



**AUTOMATIC FLEXURAL
TESTING MACHINE**



CONCRETE

www.testmak.com

AUTOMATIC FLEXURAL TESTING MACHINE



PRODUCT MODEL

C5240/100	100 kN AUTOMATIC FLEXURAL TESTING MACHINE, 220-240 V 50-60 Hz
C5240/200	200 kN AUTOMATIC FLEXURAL TESTING MACHINE, 220-240 V 50-60 Hz
C5240/300	300 kN AUTOMATIC FLEXURAL TESTING MACHINE, 220-240 V 50-60 Hz

STANDARDS

Standards	EN 1338, 1339, 1340, 1341, 1343, 13748-1, 13748-2, 12390-5, 12390-6 BS 1881 ASTM C78, C293, C496
-----------	--

INFORMATION

Manufacturer	TESTMAK INS.LAB.MAK.SAN.VE TİC. PAZ. İTH. İHR. LTD. STİ
Country of Origin	TURKEY
Product Name	AUTOMATIC FLEXURAL TESTING MACHINE

AUTOMATIC FLEXURAL TESTING MACHINE

DESCRIPTION

The Automatic Flexural Testing Machines are range of 100, 200 kN and 300 kN capacity flexure testing machines have been designed for reliable and consistent testing of flexural test on standard concrete beams, concrete or natural stone kerbs, concrete paving flags, and natural stone slabs and tensile splitting test of concrete paving blocks. These flexure testing machines are the result of continuous research to upgrade the testing machines with latest technologies to conform to the latest standards EN 12390-5, EN 12390-6, EN 1338, EN 1340, BS 1881, ASTM C78, C293 and C496 in terms of its technical properties taking into account client requirements. These also meet the requirements of CE norms for health and safety of the operator.

Tests can be performed by either on TMC300 Unit or on a computer with using free software. The advantages of performing tests on computer with using software, such as reporting, graphical output, etc. Setting test parameters, including pace rate only required when the specimen type is changed. Pressing the START button on the control unit.

The machine automatically starts the rapid approach; switches the test speed after 1% of the load capacity of the machine and stops once the specimen failure. Automatically saves the test parameters and test results.

The Testmak range of Flexural Machines have the accuracy of Class 1 starting from 2% of the full capacity. Flexural test assemblies should be ordered separately.

LCD DATA ACQUISITION CONTROL SYSTEM

The Data Acquisition Control provides real-time graphical indication. Automatically determines the load rate in accordance with the international standards upon sample type. With the STOP and START buttons, the test will automatically stop or start.

LCD Data Acquisition Control System has different units are available (kN / kgf / lbf). Can do Automatic Load Rate upon Sample Type. Total load and also per area are given. and has real time graph indication. Stops Automatically, when Test is completed. Test results can be send printer to with software or from the thermal printer. Can do calibration easily from 5 points. Manual Control is available. Computer and printer are not included in the price.

AUTOMATIC FLEXURAL TESTING MACHINE

TECHNICAL SPECIFICATIONS

Product Code	C5240/100	C5240/200	C5240/300
Capacity	100 kN	200 kN	300 kN
Class 1 Range	4-100 kN	4-200 kN	6-300 kN
Ram Travel	100 mm	100 mm	120 mm
Max Vertical Clearance Between Rings	425 mm (without accessories)	425 mm (without accessories)	425 mm (without accessories)
Max. Horizontal Clearance	640 mm	650 mm	650 mm
Max. Clearance Between Lower Rollers	900 mm	900 mm	900 mm
Piston Diameter	110 mm	160 mm	200 mm
Max. Working Pressure	315 Bar	315 Bar	315 Bar
Oil Capacity	18 Liters	18 Liters	18 Liters
Power	1100 W	1100 W	1100 W
Dimensions	1260x950x1200 mm	1370x950x1240 mm	1450x950x1260 mm
Weight	370 kg	450 kg	550 kg

