TORONTECH


# RAPID FREEZE-THAW TEST CHAMBERS – ASTM C666 CONCRETE DURABILITY TESTING

# Rapid Freeze-Thaw Test Chambers | ASTM C666 Concrete Durability Testing

ToronRFTC™ Series Rapid Freeze-Thaw Test Chambers are advanced and fully automated systems designed for accurate concrete freeze-thaw testing, in accordance with ASTM C666 - Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing.

These chambers are essential for evaluating the freeze-thaw resistance and long-term durability of concrete, especially in cold climate applications where cyclic freezing and thawing can severely affect performance.

Available in three configurations, these concrete test machines provide scalable solutions for quality control labs, construction material testing centers, and academic research facilities.

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## Precise, Repeatable Freeze-Thaw Testing

The ToronRFTC™ Rapid Freeze-Thaw Test Chamber uses programmable temperature control to simulate repeated freezing and thawing cycles, a crucial test for evaluating the durability of concrete under thermal stress. The system maintains tight temperature uniformity and accurate cycle timing to ensure consistent, repeatable results every time.

## ToronRFTC™ Model Comparison

Model Specimen Capacity (100Ã—100Ã—400 mm) Antifreeze Volume Peak Power

**ToronRFTC™ 3** 10 specimens 60 liters 2.8 kW

**ToronRFTC™ 5** 16 specimens 80 liters 3.5 kW

**ToronRFTC™ 9** 28 specimens 120 liters 5.0 kW

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## Applications

1. Concrete freeze-thaw resistance testing
2. Evaluation of concrete durability under cold climate exposure
3. R&D in cement and concrete technology
4. Infrastructure materials testing (bridges, roads, pavements, dams)
5. Academic research and materials science education
6. Construction quality assurance and compliance testing

ToronRFTC™ Series Freeze-Thaw Chambers are the ideal solution for reliable, efficient, and standardized freeze-thaw testing of concrete. With models tailored to different sample capacities, these high-performance systems help ensure the long-term performance of concrete structures through advanced durability testing.

## Key Features

1. ASTM C666 Compliant â€“ ideal for standardized rapid freeze-thaw durability testing of concrete
2. Supports standard concrete specimens (100 x 100 x 400 mm)
3. Fully automatic freeze-thaw test cycle management
4. High-efficiency Danfoss compressor using eco-friendly R404 refrigerant
5. Stainless steel chamber and piping for long-lasting, corrosion-resistant performance
6. Fast freeze/thaw cycling with optimized evaporative condenser system
7. Digital microprocessor control system with real-time temperature monitoring
8. Automatic lid-lift mechanism for ease of operation
9. High-density thermal insulation for energy-efficient performance

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|---|---|
| Temperature Range | -20Â°C to +25Â°C (adjustable) |
| Temperature Uniformity | <2Â°C |
| Temperature Accuracy | Â±0.5Â°C |
| Display Resolution | 0.06Â°C |
| Cycle Time | 2.5â€“4 hours per full freeze-thaw cycle |
| Cooling Time | 1.5â€“2.5 hours |
| Heating Time | 1.0â€“1.5 hours |
| **Concrete Specimen Center Temperature** | |
| Freeze | -17 Â±2Â°C |
| Thaw | +8 Â±2Â°C |

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