Article No. S18502

Stand Alone

1 Crush Resistance Tester

For determining the compressive strength of cardboard and corrugated board.

For:

✓ BOARD

✓ ProbeNet-capable

MOST IMPORTANT BENEFITS:

- ✓ **Robust construction with two frictionless spindles**
- ✓ **Easy operation via touch screen**
- ✓ **Pressure plates with frictionless guidance guarantee plan parallelism**
- ✓ **Testing force up to 10.000 N**

FRANK-PTI
QUALITY TESTING INSTRUMENTS
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PRODUCT DESCRIPTION

The crush tester has been specially developed for crush tests on various materials (paper, board, etc.) and is impressively simple to operate. Its robust construction and two frictionless spindles guarantee high measurement accuracy even under very heavy loads. The platens included are specially constructed to ensure the least possible deviation from the parallel.

There are sample holders for different test procedures available as options. The unit is controlled via a touch screen where the individual testing methods can be selected and values and curves are displayed. To avoid wear to the touch screen the start and stop buttons are located separately. The crush tester is equipped with the FRANK-PTI standard connector.

TEST DESCRIPTION

The sample is placed, with or without sample holder depending on test procedure, between the plates. The appropriate test program is selected on the touch screen. The platens automatically travel to the correct start position. Pressing the start button causes the platens to compress the sample at a preset speed.

On reaching the preset test criteria (depending on the test procedure, breaking of the sample or a preset distance) measuring stops and the platens automatically travel back to the start position. The test results are displayed both numerically and graphically on the touch screen. If more than one run of one of the two test series (MD/CD) is carried out they can be statistically compared and displayed as ratios.

also available: 4-point-bending bridge

TECHNICAL DATA

DEVICE / INSTRUMENT

- Robust construction with two frictionless spindles
- Slopes and values displayed on the graphical display
- The plates automatically return to the initial position after the test
- Torsional stiff, heavy design
- Manually adjustable limit switch

APPLICABLE STANDARDS

DIN EN ISO 3035, 3037, 7263
ISO 12192, 13820, 5628
TAPPI T809, T811, T821, T822, T825, T829, T838, T839, T843

*more standards on request

MEASUREMENT

Test space dimension:	L x W x H
Version short:	190 x 120 x 320mm (without tools) 125 x 120 x 110mm (with pressure plates)
Version long:	190 x 120 x 700mm (without tools) 125 x 120 x 490mm (with pressure plates) *final test space determined by used tools
Test speed:	1-300mm/min
Test force:	1 N - 5kN / 1-10kN
Max. travel way:	depending on load cell and tools
Force resolution:	0,1 with 5-10kN
Accuracy:	+- 1% depending on the load cell

CONNECTIONS

Power supply:	230V/50-60Hz
Water:	no
Compressed air:	no

DATA

RS232:	Data output
Ethernet:	Data output / MQTT
USB:	Updates / Service / Printer

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Graphical evaluation in real time

Control via mounted large display

Pressure plates with frictionless guidance

DIMENSIONS

Version short	**L x W x H**
S185020000/2	450 x 560 x 670 mm
Version long	
S185020001/3	450 x 560 x 1050 mm
Weight:	net/gross
Version short	115 kg
S185020000/2	141 kg
Version long	120 kg
S185020001/3	162 kg

ARTICLE / MODELS

S185020000	Version short 5kN
S185020001	Version long 5kN
S185020002	Version short 10kN
S185020003	Version long 10kN

* more models and accessory on request

S185021020	Load cell 5kN
S185021021	Load cell 10kN
S185021022	Load cell 200N
S000000136	Extension Modul USB Printer (for Post script and PCL printers) for printing results directly from the device
S406900001	ProbeNet software with one device license *requirements and information on request

Recommended accessories:

RCT- appliance	To be used with pressure plates
S185021001	Set with 3 discs
S185021002	Set with 9 discs

