



# Measurement of Acrylic Mounting Parts on Domestic Sanitary Ware

## Ultrasonic Application Solutions

### Application

The multilayer setup of modern bathroom installations, such as wash-basins and shower tubs, requires the monitoring of minimum wall thicknesses in order to meet certain strength criteria. The acrylic components are reinforced by non-directional glass fiber backing.

The task is to determine the thickness of the acrylic and glass-fiber reinforced plastic (GFRP) layers by nondestructive sampling measurements during the production process.

### Solution

The wall thickness can be determined by means of ultrasonic testing. Parts of the sound beam are reflected from the transition point between acrylic and glass-fiber reinforced plastics (GFRP). This generates an internal interface or boundary layer echo with a sufficiently high amplitude for wall thickness measurement.

#### Instrument settings

The thickness of the acrylic layer is measured in the measurement mode "a logic pos", namely taking the

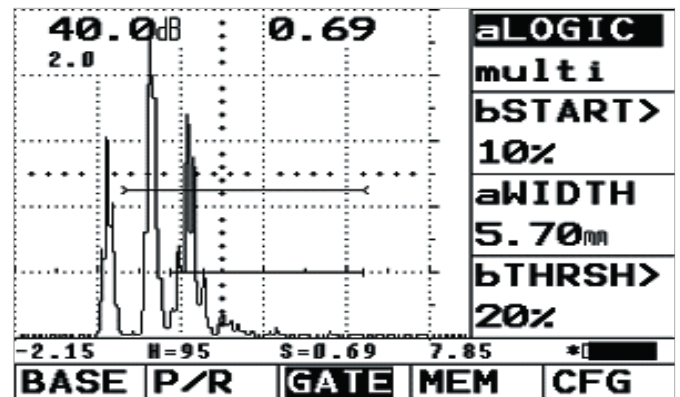
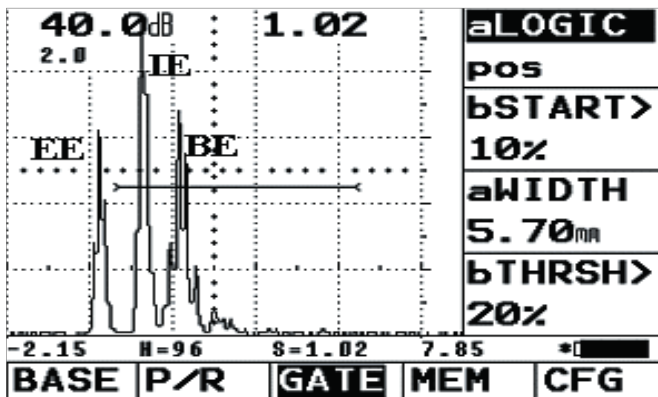


Figure 1: Thickness measurement on a wash basin

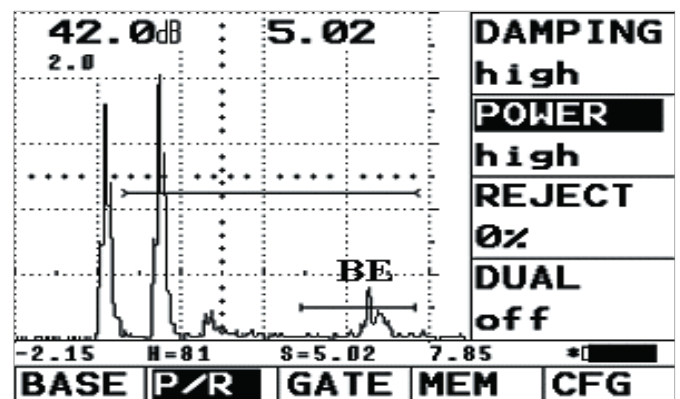
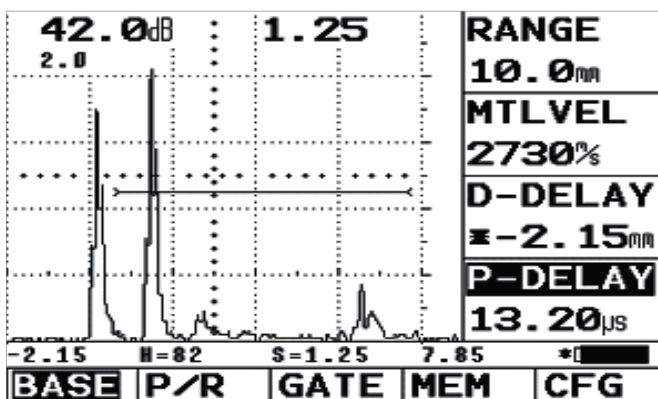
sound velocity in the acrylic material and the compensation for the probe delay line into consideration. The wall thickness of the GFRP base layer is determined in the measurement mode "a logic multi" on the assumption that both layers show a comparable sound velocity. The total thickness is calculated from the combined amount of the single layer thicknesses.



## Results



The A-scans above show how the acrylic thickness (= 1.02mm) and the GFRP thickness (= 0.69mm) can be read. The A-scans below show the reading for another test object with 1.25 mm and 5.02 mm respectively.



### General solution information

- Ultrasonic flaw detector: USM 36
- Probe: CA 214
- Accessories: delay line: N 12,5 K4

### Your benefit

- Ensure high quality
- Reduce field failures and potential liability
- Save money by eliminating destructive testing and by improving your process

#### Part numbers

USM 36	0037400	CA 214	0065121
N 12,5	0066382		

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