

BQM, the Box-Quality-Measurement Tester

Fast, Portable, Non Destructive

Testing Machines Inc. introduces the BQM Tester, a new production tool to measure corrugated board medium quality and flute damage.

Damage to the flute during production is difficult to determine. Loss of box strength due to crushing occurs in nearly all box plant operations. Impacts on corrugated board during manufacturing and converting also contribute to loss of box strength. The BQM provides a means to measure the degree of damage allowing box makers to determine the source and cause of excessive corrugated board crush. Multiple steps can add up to more damage from:

- Original manufacturing process
- Print roller pressure
- Die-cutter blocks
- Creasing tools
- Transfer belts
- Corrugator roll condition

BQM, the Box Quality Measurement Tester

- **Fast, portable measurement of corrugated board medium (flute) damage from impact, pressure, top to bottom layer stresses.**
- **Evaluate the quality of the medium to qualify materials suppliers**
- **Evaluates strength properties as they relate to different basis weights of the medium**
- **Test results determine crushing of the flute at the nip during manufacturing**
- **Non-destructive measurement gets to the source of problems**

Principle of operation

An 8 inch (203 mm) square corrugated board specimen is placed on a foam support. The foam board has a 4 inch (100 mm) gap or slot in the center of the board. The corrugated specimen is placed over the gap and the BQM instrument is placed on top of the corrugated board.

The BQM has a piezo sensor mounted on a ring with a rubber cover which makes contact with the board directly over the 100 mm gap. When the test is started, a small DC motor creates a vibration on the board and the piezo ring measures the vibration of the corrugated board surface. The frequency at which the magnitude of the vibration is greatest represents the system resonance which is directly related to the stiffness of the corrugated medium.

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The BQM is very simple and quick to operate.

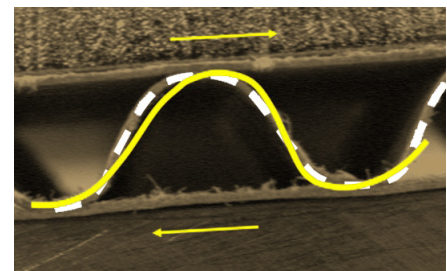


Diagram of forces acting to damage the corrugated flutes.



The BQM test operation with the foam support on the sides.



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