Summary of IS 8229:1986 – Specification for Oil-Well Cement

IS 8229:1986 specifies the requirements for oil-well cement used in the petroleum industry to secure steel casing pipes and seal porous formations in oil and gas wells. This cement is engineered for high temperatures and pressures and ensures pumpability during well-cementing operations.

Consumers expect the following from oil-well cement:

a) **Chemical Composition**: Consistency in magnesium oxide, sulfur trioxide, and tricalcium silicate content to meet performance standards.

b) **Physical Performance**: Strength, fineness, and soundness to endure high-pressure and high-temperature environments.

c) **Durability**: High sulfate resistance to prevent degradation.

d) **Class-Specific Suitability**: Nine classes (A to J) cater to varying depths, temperatures, and pressure conditions.

e) **Flexibility**: Compatibility with admixtures like bentonite and fly ash for customized applications.

The standard comprehensively defines quality benchmarks:

a) **Chemical Requirements**: Details allowable composition ranges for key compounds to ensure chemical stability and resistance to environmental factors.

b) **Physical Tests**: Prescribes specific testing methods for compressive strength, soundness, and thickening time to verify cement performance under operational conditions.

c) **Classifications**: Categorizes cement based on depth, pressure, and temperature requirements to guide appropriate usage.

d) **Admixtures and Modifications**: Permits additives and set-modifying agents to adapt the cement to specialized well conditions.

e) **Packaging and Mass Tolerances**: Specifies guidelines for secure packing, including allowable tolerances for bagged cement, ensuring accurate delivery volumes.

This Indian Standard ensures reliable, durable, and efficient cementing solutions, aligning with consumer and industry expectations for oil and gas well operations.