

Solutions@Mecmesin

Thermoformed Plastic Packaging Hinge Tear and Pop-lock Engagement Force

Specification

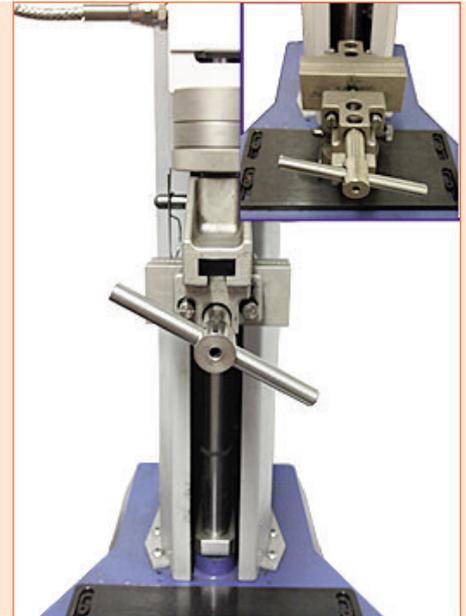
Par-Pak Europe Ltd manufacture thermoformed plastic containers and trays for packing, retail and distribution in the food industry. The containers are produced in a range of material specifications to provide tailored levels of stiffness, density, grease resistance, microwave safety, the ability to be frozen, plus moisture and gas barrier characteristics. Some designs of container have hinged lids (a folding seam) and also a means of securing the lid with a push-fit lock in the form of a circular button or rectangular bar. Ecological demands mean that the company is constantly challenged by its customers to refine manufacturing and design specifications – notably the production of thinner-gauge containers – whilst meeting stringent recycling legislation and migration criteria for its plastics. In response, the company actively seeks to quantify the performance implications of these design modifications through thorough comprehensive quality testing.



Lidded container with close-up of a bar button lock design

Solution

Mecmesin supplied Par-Pak with computer-controlled test stands and appropriate loadcells for the hinge tear and button compression tests. Emperor™ software programs control the custom test procedures. These can be revised or modified as testing requirements change, or to meet the needs of particular customers and their products. In the hinge tear test, serrated plane grips securely hold each half of the hinge pack, and the operator moves the crosshead to fully open the pack. The test is then started on the fully-extended hinge. The two halves are pulled at a constant speed until a break is automatically detected or a target load is recorded. Force measurements are displayed graphically on screen, and a pass or fail condition clearly indicated as the peak force is instantly compared with required tolerances. Using the Mecmesin system, the Par-Pak quality assurance team can guarantee meeting unique customer requirements to the same high standards as their standard products. By retaining test data for each product, the thermoforming process can be eliminated as a cause in any reported instances of failure, protecting the company from unwarranted supply chain costs.



Serrated 2-way plane grips firmly grasp tray and lid elements

System

- MultiTest 2.5-*i*
- 250 N intelligent loadcell
- 1 kN intelligent loadcell
- 2-way plane grip (serrated jaws)
- MultiTest 1-*i*
- 50 mm nickel-coated compression plate, QC adaptors

Testimonial

“Mecmesin were extremely helpful when we were looking to purchase new test equipment, this included demonstrations. Our equipment is calibrated annually by Mecmesin and I find their after-sales service to be exceptional.”

Darren Pell,
Quality & EHS Officer, Par-Pak Europe Ltd.

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packaging industry



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