

4.3.1 Geometrical properties

4.3.1.1 Production tolerances

Units shall have an appropriate joint detail capable of providing sealing and location integrity. Typical arrangements are shown in Figure 2 below.

Types of joints (see Figure 2):

- rebated joint (A);
- nib joint (B);
- butt joint (C).

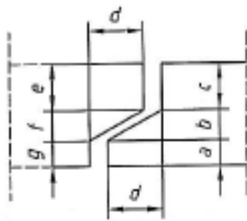


Figure 2a)

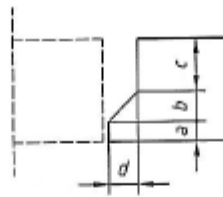


Figure 2b)

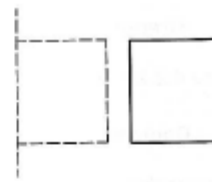


Figure 2c)

Figure 2 — Examples of box culvert joints

For the types of rebated joint illustrated, the spigot and socket shall have a thickness of not less than 45 mm at the root ($a + b$) and a nib length (d) of not less than 45 mm. ~~Any deleted text~~ Early casts from each mould shall be checked to ensure that joints mate satisfactorily.

NOTE It is suitable that, except for dimensions close to the minimum specified hereafter, the length d of the nib should be in the range from 1,3 to 2 times the nib root dimension $a + b$.

The maximum permissible tolerance from the manufacturer's declared dimensions, measured in accordance with 5.2, shall be as follows:

- thickness of roof/floor slab and wall : ± 10 mm;
- internal width and height of the opening : $\pm 1\%$ (min. -10 mm, max. 15 mm);
- length of units : $\pm 1\%$ (min. ± 15 mm);
- joints: (see Figure 2) ; a, b, c, d, e, f, g : ± 10 mm.

4.3.1.2 Minimum dimensions

The nominal thickness for roof, floor and wall shall be not less than 100 mm.

NOTE The length of unit is determined by the maximum weight and overall dimensions which can conveniently be lifted, transported and placed into the works but is not likely to be less than 1 000 mm except where handling or special considerations apply.

4.3.1.3 Nominal size

Box culverts shall be described by their principal dimensions according to 3.2, expressed in sequence:

- WxHxL

The manufacturer shall declare the box culvert nominal dimensions.

The opening may be provided with corner splays, which shall not reduce the rectangular area by more than 10 %.

4.3.1.4 Shape tolerance

Squareness: the difference between the diagonal dimensions of any face or end shall not exceed the following values:

- for any internal dimensions up to 2 000 mm: 10 mm;
- for any internal dimensions greater than 2 000 mm up to 4 000 mm: 15 mm;
- for any internal dimensions greater than 4 000 mm: 20 mm.

NOTE Tolerances might influence the watertightness characteristic of the joints.

4.3.1.5 Cumulative effect

Deviations can be cumulative and the overall effect may need to be considered.

For initial production from a new mould, where required with regard to fit, overlap and stepping shall be determined by placing at least three units onto a common level support, with the units just touching each other. Measured inside the units, the joint width between successive units shall not vary by more than 10 mm and the maximum step between adjacent units should not be more than 15 mm.