*single inlay discs on request

ECT/CLT- appliance	To be used with pressure plates
S185021003	Blocks according to DIN53149
CCT- appliance	To be used with pressure plates
S185021004	CCT acc. TAPPI T843, A-flute
S185021024	CCT acc. TAPPI T843, B-flute
S185021025	CCT acc. TAPPI T843, C-flute
S185021026	CCT acc. TAPPI T843, D-flute
S185021027	CCT acc. TAPPI T843, E-flute
PAT- appliance	To be used with pressure plates
S185021006	PAT flute A acc. TAPPI T821
S185021007	PAT flute C acc. TAPPI T821
S185021028	PAT flute E acc. TAPPI T821
S185021009	PAT flute B acc. TAPPI T821 Please give us the exact distance of your flutes peak to peak to avoid mistakes.
SQT- appliance	Without pressure plates
S185021023	Groove quality TAPPI T829

4-Point bending appliance

S818381028 4-point bending appliance
S818381042 Load cell 100N
Compatible with long version 5 or 10kn

Sample preparation

S403100016	Sample punch ‘Punch and Die’ 6“x0,5“
S409200000	ECT-Sample Saw

CRUSH TEST METHODS

Ring Crush Test (RCT)
To determine ring crush resistance.

A 152.4 x 12.7 mm paper or board sample prepared with the strip punch is inserted, long edge uppermost, into the sample holder and placed in the crush tester. Different sample holders are available for different material thickness.

In the RCT test the test strip is exposed to compression until it buckles. The force measured indicates how much force is required to finally break them.

Sample holder for the Ring Crush Test (RCT)

Concora Crush Test (CCT)
To determine the crush resistance of flutes.

A 152 x 12.7 mm sample prepared with the Concora fluter is placed in the sample holder of the crush tester with the long edge uppermost. Different sample holders are available for different flute sizes.

In the CCT test the flute is exposed to compression on the long edge until it buckles. The force measured indicates how much force is required to break the fibres.

Sample holder for the Concora Crush Test (CCT)

Edge Crush Test (ECT)
To determine the edge crush resistance of corrugated board.

A 100 x 25 mm sample prepared with the ECT sample saw is placed long edge uppermost in the crush tester between two metal blocks. The two blocks prevent sideways slippage of the sample during the crush test.

In the ECT test the corrugated board is exposed to compression until it buckles. The force measured indicates how much force is required to finally break them.

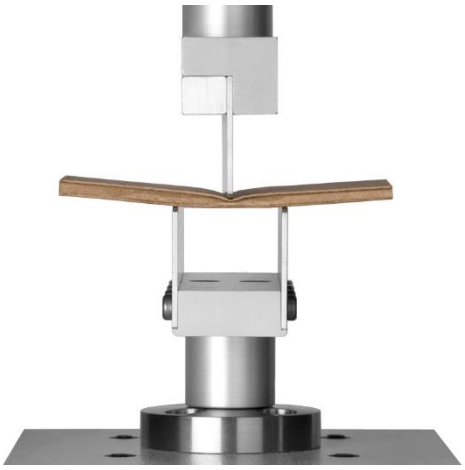
Sample holder for the Edge Crush Test (ECT)

SCORE QUALITY TEST (SQT)

To determine the score quality of corrugated board.

The prepared 25.4 mm sample is rilled, in MD or CD as required, and placed in the sample holder.

In the SQT test a compression bar applies pressure to the rilling line in the middle of the corrugated boards until this is pushed downwards at least 12.7 mm or the angle between the two sides reaches 90°. The force required is compared with the force used in a test with uncorrugated board. This procedure allows the score quality to be determined.



Holder for the Score Quality Test (SQT)

PIN ADHESION TEST (PAT)

To determine the adhesion bond strength of corrugated board.

The pins of the holder for the PAT test are inserted through the flutes of the corrugated board in such a way that the lower holder presses the flute upwards and the upper holder pushes the lower linerboard downwards. Sample holders are available for different flute sizes.

In the PAT test force is applied to the inner side of the linerboard until the bond is broken between the board and the adhesive. The measured values indicate how much force must be applied to break the bond between linerboard and flutes.

Holder for the Pin Adhesion Test (PAT)

CONCORA MEDIUM TEST (CMT)

To determine the crush resistance of Concora flutes.

The 152 x 12.7 mm sample prepared with the Concora fluter is glued with the aid of the third hand and placed between the platens of the crush tester.

In the CMT test the flutes are exposed to compression until they buckle. The force measured indicates up to which point the fibers recover or when they can no longer return to their original shape and how much force is required to finally break them.

Pressure plates for the Concora Medium Test (CMT)