AUTOMATIC FLEXURAL TESTING MACHINE

Data Acquisition Control

Technical Specifications

- 3 universal analog input sockets (ADC)
- Each analog input with 18 bit precision (1/256000)
- 1 replacement analog input
- A total of 4 analog high-precision measuring capacities
- 2 analog output sockets (DAC)
- Analog outputs generate a 0-10V DC output signal
- Motor speed control devices, servo valves with this output signal, proportional valves, etc. reference signal is produced.
- PULSE / DIR outputs (PULSE / DIR / ENA) to control the servo and stepper motor drives
- 5 digital outputs for general purpose (can pull relays and control different electrical units)
- 5 digital inputs for general purpose (receives and evaluates input signals like limit contacts from the environment)
- Potentiometer input (reference signal input for calibration and remote control)
- 2 RS232 serial communication signal outputs (communicates with computers)
- It also connects to motor drives via serial communication via MODBUS connection
- USB communication signal output (communicates with computers)
- Connects to local networks and the Internet with Ethernet 10/100 network connection output (optional)
- Connects to portable devices via Bluetooth wireless connection (optional)
- 500 test results can be stored in internal memory
- Due to the SD (memory) card connection, a large number of test results can be stored in the device memory (40,000 test results).
- In addition, the results can be taken from the device memory and transferred to the computer as an Excel table. (Optional)
- Color TFT display supports 16 inch and 7 inch 800 screen sizes, supports 16M colors and supports 800x480 pixel screen resolution
- Resistive touch screen allows easy operation of device functions by touching the screen
- Access to frequently used functions with 6 membrane keypads
- The industrial standard operates with 24V DC supply voltage. Built-in voltage filter and regulator protects against input signal fluctuations
- Sensor modules are compatible with loadcell (load cell), pressure sensor (4-20 / 0-20 mA), potentiometric distance sensors, strain washers, thermocouples and all kinds of mV output sensors.
- Provides precise calibration with multi-point calibration (up to 10 points)
- Setting and calibration menus are password protected and prevent unauthorized use
- Allows testing with a computer or device
- There are many test sample information screens and test methods in the device memory and tests can be performed easily
- Different menu languages can be selected via the device via language support

AUTOMATIC FLEXURAL TESTING MACHINE

- Speed control algorithm is closed loop PID control and all parameters can be adjusted on user side.
- The device can switch between one-touch load and deformation control modes Cihaz farklı makinelere kolayca adapte edilebilir ve en uygun kontrol sağlanır
- The graphical field that visualizes the test results on the screen has the ability to change the scale automatically and automatically adjusts the optimal scale as the values change
- Firmware updates can be made via USB input. In addition, via the computer allows remote or internet update.

When energized to the device, on the digital indicator display will show the following information.

TEST STANDARDS


EN 12390-4, ASTM C39, EN 196-1	EN 12390-4, ASTM C78, 293
COMPRESSION TEST ON CUBE AND PRISM SAMPLES	4 POINTS FLEXURAL TEST ON BEAM SAMPLES
EN 12390-4, ASTM C39	EN 12390-6
COMPRESSION TEST ON CYLINDER SAMPLE	SHARE STRENGTH TEST ON CONCRETE SAMPLES
EN 12390-5, EN 196-1	TS 2428, EN 1338
3 POINTS FLEXURAL TEST ON BEAM SAMPLES	SHARE STRENGTH TEST ON PARQUET SAMPLES

Navigation icons: Left arrow, Home, Scissors, Right arrow

Specimen Dimensions

Beam Sample Dimensions

Channel / Unit nr:	0.00
Width (mm):	0.00
Length (mm):	0.00
Height (mm):	0.00
Distance Between Supports (mm):	0.00




Navigation icons: Left arrow, Home, Save, Right arrow




AUTOMATIC FLEXURAL TESTING MACHINE

Specimen Dimensions

Beam Sample Dimensions

Channel / Unit nr:	0.00
Width (mm):	0.00
Length (mm):	0.00
Height (mm):	0.00
Distance Between Supports (mm):	0.00











