

# Model 1210 Crush Tester

Emerson's newly-redesigned **Model 1210 Crush Tester** is a robust, rigid support, single column type compression tester designed to determine the compressive strength of various material samples for many industries (such as paper, corrugated, fiber, polymers, ceramics, and metals). Compressive force is provided by two rigid platens. The bottom platen is driven and the top platen rests on four certified load cells to guarantee the most accurate test results. The Model 1210 offers fixed parameter tests to perform standardized TAPPI testing for ECT – PAT – FCT – RCT – CMT and CFC. The machine includes a high-speed onboard computer with Windows Operating System and a color, touch-screen flat panel monitor. The Model 1210 quickly and reliably captures test results, stores data and groups it for statistical analysis and allows averaging, standard deviation, histograms, and control charts.



**NEW!** Testing, Reporting, Graphics & Performance Enhancements  
*See last page for details.*

## New Features & Improvements

- **TOUCH SCREEN:** Run your machine via touch buttons on-screen with the new, nearly-flush display.
- **RECESSED CONSOLE:** Shielded from glare and recessed for protection, the heavy-duty console is more at home in industrial production environments.
- **WHISPER QUIET:** New noise dampening enclosure reduces machine operation noise to near-inaudible levels, perfect for the lab.
- **DOUBLE SHIELDING:** Enclosure panels incorporate embedded dual-plane RFI shielding for advanced noise immunity.
- **ENHANCED G-SHOCK CAPABILITY:** New electronic layouts with enhanced support, plus increased enclosure mechanical strength, allow this unit to survive greater G-Shock during moving or shipping.
- **INCREASED STAGING AREA:** The top of the Model 1210 has been maximized to allow more area for test staging.
- **VIBRATION RESISTANCE:** A greatly increased base mass increases external vibration resistance of test mechanisms.
- **CONSOLIDATED ELECTRICAL RACK:** The new Model 1210 design allows the electrical rack back panel to swing down, exposing all electrical components for easy troubleshooting and maintenance. The consolidated design allows complete replacement of the electrical rack to be shipped to the end user for fast replacement in the field.
- **EXPANSION SUPPORT:** Additional support added for USB Wi-Fi Dual Band Ethernet (purchased separately) and 10/100 Wired Ethernet bulkhead connector (planned future expansion). USB Inkjet Printers are supported up to dotNET4.5 (low resolution printers via basic printer drivers).
- **DESIGN IMPROVEMENTS:** Components are updated to take advantage of the latest CNC capabilities and component materials for improved accuracy and machine longevity without cost increases.
- **STREAMLINED MANUFACTURING:** New streamlined process improves manufacturing turn-around time.

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## Features

- Windows Operating System
- Color, flat panel, touch-screen monitor
- Test-result tabular report lists each test result and the statistical analysis for the group of samples tested in an easy-to-read format
- Data logging capabilities add test curve output files as CSV, allowing you to see the force vs. deflection curve for each test
- Graphics and performance enhancements
- Increased dynamic response allows additional test specimens including glass, fiber, metals, and other extremely brittle samples
- Sample rate has increased to 5,000 samples per second, giving the machine a higher sensitivity and response
- Additional user settings to help with setting up printers and installing peripheral programs
- Data management is easy. Users can create their own specific identification numbers and view data at any time. Stored data can be re-displayed or printed as a table, histogram, or a control chart
- Platen opening limits are adjustable by user
- Select specific fixed parameter TAPPI specified tests (ECT, PAT, FCT, RCT, CMT, and CFC), eliminating operator error PLUS User-definable tests: Peak at Fallback, Peak at Deflection, and Force at Deflection
- When test stops the platen moves up automatically. There are two positioning speeds: fast and slow
- Scaled output converts measured force values to the appropriate TAPPI report units
- Automatic Zero
- RS-232 output data that can be used in a third party software, such as Microsoft Office/Excel
- Built in software load cell protection and adjustable platen positioning for fixture and machine protection
- USB pen drive, calibration restoration, and updates can be installed easily and used to back up data
- Calibration: Force, resolution, and speed are password protected but can be changed easily in the software calibration section of the program which allows on-site calibration service
- Precise flatness and parallelism is held within .0005"
- Units available in Empirical or metric
- Calibration Test Certificate provided per ASTM E 74
- Operation Manual

