the rope's mass per unit length meets the standard, affecting both performance and cost.
2. Minimum Breaking Force (ISO 2307): Determines the rope's strength by testing its ability to withstand forces without breaking. This is crucial for safety in load-bearing applications.
3. Tolerance Levels: Specified tolerance levels ensure that variations in the manufacturing process do not significantly impact the rope’s performance.
4. Influence of Terminations: Eye-spliced terminations or knots may reduce the breaking strength by 10%, making it important to consider termination type in real-world applications.

IS 8674 ensures that polyethylene fibre ropes meet consistent safety, durability, and performance benchmarks across various industrial uses.