

Summary of IS 14220: 2018 - Openwell Submersible Pumpsets

Openwell submersible pumpsets are designed for efficient water handling in open wells, mainly for applications in agriculture, domestic water supply, and irrigation. This product is highly regarded for its ability to work under submerged conditions, making it ideal for fluctuating water levels in open wells. These pumpsets, suitable for both **single and multi-stage configurations**, use **single or three-phase AC induction motors** and are designed for operation in submerged conditions, primarily handling clear, cold water, the characteristics of which are as follows:

Characteristic	Limit
Turbidity	50 ppm (Silica Scale), Max
Chlorides	500 ppm, Max
Total solids	3000 ppm, Max
pH	6.5 to 8.5
Temperature	33°C, Max
Specific gravity	1.004, Max
Hardness (as CaCO ₃), (drinking water)	300 mg, Max

Consumers expect **reliability, durability, and energy efficiency** from openwell submersible pumpsets. High-performance indicators include a strong construction to prevent corrosion, efficient water delivery without overloading the motor, low maintenance, **minimal leakage**, and safe operation with robust earthing and insulation standards.

IS 14220:2018 outlines rigorous standards to meet these consumer expectations. This includes specifications for **motor design** with anti-corrosion measures, and comprehensive testing for **leakage, earthing, High Voltage** and other electrical parameters. The standard emphasizes **energy efficiency, material durability**. By specifying materials and **operational limits** for components, such as the impeller and motor housing, and Hydraulic performance characteristics such as **temperature rise in windings, Starting Torque Test, Speed, Flow Measurement, Hydrostatic Pressure Test** overall efficiency etc. It ensures **guarantee** for performance of the nominal volume rate of flow and the nominal head at the guaranteed duty point. The overall efficiency of the pumpset is also guaranteed at the declared duty point only. This standard ensures pumps deliver reliable performance and are energy-efficient while maintaining a high durability level.