

STABILITY CERTIFICATE

30-01-2026

1. The detailed engineering and structure design of the Proposed Construction of Residential Non-High Rise Group Development consists of 114 Blocks, Block 1 to 113: Ground +First Floor Totally 113 D/U, Block 114: (Amenity Block) - Ground Floor + First Floor with Swimming pool on the Ground level comprised in S. Nos. 177/1, 177/2, 177/3, 177/4, 177/5, 177/6, 177/7, 178/1A1, 178/1A2, 178/1A3, 178/1A4, 178/1A5, 178/1A6, 178/1A7A, 178/1B, 179/3A1, 179/3A2, 185/1A, 185/1B, 185/1C, 185/1D, 185/2A, 185/2B & 185/2C of Pongupalayam Village & Panchayat, Tirupur North Taluk, Tirupur District has been done by me/us based on the report of geotechnical investigation (soil test) done by GEOCARE ENGINEERING CONSULTANCY Report No: 092506 Dated: 20-sep-2025 and considering the functional requirement of the building.

2. It is certified that among other factors, the proposed building has been designed to resist earthquake. I/We have checked various parameters and found that the proposed building would be safe.

3. I/We further certify that:

(i) The minimum grade of concrete is M20

(ii) The design and analysis has been done using the code of practice for plain and reinforced concrete as per IS 456, design loads as per IS Codes No IS 456 and design of earthquake resistant structure as per IS Code No IS 1893 & IS-13920

4. The building will be safe and sound when used for the purpose for which it is designed.



Stamp and Signature

Er.P.Senthil Kumar.,M.E.,(Struct)

Structural Consultant

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Encl.: Structural Design Calculation

THE PROPOSED CONSTRUCTION OF RESIDENTIAL NON-HIGH RISE GROUP DEVELOPMENT CONSISTS OF 114 BLOCKS, BLOCK 1 TO 113: GROUND +FIRST FLOOR TOTALLY 113 D/U, BLOCK 114: (AMENITY BLOCK) - GROUND FLOOR + FIRST FLOOR WITH SWIMMING POOL ON THE GROUND LEVEL COMPRISED IN S. NOS. 177/1, 177/2, 177/3, 177/4, 177/5, 177/6, 177/7, 178/1A1, 178/1A2, 178/1A3, 178/1A4, 178/1A5, 178/1A6, 178/1A7A, 178/1B, 179/3A1, 179/3A2, 185/1A, 185/1B, 185/1C, 185/1D, 185/2A, 185/2B & 185/2C OF PONGUPALAYAM VILLAGE & PANCHAYAT, TIRUPUR NORTH TALUK, TIRUPUR DISTRICT.

GENERAL NOTES ON STRUCTURAL DESIGN

GENERAL

1.DESIGN BASIS

The design of footing is carried out based on frame analysis using design software

2. CODES AND STANDARDS

- **Structural Design Codes:**
 - IS 456:2000 – Plain and Reinforced Concrete Code
 - IS 800:2007 – General Construction in Steel (if steel used)
 - IS 875 (Part 1–5) – Loading Standards
 - IS 1893 (Part 1):2016 – Earthquake Resistant Design
 - IS 13920:2016 – Ductile Detailing of RC Structures

3. SOIL TEST REPORT

- Based on soil test report isolation foundation is adopted

4. Structural System

- **Framing System:** Reinforced concrete moment-resisting frame
- **Floor System:** RCC slab (two-way or one-way depending on span)
- **Foundation System:** Isolated footings / combined footings / raft foundation depending on soil conditions
- **Roofing:** RCC slab with waterproofing treatment

5. Loads Considered


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- **Dead Loads (IS 875 Part 1):**
 - Self-weight of structural elements (concrete density = 25 kN/m^3)
 - Floor finishes: $1.0\text{--}1.5 \text{ kN/m}^2$
 - Wall loads: based on thickness and material density
- **Live Loads (IS 875 Part 2):**
 - Residential rooms: 2.0 kN/m^2
 - Corridors/staircases: $3.0\text{--}4.0 \text{ kN/m}^2$
 - Balconies: 3.0 kN/m^2
- **Wind Loads (IS 875 Part 3):**
 - Basic wind speed as per location map
 - Terrain category: 2 (built-up area)
 - Height: $< 15 \text{ m}$ (low-rise)
- **Seismic Loads (IS 1893 Part 1):**
 - Seismic Zone: III
 - Zone factor (Z): 0.16
 - Soil type: [Hard/Medium/Soft]
 - Response reduction factor (R): 3
 - Importance factor (I): 1.0

6. Materials

- **Concrete Grade:** M20 (minimum for RCC structural members)
- **Steel Reinforcement:** Fe 500 HYSD bars
- **Structural Steel (if used):** E250 grade

7. Design Methodology

- **Load Combinations (IS 875 Part 5):**
 - $1.5(\text{DL} + \text{LL})$
 - $1.2(\text{DL} + \text{LL} + \text{WL/EL})$
 - $1.5(\text{DL} + \text{WL/EL})$
 - $0.9\text{DL} + 1.5\text{WL/EL}$

8. Serviceability Criteria

- **Deflection Limits:**
 - $\text{Span}/250$ for beams and slabs
- **Crack Control:** As per IS 456 provisions

9. Foundation Design Basis

- **Soil Investigation:** Minimum 2 boreholes per block
- **Safe Bearing Capacity (SBC):** As per geotechnical report
- **Settlement Criteria:** $\leq 25 \text{ mm}$ total settlement

10. Durability & Detailing

- **Cover to Reinforcement:**

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- Footings: 50 mm
- Columns: 40 mm
- Beams: 25 mm
- Slabs: 20 mm
- **Ductile Detailing:** As per IS 13920 for seismic zones III and above

11. Quality Assurance

- **Material Testing:** Cement, steel, aggregates as per IS codes
- **Concrete Control:** Slump test, cube test
- **Inspection:** Stage-wise approval during construction

The Structure will Safe and Sound when used for purpose which it is designed

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