Specimen Dimensions

Concrete Sample Dimensions

Channel / Unit nr:	0.00
Length (mm):	0.00
Diameter (mm):	0.00



AUTOMATIC FLEXURAL TESTING MACHINE

Specimen Dimensions

Concrete Paving Sample Dimensions

Channel / Unit nr:	0.00
Length (mm):	0.00
Thickness (mm):	0.00



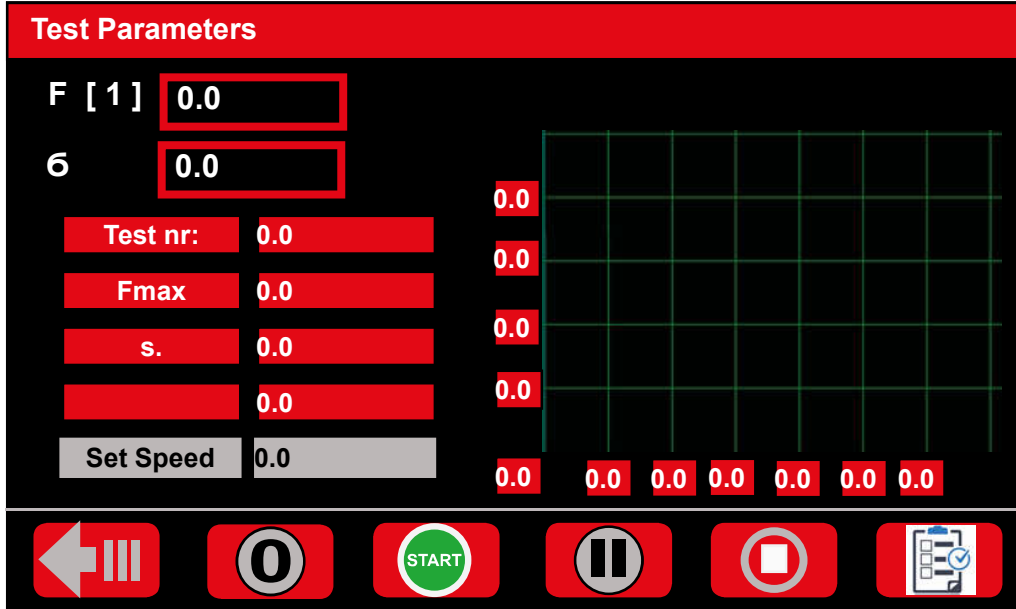
Specimen Dimensions

Border Sample Dimensions

Channel / Unit nr:	0.00
Width (mm):	0.00
Length (mm):	0.00
Height (mm):	0.00
Distance Between Supports (mm):	0.00



AUTOMATIC FLEXURAL TESTING MACHINE



Start the Test Pause on Load End of test

Start the Test

Press (START) to start the test. First, the device performs a bit of fast loading up to the boot value. When the boot value is reached, the speed is automatically set to the test speed level and kept constant at this level until the end of the test.


Pause on Load

If you want to stabilize the load at any load level during the test (PAUSE), press the hold button. In this case, the load is fixed at the load value level when the hold button is pressed and the device starts to wait. If this button is pressed again, the load will resume.

Stop on Load

The device automatically terminates the test when the condition specified for the end of the test occurs.

This condition is usually a decrease in the load as a result of the breakage of the test specimen, but sometimes the test can be completed when a certain load or deformation value is reached.

The user can also end the test at any time by pressing the STOP key at any time  (STOP). The unit automatically terminates the test to protect the machine and the sensors when the device detects that the specified loading capacity has been reached.

AUTOMATIC FLEXURAL TESTING MACHINE

Test Results

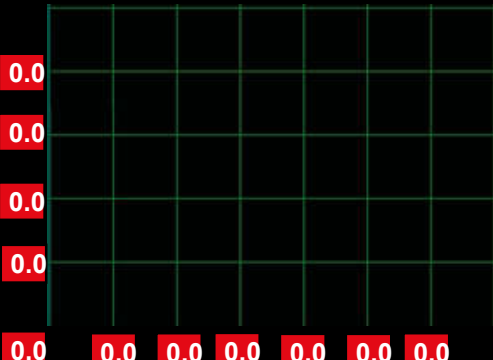
The test results are saved as a table in the device memory. To access this table, press the test button on the test screen. In this case, the test results are displayed.

Test Parameters







F [1]

6

Test nr:	0.0
Fmax	0.0
s.	0.0
	0.0
Set Speed	0.0



0.0
0.0
0.0
0.0
0.0
0.0
0.0














Test Results

When the test results are displayed in a table, the test result is displayed on each page. Use the up / down arrow keys to scroll through the pages. This allows switching between 500 test results in the device memory.

