GE
Measurement & Control

Wall Thickness Measurement in the Bead Area of Plastic Containers

Ultrasonic Application Solutions

Application

The mass production of plastic containers is done by the blow molding method. It is used in the consumer goods industry, for example for detergent bottles, and in automobile manufacturing, for example for brake fluid containers. Due to the flow properties, nominal wall thicknesses is sometimes reduced at the geometrical transition points, which is the area between container body and the outlet. Quick nondestructive measurement of wall thickness is required in these critical areas in order to optimize the process parameters and the sampling during production.

Figure 1: G 25 MPN, position on a detergent container

Solution

For this application case, the GE Solutions Center recommends the combination of probe G 25 MPN with the special knife-shaped delay tip N7M 0.6 x 4.0. Its contact face produces a reliable acoustic transition in the bead area, even with small radii of curvature. The probe housing resembles a pencil and enables very easy handling for optimizing echo indications.

Figure 2: Probe G 25 MPN

GE
Measurement & Control

The pencil probe G 25 MPN

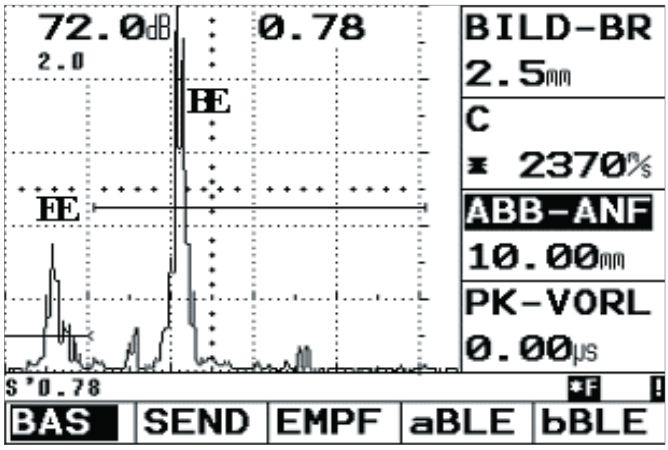

Figure 3: Setup

Because of the good acoustic coupling between the polystyrene probe delay line and the plastic container, the amplitude of the interface echo at sound entry is reduced to such a degree that the response threshold of the evaluation gate should be adjusted accordingly.

Figure 4: Matching coupling face

The special probe G 25 MPN with exchangeable delay line is suitable for wall thickness measurements in the range of 0.5 mm up to 10.0 mm (in steel). It includes a PVDF transducer with a diameter of 3mm.

General solution information

- Ultrasonic flaw detector: USM 36, USM Go+
- Probe: G 25 MPN
- Accessories: Delay line N7M 0.6 x 4.0
- This probe is also available with 5MHz as well as 10MHz.

Part numbers

USM 36	0037400	USM Go+	0113214
G 25 MPN	0067305	N7M 0.6 x 4.0	0067910

GE imagination at work

Your benefit

- Reliable acoustic transition even with small radii
- Ensure high quality
- Save money by eliminating destructive testing and by improving your process

Contact the GE European Solutions Center for your individual inspection problems:

GE Measurement & Control
European Solutions Center
www.utprobes.com
Portable.utsolutions@ge.com

70046042014