## Units of Measure Supported

- LBS (LBF)
- PSI
- PLI
- PLF
- N
- Kpa
- kNm
- N/mz



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## Safety Features

- Rapid travel load applied: motor stops when 10LBS applied while platen closing at rapid speed
- Force and Deflection user limits
- Absolute force machine limit
- Watchdog failure kills motion
- Database verification and automatic rebuild and cleanup prevents corrupt data from creating unsafe conditions
- Physical Limit Rod travel limits
- Encrypted registry entries prevent machine tampering that may cause unsafe conditions
- Extensive machine guarding for safe operations
- Enhanced fault detection and monitoring

## Statistical Results

- On screen and printed CONTROL CHART
- On screen and printed HISTOGRAM
- On screen and printed Statistical Report (text)
- Statistical grouping by TEST TYPE + user defined IDENT NUMBER
- Database backup for off-machine use
- Test charting per test created automatically when USB pen drive attached for detailed test analysis of force vs. deflection curves
- RS232 data logging for external data collection and analysis packages such as ASI DataMytez

## Specifications

- Capacity 0 – 1000 lbs
- Platen Size 6" x 6" x 3.125"
- Platen Speed 0 to 2 in/min
- Rupture Sensitivity 0 to 99%
- Accuracy .15% of reading or .05% of full scale
- Dimensions 22.0W X 17.0D X 24.5H inch, 589W X 432D X 622H mm
- Weight 120 lbs
- Power 120VAC or 220VAC (customer please specify)  
50/60Hz (120VAC US PC Cable supplied by default, compatible with regional/voltage variants)

## Accessories/Options

- ECT Holding Fixture
- Ring Crush Test Fixtures
- Flat Crush Test Fixture
- A, B, C, & E Flute Pin Adhesion Fixtures, Selective
- A, B, C, & E Flute Pin Adhesion Fixtures, Non-selective
- Custom Spaced Pins Made to Order
- Custom Fixtures Made to Order
- Manual & Pneumatic Sample Cutters



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# Enhancements/Software for Model 1210

**Own an older Model 1210?** Contact Emerson Apparatus's sales team about our Complete Electronics and Software Upgrade Package.

- ▶ **COMES STANDARD** with high-speed computer, Windows Operating System, color flat panel touch-screen monitor, and fast hard drive for mass storage
- ▶ **TEST-RESULT TABULAR REPORT** lists each test result and the statistical analysis for the group of samples tested in an easy-to-read format
- ▶ **DATA LOGGING CAPABILITIES ADD TEST CURVE OUTPUT FILES AS CSV**, allowing you to see the force vs. deflection curve for each test
- ▶ **GRAPHICS AND PERFORMANCE ENHANCEMENTS** included
- ▶ **INCREASED DYNAMIC RESPONSE** allows additional test specimens including glass, fiber, metals, and other extremely brittle samples
- ▶ **SAMPLE RATE** has increased to 5,000 samples per second, giving the machine a higher sensitivity and response
- ▶ **ADDITIONAL USER SETTINGS** to help with setting up printers and installing peripheral programs

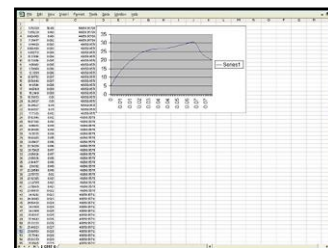
## Sample Screens

**Test Settings Screen:** From the main menu, you can select a specific test type that has been pre-programmed with the TAPPI Specifications. This screen shows a "Peak at Fallback" test where buttons for changing test parameters are available. For ECT and all other preset TAPPI tests, parameters are pre-determined and you can assign a specific numeric ID to the product being tested.

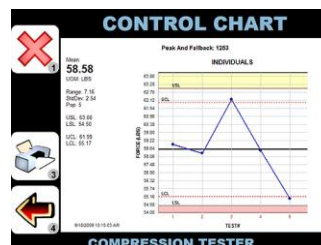
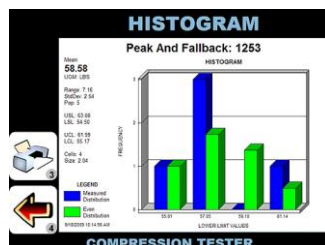


**Operate Screen:** This screen shows the machine running a test. It includes actual force, peak force, actual deflection, and peak deflection, selected squaring force, selected speed, and indicators showing the status of upper limits, lower limits, and that the motor is enabled.

**CSV:** Download a ".CSV" file to a pen drive and use Microsoft EXCEL (see screen image at right) to plot the data points captured throughout the entire test as an XY curve showing force vs. deflection.



**Results – Histogram – Control Chart Screens:** These screens show test data in **text form** (including peak force and deflection); in **bar form**; and as **test data points connected by lines** to show whether the product being tested is within the set control limits.



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