



### THE BRIEF

Material reduction and greater sustainability were the key drivers behind this project: by bringing together the latest technology, in both light-weighting of the **PE** (Polyethylene) closure, plus the market introduction to the thinnest multi-layered **PET** (Polyethylene terephthalate) container.

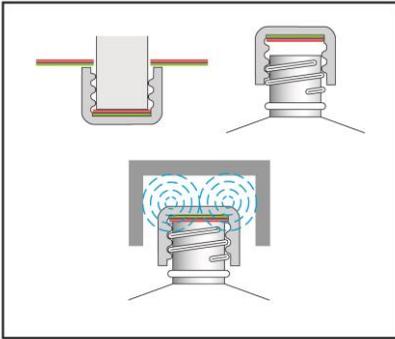
The perfect positioning and alignment of the hermetic induction seal was key to ensuring an even seal on the container and obtaining the maximum performance. Getting the marriage between the closure, container and hermetic seal was key to the success of this project.

BMi brief was to develop a low cost method of confirming that this 'perfect fit' had been achieved between all three parts, whilst establishing a solid benchmark for future quality checks.

### The Perfect Fit

To this end, BMi developed a procedure to encase all three parts in solid resin; giving the capabilities to cross section the mould at several desired positions around the circumference. In turn, allowing for a closer inspection to ensure the position of all three elements remained constantly in-line.

The resin moulds could then be stored for future quality references, so if any of the parameters were to change in manufacture, a production standard base-line existed.

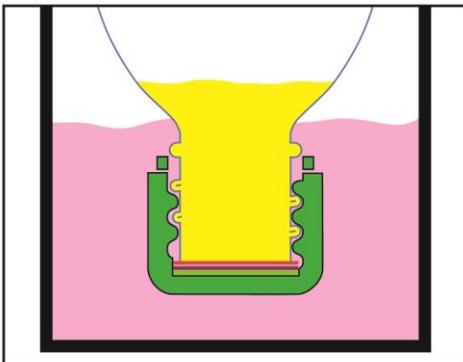
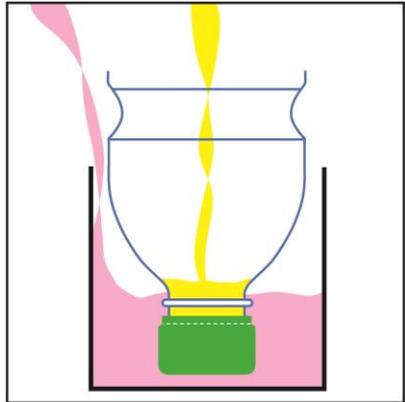


## Stage 1

- (a) Insert the hermetic seal centrally into the base of the PE closure.
- (b) The PE closure is applied and tightened to the suitable on-torque value onto the PET container.
- (c) A high frequency magnetic field is applied that generates heat in the hermetic seal and bonds it to the container.

## Stage 2

Carefully cut off and remove the base of the container without displacing the closure or hermetic seal. Invert and place the container neck into the mould and pour the primary coloured resin (*pink*) around the outside of closure and container. Pour the secondary different coloured resin (*yellow*) into the previously removed open base of the container, and allow both resins to set



## Stage 3

When the two resins have set remove from the mould. The mould can then be cross sectioned, cleaned up and viewed through a magnifier to ensure that a perfect fit was established. Should any correction be required to any of the three parts, those corrections can also be easily identified at this stage.