

## Solutions@Mecmesin

### Retort Packaging Peel Testing

#### Specification

The food packaging industry has long had concerns about pinholes, flex cracks, and leaks in the flexible materials and seals of retort packaging. A famous global food and drink maker needed to test the laminated retort packaging films that protect products such as their popular microwaveable stir-in pots.

Retort film is manufactured from multiple layers of laminate foil and withstands extensive thermal processing to heat seal and sterilise food contents. This packaging method provides the product with shelf-stability, while giving consumers convenience and protection from harmful microorganisms.

#### Solution

Since blown seals or breaches in film can lead to contamination or spoiling that could cause food poisoning, this maker needed to run peel tests to determine the following:

- tensile strength of pre-cut retort foils
- peel performance of finished packaging
- compliance of tensile and peel performance with in-house specifications

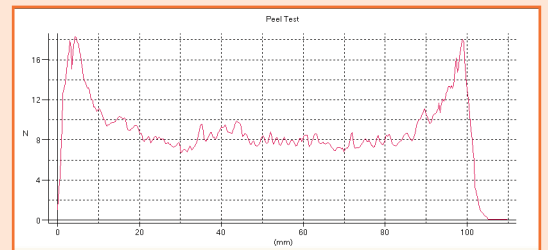
To obtain a reliable picture of the performance of their packaging seals, this maker selected a Mecmesin computer-controlled test system fitted with a custom-designed pull-peel table.

The Mecmesin system enables a 90 degree peel test. The pot-shaped container is held between four gripping pegs on a level base plate secured to an assisted pull-peel table, and the container's foil tab is held by a flat-faced jaw grip. The table moves the container horizontally, against the direction of peel, at the same rate as the grip pulls the foil tab upward (150mm/min). These synchronized motions cause the foil to be steadily peeled away at 90 degrees. The test stops when the foil is fully separated from the container. The advanced MultiTest 1-*i* system uses Mecmesin's Emperor™ testing software running on a PC to record and display the performance of the sample during the test. Peak force is identified and a detailed graphic display of each test is presented, enabling identification of defects and locations of adhesive failure.

The result is improved consistency in adhesive application and foil-container seal quality, which lessens the likelihood of customer grievance and wastage.



As the test is performed, results are immediately displayed on the PC screen



Retort pouch peel strength test graph

#### System

- MultiTest 1-*i* computer-controlled test frame rated to 1000N
- Assisted pull-peel table
- Flat-faced jaw grip
- Emperor™ software (running on a PC)

#### Other Solutions

- Tamper-evident rings
- Semi-automated top-load
- Packaging tension
- DVD removal force
- Coefficient of friction

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## packaging industry



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