

# **BBF** **testing**

## **DEVELOPED IN HOUSE METHOD SOP 12 BASED ON BS EN 1170-7:1998 DIMENSIONAL VARIATION OF GLASS FIBRE REINFORCED CONCRETE DUE TO MOISTURE CONTENT**

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This Special Operating Procedure is to be used to comply with the requirements of the BBf Testing modification to EN 1170-7 test requirements.

The procedures laid out in the standard are to be followed in full however the Sylvac Digital Height gauge is to be used in the following manner to measure the distance between the bonded pads before and after the immersion and drying cycles.

## Test

1. The test pieces are to be transported by the producer to the laboratory when aged for 6 days at the production site. The transportation time shall not be taken into account when determining the age.
2. On receipt the test pieces are to be placed into the climate chamber at 20°C/60% RH until the test age decided by the customer and the laboratory. In the event of no such agreement the default age is 10 days (excluding transportation time as above)
3. Bond lower location pad (U face/ Mould) 40mm from the bottom of specimen and upper pad 260mm (U face/Mould) from bottom of specimen as per photo ref 1. The pads are to be bonded using Araldite Rapid™ in accordance with manufacturer's instructions. Leave 1 hour to dry.
4. Place Specimen on a 4-litre box and repeat process 1 for D face (Trowel).
5. Leave specimens for a minimum of 3 hours for resin to dry.
6. Weigh each test piece (m0) and log on QMSD105.
7. Qualify probe using master gauge.
8. Place the specimen against the angle plate in a vertical orientation using a shim and clamp into position using the provided fixing slots (Photo Ref 2).
9. Position digital height gauge as shown in Photo Ref 2 ensuring measurement will start from the marking notch and measure the points in micrometres four times between pads and log results on QMSD105.  
Test results  $\Delta l_s/l$ ,  $\Delta l_e/l$  and  $\Delta l_c/l$  expressed in millimetres per metre.
10. Place specimens T1, T3 and B1 on an edge in Oven A. The temperature is to be set at 33°C for 21 days.
11. After 21 days, place specimens in the Lab for 6 hours to stabilize.
12. Weigh each test piece and log on QMSD105 (m2).
13. Repeat process 5-7.
14. Place specimens T2, B2 and B3 in the water bath on rack at a temperature of 20°C
15. After 96 hours remove specimens from bath and wipe with a damp cloth.
16. Weigh each test piece and log on QMSD105 (m1)
17. Repeat process 5-7
18. Complete QMSD 118 Test Report ensuring the following wording is inserted in Section 5.

This test has been carried out with the following modification from the published standard: The equipment used to measure the movement between pads is a digital height gauge accurate to 0.003mm with full metrological traceability to ISO 17025 requirements. Specimens are held perpendicular to the gauge using a suitable surface and angle plates.

This validation of the modification to the prescribed test method as detailed in BS EN 1170-07 is based on a systematic assessment of the factors influencing the result as detailed in ISO/IEC 17025:2017 Section 7.2.2.1 Note 2 b)

Measurement uncertainty between pads at 220mm centres determined by a rigorous evaluation is 0.12%