Test Results 1 Search

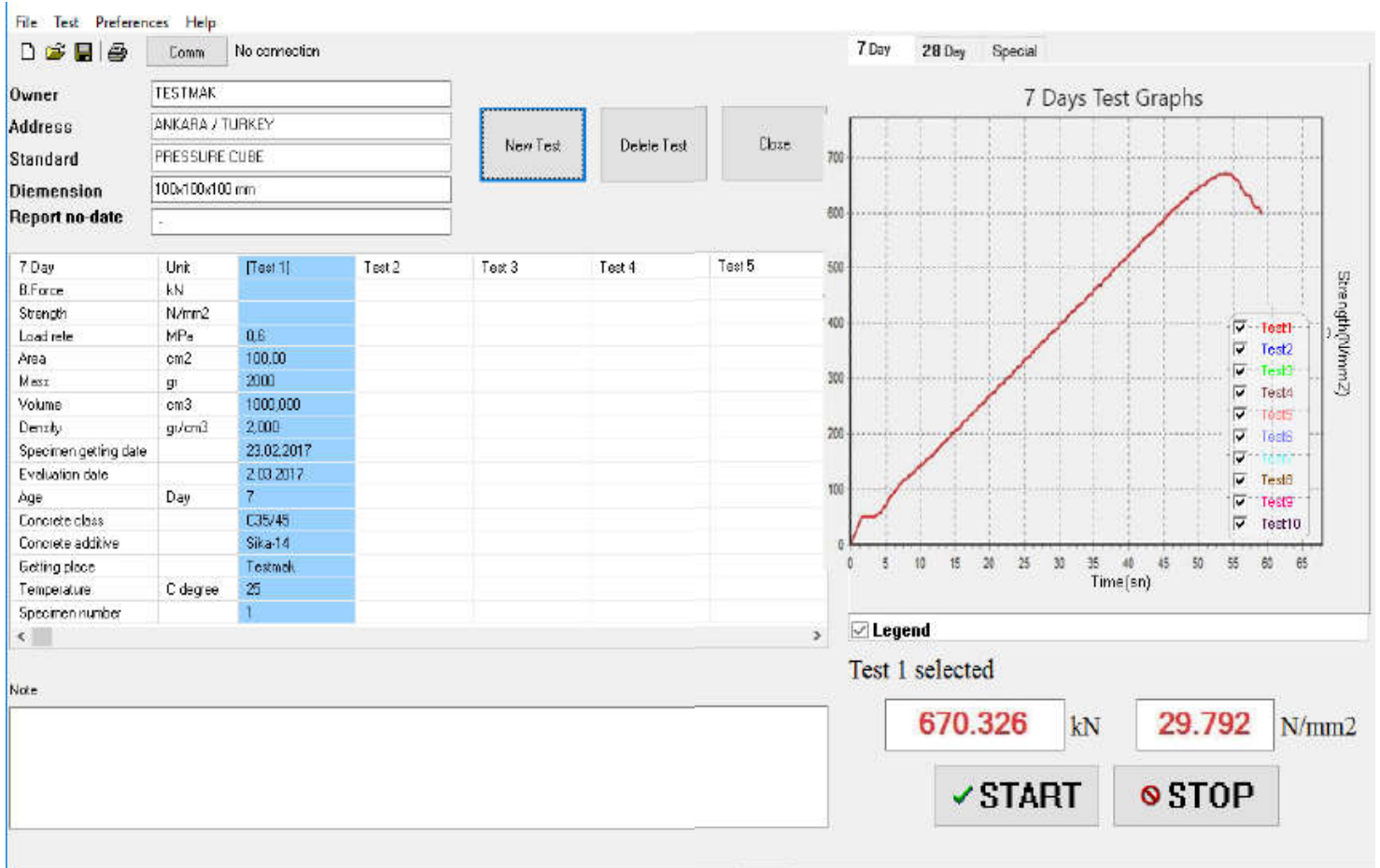
No	Sample	Fmax	6 (Mpa)	(s.)

AUTOMATIC FLEXURAL TESTING MACHINE

SOFTWARE

The tests and calibration can be done and monitored with a computer by connecting it to the machine. LCD Control unit can connecting with RS232 or USB port to the machine. Using the state-of-the-art software provided by TESTMAK with the machine will help performing and managing the tests in a very easy and fast way. By performing the tests via computer, the results can be saved and recalled when required. Reports can be generated automatically by the software and sent to printer.



The screenshot displays the TESTMAK software interface. On the left, there is a menu bar (File, Test, Preferences, Help) and a toolbar with icons for file operations and a 'Comm' button. Below this, there are input fields for 'Owner' (TESTMAK), 'Address' (ANKARA / TURKEY), 'Standard' (PRESSURE CUBE), 'Dimension' (100x100x100 mm), and 'Report no-date'. A 'New Test' button is highlighted with a blue dashed border. Below these fields is a table with columns for '7 Day', 'Unit', and 'Test 1' through 'Test 5'. The '7 Day' column contains various test parameters such as 'B.Force', 'Strength', 'Load rate', 'Area', 'Mass', 'Volume', 'Density', 'Specimen getting date', 'Evolution date', 'Age', 'Concrete class', 'Concrete additive', 'Getting place', 'Temperature', and 'Specimen number'. The 'Unit' column lists units like kN, N/mm², MPa, cm², gr, cm³, and g/cm³. The 'Test 1' column contains values for each parameter. Below the table is a 'Note' field.

On the right side, there is a graph titled '7 Days Test Graphs'. The graph shows 'Strength (N/mm²)' on the y-axis (ranging from 0 to 700) and 'Time (sn)' on the x-axis (ranging from 0 to 65). A red curve represents the test results, showing a peak strength of approximately 670 N/mm² at around 55 seconds. A legend on the right side of the graph lists 'Test1' through 'Test10' with checkboxes. Below the graph, there is a 'Legend' section with 'Test 1 selected' and two large buttons: 'START' (with a green checkmark) and 'STOP' (with a red stop sign). Above these buttons, the current test results are displayed: '670.326 kN' and '29.792 N/mm²'.



TM TEST MAK
MATERIAL TEST EQUIPMENTS

Telephone : +90 312 395 36 42
Fax : +90 312 395 36 43

Web : www.testmak.com
E-mail: info@testmak.com

Koca Sinan Industrial Sites 1183 Street No: 40
06370 OSTIM / ANKARA / TURKEY