

PRODUCT SPECIFICATION SHEET

Overview

Product Specification Sheet Overview

Earthiva is a leading manufacturer of high-performance Compressed Stabilized Earth Blocks (CSEB), dedicated to transforming modern construction through sustainable, earth-based building solutions. By integrating traditional soil knowledge with advanced engineering practices, Earthiva delivers durable, eco-conscious alternatives to conventional fired clay bricks and concrete masonry. Our kiln-free, low-carbon manufacturing process eliminates the need for coal-fired production and minimizes topsoil depletion, resulting in stronger, greener, and more responsible construction materials for the future of modern India.

Production Process

Step	Process	Quality Control
01	Soil Characterization	Gradation, Atterberg limits
02	Screening & Pulverization	<7mm particle size
03	Proportional Mixing	Volumetric batching
04	High-Pressure Compression	2000–2500 PSI (14–17 MPa)
05	Moist Curing	14–21 days @ >80% RH
06	Final Testing	UTM + water absorption

Technical Specifications

Physical Properties:

- **Dry Compressive Strength:** > 4 MPa (N/mm²)
- **Water Absorption:** < 10% (Better than clay bricks)
- **Density:** 1800 – 2000 Kg/m³
- **Dimensional Tolerance:** ± 1 mm
- **Thermal Conductivity:** 0.9 W/mK (Excellent insulation)

Standards Complied:

- IS 1725:2013 (Specification for Soil Based Blocks)
- Auroville Earth Institute Guidelines

Engineering Data Table

Parameter	Value	Standard
Dry Compressive Strength (28d)	4.0 – 10 + MPa	ASTM D2166
Wet Compressive Strength (24h soak)	≥3.0 MPa	IS 3495 (Part 3)
Water Absorption	≤10% by weight	IS 3495 (Part 2)
Bulk Density	1920 kg/m ³ ±5%	ASTM C20
Initial Rate of Absorption (IRA)	0.8 – 1.2 kg/m ² /min	ASTM C67
Dimensional Tolerance	±1 mm	IS 1725
Thermal Conductivity (λ)	0.52 – 0.68 W/m·K	ASTM C518

Comparative Matrix :

Attribute	Conventional Fired Brick	Aerated Concrete (AAC)	CSEB (This Product)
Embodied Energy (MJ/kg)	2.5 – 4.0	1.8 – 3.5	0.7 – 1.2
CO ₂ Emission (kg/1000 units)	1,200 – 1,800	600 – 900	80 – 150
Mortar Required	25 – 30% of wall volume	20%	10 – 12% (interlocking)
Surface Finish	Requires plaster	Requires plaster	Direct paint / exposed

Quality Checkpoints:

- Incoming soil: Particle size distribution + plasticity index
- During pressing: Density check every 100 blocks
- Curing: Temperature/humidity logging
- Dispatch: Random destructive sampling (1 per 500 blocks)

Packaging & Delivery:

- Stacked on reusable wooden pallets
- Shrink-wrapped for moisture control
- Standard order: 500 / 1000 / 2500 units
- Lead time: 25 working days post advance payment