

## **DIN 4062**

Cold-processable plastic jointing materials for sewer drains

### **Jointing materials for prefabricated concrete parts**

Requirements, testing and processing

#### 5.7 Root resistance

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For the root resistance test, three dry plant pots (non-glazed clay pots) about 220 mm high should be used. If the manufacturer specifies using a pre-coating substance, the pre-coating substance supplied by the manufacturer should be applied on the inside of the pots about 100 mm above the base in a circular strip approx. 40-mm wide. Once the pre-coating material is completely dry, low-lime soil, pH 5 to 6 (no compost soil), mixed with a little peat, is filled into the pots up to just over the bottom edge of the coating.

The manufacturer (or the sampler) must provide the Testing Institute with two panels of the sealing material of dimensions 250 mm x 250 mm x 20 mm and one panel of 250 mm x 250 mm x 10 mm. The Testing Institute matches the diameter of the test panel to the pot inner diameter at a point half way up the pots. One shaped panel is placed inside each pot on top of the soil. The gap between the panel and the pot wall must be carefully filled with the product sealing material. Once the panels have been fitted, they are covered with an approx. 90-mm deep layer of soil. Lupins (35 to 40 seeds) of the *Lupinus albus* strain are sown evenly onto this layer of soil and covered with approx. 10 mm of soil.

In the winter half of the year the plants are sown in a heated greenhouse with additional artificial lighting, otherwise they are reared in the open. The layer of soil above the panels must be kept moist by regular watering with rainwater (through a glass tube inserted in the center, which reaches as far as the panel surfaces). The layer of soil underneath the panels is kept moist by intermittently standing the pots in trays filled with rainwater. After six weeks (in winter after eight weeks) the pots are opened and the upper and lower sides of the panels are examined for roots which have grown through or into the panels.

To establish the vigor of the lupins used in the test, a pot is filled in the same way as described above and fitted with a 20-mm thick panel of bitumen 85/40. A large number of lupin roots must have grown through this panel after the set test period.

Test climate: normal climate DIN 50 014 - 20/65 - 1

See section 7.2 for details of the replacement of this root resistance test with an analytical determination of the root toxin concentration in the sealing material.