
PRODUCT DATA SHEET

Specific Gravity Frame

Winch-Operated Frame for Specific Gravity Determination of Soil & Aggregates



1. GENERAL INFORMATION

- Equipment Name: Specific Gravity Frame
- Application: Determination of the specific gravity of soil, aggregate, or fine-grained samples by the water displacement (immersion) method
- Standard: ASTM D854 / AASHTO T100 / IS 2720 (Part 3)
- Use: Geotechnical & Soil Mechanics Laboratory Testing

2. MATERIAL OF CONSTRUCTION

- Frame Body: Mild Steel (MS), powder-coated finish
- Guide Rods: Stainless steel vertical guide rods for smooth, true-vertical travel of the sample basket
- Winch Mechanism: Geared hand-crank winch with wire rope and hook for controlled raising/lowering
- Sample Container: Corrosion-resistant perforated basket / container suspended from the winch hook
- Structure: Rigid welded four-leg frame with a stable base for immersion in a water tank

3. DIMENSIONS (STANDARD)

- Frame Height: 1200 mm (standard; taller frames available on request)
- Base Footprint: 600 mm × 600 mm
- Sample Basket Capacity: as per specified test quantity (custom capacities available)

- Winch Travel: Full height of frame via geared hand crank and guide rods

4. DESIGN FEATURES

- Geared hand winch for smooth, controlled raising and lowering of the sample basket
- Dual stainless steel guide rods keep the basket travelling vertically without swing
- Wire rope and hook arrangement for quick attachment/detachment of the sample container
- Open frame design allows a water tank/tub to be placed beneath for full sample immersion
- Stable four-leg base resists tipping during operation
- Powder-coated finish for corrosion resistance in wet laboratory conditions

5. TESTING / OPERATIONAL PURPOSE

- **Lowers and suspends the sample container fully submerged in water to record its submerged weight**
- Enables calculation of specific gravity via the water displacement (Archimedes) principle
- Provides repeatable, steady positioning of the sample for accurate weighing

6. PERFORMANCE REQUIREMENTS

- Smooth, jerk-free winch operation during raising and lowering
- Stable, swing-free suspension of the sample basket while submerged
- No corrosion or seizing of moving parts under repeated wet use
- Repeatable and accurate results suitable for continuous laboratory use

7. APPLICATION AREA

- Geotechnical & Soil Testing Laboratories
- Aggregate & Materials Testing Facilities
- Highway & Pavement Construction Quality Control
- Research & Academic Soil Mechanics Labs