TECHNICAL NOTE #13

EUROCODE 6: IMPACT ON FIRED CLAY BRICK DIMENSIONS?

Neither SANS 227 or EN 771-Part 1 (covered by Eurocode 6) specify a work size for masonry units, but both state that the work size shall be declared by the manufacturer. Thus Clay Brick Association members will not be under any pressure to adopt the less productive UK standard brick format of 210x102.5x65 mm

Technical Contributor

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Date: February 2015

EUROCODE 6: IMPACT ON FIRED CLAY BRICK DIMENSIONS?

Neither SANS 227: Specification for Burnt Clay Masonry Units or EN 771-Part 1: Specification for Clay Masonry Units (covered by Eurocode 6) do not specify a work size for masonry units, but both state that the work size shall be declared by the manufacturer.

Thus Clay Brick Association members will not be under any pressure to adopt the UK standard brick format of 210x102.5x65 mm. Reducing the height from 73 mm to 65 mm reduces bricklaying productivity, which is not desirable.

Both SANS 227 and EN 771-Part 1 specify tolerance categories for the average and individual fired dimensions based on the measurement of a representative sample (SANS 227 sample size 32, EN 771-Part 1 sample size of 10).

In my experience a sample size of 10 is too small to make an informed decision regarding the compliance of a batch of bricks. We will have a good case to retain the sample size of 32.

The following tables compare the tolerance categories between SANS 227 and EN 771-Part 1.

Tolerance or maximum range in the dimensions of individual units measured from the sample.

SANS 227 Category	Tolerance mm	EN 771 Category	Maximum Range mm
FBX	L=+- 5mm	R 2	L=+- 4.5 mm
	W=+- 3 mm		W=+- 3.1 mm
	H=+- 3 mm		H=+- 2.6 mm
FBS	L=+- 7 mm	R 1	L=+- 8.9 mm
	W=+- 4 mm		W=+- 6.2 mm
	HH=+- 4 mm		H=+- 5.1 mm

For SANS 227 these tolerances are mandatory, whereas for EN 771-Part1, the manufacturer may ignore R1 and R2 and declare the maximum range of dimensions which will be achieved in that manufacturer's deliveries.

Maximum deviation of the sample mean from the specified work size, in this case assumed to be 222x106x73 mm for both standards.

SANS 227 Category	Max Deviation mm	EN 771 Category	Max Deviation mm
FBX	L=+-2.5 mm	T 2	L=+- 3.7 mm
	W=+- 1.5 mm		W=+- 2.6 mm
	H=+- 1.5 mm		H=+_ 2.1 mm
FBS	L=+- 3.5 mm	T 1	L=+- 6.0 mm
	W=+- 2.0 mm		W=+- 4.1 mm
	H=+- 2.0 mm		H=+- 3.4 mm

SANS 227 has a tighter specification for the variation of the sample mean from the declared work size.

Again EN 771-Part 1 permits the manufacturer to declare a deviation which differs from T 1 or T 2.

For further information:
The Clay Brick Association of South Africa (ClayBrick.org.za)
Website: www.claybrick.org.za