



TORONTECH

FIRE RETARDANT COATING ACID ALKALI BATH



Fire Retardant Coating Acid Alkali Bath - ToronFT™ FR-CAAB

ToronFT™ FR-CAAB Fire Retardant Coating Acid Alkali Bath is a precision thermal bath instrument engineered for evaluating the acid and alkali resistance performance of sealing materials and fire retardant coating systems. Chemical resistance is a critical property for fire retardant coatings and sealants deployed in industrial and construction environments where exposure to acids, alkaline agents, or corrosive cleaning chemicals may occur.

The ToronFT™ FR-CAAB provides a precisely controlled temperature immersion environment, enabling standardized coating acid alkali resistance testing to be performed with high repeatability and accuracy. The chamber is designed for compliance with the standard requirements applicable to sealing materials, making it a reliable tool for product qualification and materials research.

APPLICATIONS

Fire Retardant Coating Acid Alkali Bath - ToronFT™ FR-CAAB Applications

The ToronFT™ FR-CAAB is applicable for acid alkali resistance testing in the following sectors:

- Fire retardant sealant and coating chemical resistance qualification
- Sealing material evaluation for exposure to alkaline or acidic environments
- Quality assurance testing of intumescent coatings in chemically aggressive service environments
- Research and development of chemical-resistant fire retardant coating formulations
- Compliance testing for building sealants and fire protection products exposed to cleaning agents or environmental chemicals
- Immersion testing for gaskets, seals, and joint fillers in industrial and commercial construction



Standards

The ToronFT™ FR-CAAB is designed to comply with the following internationally applicable standards for sealing material and coating acid alkali resistance testing:

- ISO 11431: Building construction: Sealants — Determination of adhesion/cohesion properties after exposure to heat
- ASTM C1087: Standard Test Method for Determining Compatibility of Liquid-Applied Sealants with Accessories Used in Structural Glazing Systems
- ISO 11600: Building construction: Jointing products — Classification and requirements for sealants
- ASTM C793: Standard Test Method for Effects of Laboratory Accelerated Weathering on Elastomeric Joint Sealants

FEATURES

Fire Retardant Coating Acid Alkali Bath - ToronFT™ FR-CAAB Key Features

- Intelligent PID microcomputer temperature controller with automatic calculation and tuning functions, providing accurate and adaptive temperature regulation for acid alkali resistance tests
- High-precision thermocouple sensor ensures instrument display accuracy of 0.1°C, with temperature fluctuation maintained within 0.5% of the maximum temperature setting
- Temperature range from normal ambient up to 50°C, covering standard acid and alkali resistance test conditions for coatings and sealing materials
- Excellent temperature uniformity within $\pm 2.5^{\circ}\text{C}$ throughout the bath chamber, ensuring consistent exposure of all test specimens
- Programmable time setting up to 999 hours, supporting long-duration acid alkali immersion tests
- Built-in water pump circulation mixing system ensures uniform distribution of test medium (acid or alkali solution) and consistent temperature throughout the bath
- Heater power of 1000 W provides efficient bath heating with responsive temperature control

- Power supply requirements: AC 220V (±10%) / 50 Hz; total machine operating power: 1500 W

THEORY & METHOD

Theory and Method

The ToronFT™ FR-CAAB evaluates coating acid alkali resistance by immersing test specimens in controlled-temperature acid or alkaline solutions for a defined test duration. The chamber maintains a precisely regulated temperature bath using an intelligent PID microcomputer controller with a high-precision thermocouple sensor, ensuring that the solution temperature remains within specified tolerances throughout the test.

Specimens are submerged in the test medium (acid or alkali solution) at the specified temperature and removed after the prescribed exposure period. Visual inspection, dimensional measurement, and mechanical property tests are then conducted to quantify the effect of acid alkali exposure on the fire retardant coating or sealing material. The built-in water pump provides continuous mixing circulation of the bath medium, ensuring uniform acid or alkali concentration and temperature distribution around all specimen surfaces.

TECHNICAL SPECIFICATIONS

Fire Retardant Coating Acid Alkali Bath - ToronFT™ FR-CAAB Technical Specifications

Parameter	Specification
Model	ToronFT™ FR-CAAB

Parameter	Specification
Product Name	Fire Retardant Coating Acid and Alkali Bath — ToronFT™ FR-CAAB
Temperature Control	Intelligent PID microcomputer with automatic calculation and tuning
Display Accuracy	0.1°C
Temperature Range	Normal ambient temperature to 50°C
Temperature Uniformity	±2.5°C
Temperature Fluctuation	Within 0.5% of maximum temperature
Time Setting Range	Up to 999 hours
Circulation System	Built-in water pump, mixing circulation mode
Heater Power	1000 W
Power Requirements	AC 220V (±10%) / 50 Hz (110V is also available)
Machine Operating Power	1500 W



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