

# Your Concrete is Leaving Strength on the Table.

Fortis is a graphene solution for concrete — independently tested across M20, M30, and M40 grades, delivering 20–28% compressive strength improvement with no process change and no additional equipment.

- ✓ NABL-Certified Results
- ✓ 2 Indian Patents
- ✓ M20 / M30 / M40 Tested
- ✓ No Equipment Change
- ✓ Make in India



## Compressive Strength — 28-Day NABL-Certified Results

| Concrete Grade    | Without Fortis | With Fortis | Improvement | Curing  |
|-------------------|----------------|-------------|-------------|---------|
| M20 (RCC)         | 25.0 MPa       | 30.0 MPa    | +20%        | 28 days |
| M30 (Structural)  | 32.1 MPa       | 40.7 MPa    | +27%        | 28 days |
| M40 Microconcrete | 40.25 MPa      | 51.3 MPa    | +28%        | 28 days |

Source: Global Lab & Gayatri Geotechnic Research LLP — NABL Accredited. Tests per IS 456:2000, IS 9013:1978.

## Why It Matters On Site

**36.9 MPa at 7 days**  
Strip shuttering earlier.

M30 concrete reached 36.9 MPa at just 7 days — 23% above control. Earlier design strength means earlier formwork removal, reduced equipment rental, and faster project cycle.

**Up to 40% lower permeability**  
Fewer cracks. Longer life.

rGO bridges micro-cracks at the nanoscale and densifies the cement matrix — reducing water and chloride ingress that causes cracking and structural deterioration over time.

**20–28% stronger at standard dosage**  
More strength. Same process.

Fortis adds at 0.8% by weight of cement — a fractional addition with no equipment change, no modified batching, and no increase in cement content. Higher performance, not higher cost.

**“For contractors, earlier shuttering removal and faster programme completion is often worth more than the material cost of Fortis itself.”**



### Crack Bridging

rGO platelets span micro-cracks in the cement matrix, resisting propagation under load and thermal stress.



### ITZ Strengthening

Functional groups on rGO bond chemically with cement hydrates at the aggregate interface — the weakest point in conventional concrete.



### Nucleation Acceleration

rGO acts as a nucleation site for C-S-H crystal growth — accelerating early hydration, producing a denser microstructure.

## Field Proof & Specifications

C5X CORROSION ZONE

### CASE STUDY — Gujarat Chemical Plant

Environment: C5X Corrosion Zone — Salt & Fluorine Manufacturing Facility, Gujarat. 20-year-old industrial building with severe rebar corrosion, concrete spalling, and structural cracking. Conventional repair mortars were inadequate.

#### Fortis-enhanced M40 microconcrete delivered:

- 51.3 MPa compressive strength — 28% above control
- Denser surface finish — reported by on-site engineers
- Enhanced chloride and fluorine barrier in extreme corrosion environment
- High early strength enabled minimal operational downtime

| Parameter     | Detail                           |
|---------------|----------------------------------|
| Form          | Aqueous graphene solution        |
| Base          | rGO — grade NG-C1                |
| Dosage        | 0.5–0.8% by weight of cement     |
| Particle size | D90 < 5 μm                       |
| Compatibility | OPC, fly ash, GGBS, micro silica |
| Shelf life    | 12 months sealed                 |
| Patents       | 2 granted — Indian Patent Office |
| Accreditation | NABL — ISO/IEC 17025             |

# Ready to Use Fortis for Your Project?

Trial quantities available. Technical datasheet on request.  
 Applications team support included.

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