

CEMENT COMPRESSION TESTER



TTCF-300/10kN Computer Control Compression-Flexural Testing Machine

Cement Compression Tester: TTCF-300/10kN Computer Control Compression-Flexural Testing Machine is designed for precise measurement and control, utilizing a high-precision digital servo valve with force closed-loop control.

It supports both equal-loading rate loading and constant-rate loading, ensuring high control precision and reliability. This machine is fully compliant with ASTM C109, ASTM C349, and EN 196-1 standards.

APPLICATIONS

The Torontech TTCF-300/10kN is a high-precision system for determining the compressive and flexural strength of cement, mortar, and concrete specimens in accordance with key international standards like ASTM C109 and EN 196-1. Its primary application is to provide the definitive data required for quality assurance, mix design validation, and material certification in any context where cementitious strength is a critical performance parameter.

This fundamental strength testing is essential for ensuring safety and quality in:

- **Cement Manufacturing:** For essential quality control to certify that every batch of cement meets its specified strength classification and regulatory requirements before it is sold.
- **Ready-Mix Concrete Production:** To validate new mix designs and perform routine quality assurance, ensuring that the concrete delivered to a job site will achieve the design strength required for the structure.
- **Civil Engineering & Construction:** Used in on-site or third-party testing laboratories to verify the strength of concrete and mortar being used in critical infrastructure like buildings, bridges, and dams, ensuring structural integrity and safety.
- **Materials Research & Academia:** As a primary research tool for developing and evaluating new cementitious materials, high-performance concretes, and innovative admixtures by providing precise, repeatable strength data.

FEATURES

Performance Characteristics of TTCF-300kN Cement Compression Tester - Flexural Testing Machine

(A) Hydraulic System

- The machine utilizes a double-cylinder system for high control and measurement precision.
- Hydraulic oil is driven through a high-pressure pump, passing through one-way valves, high-pressure oil filters, and pressure valves before entering the cylinder.
- A computer sends control signals to the servo valve to regulate flow, achieving constant velocity test force control.

(B) Force Measurement System

- Equipped with a high-precision amplifier and A/D converter for real-time load, peak, loading speed, and intensity display.
- Utilizes PID closed-loop control for constant speed loading with real-time loading curve display.
- Features an automatic interval timer and continuous testing capability.
- Allows for flexible and convenient test result querying and printing.

(C) Control and Measurement Systems

- Integrates advanced pressure testing machine control technology with a high-precision full-digital servo closed-loop control and measurement system.
- Capable of constant load rate loading, constant stress loading, and maintaining test force.
- Features high control precision and reliability, with multi-layer protection against overload, overcurrent, overvoltage, undervoltage, overspeed, and limit scenarios.
- Includes specialized monitoring and control software for statistical and processing of test data.

- Displays real-time force and time parameters dynamically, with test curve output and reporting capabilities.

TECHNICAL SPECIFICATIONS

ITEM	Compression	Flexural
Max. Test Force	300kN	10kN
Test Measurement Range	20kN-300kN	1-10kN
Test Force and Relative Error Value	≤±1%	≤±1%
Upper and Lower Compression Plate Space	250mm	190mm
Max. Piston Stroke	80mm	60mm
Double Column Space	220mm	180mm
Compression Plate Size	φ160mm	φ160mm
Motor Power	Three phase four wires 380V 50Hz, 0.75KW	
Overall Dimension (mm)	1420*475*1350	
Weight	450kg	

Main Configuration		
Item	Qty	Remarks
Main Unit	1 set	Includes double cylinder, motor, pump, servo valve
Computers	1 set	Lenovo
Printers	1 set	Inkjet

Main Configuration		
Control and Measurement Systems	1 set	
Force Sensor	1 pc	
Electric Control System	1 set	
Cement Bending Fixture	1 set	For cement standard sample 40*40*160
Upper and Lower Compression Plate	1 set	
User Manual/Certificate/Packing List	1 set	



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