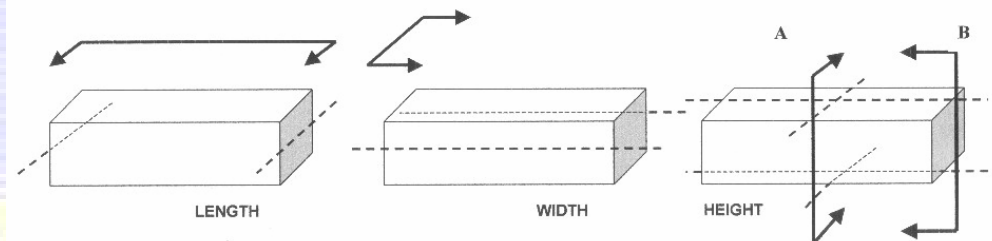


Dimensions and Tolerances

BS EN771-1 requires that the dimensions of a clay masonry unit shall be declared by the manufacturer in millimetres for length, width and height, in that order. The manufacturer shall declare also which of the tolerance categories the mean values fulfill when measured to the test method detailed in BS EN 772-16).

10 bricks are randomly sampled, superfluous material removed and using long nosed calipers, or bespoke measuring device, measurements must be taken on individual bricks for length, width and height as shown.



(This should not be confused with PAS 70, which is a BSI Publicly Available Specification for measuring brick tolerances in the case of disputes on site, as the 771-1 reference method is impractical. In cases where there is impasse, the test method below will have to be performed either at the nearest factory or at Ceram Research which will cause delays on site.)

TOLERANCE

MEAN VALUE

For each dimension in question, when 10 bricks have been measured, add the individual figures and then divide by 10, rounding to the nearest whole number (see separate procedure for height overleaf). Mean values should fall between the following limits:

The tolerance is the difference between the calculated mean size and the stated work size.

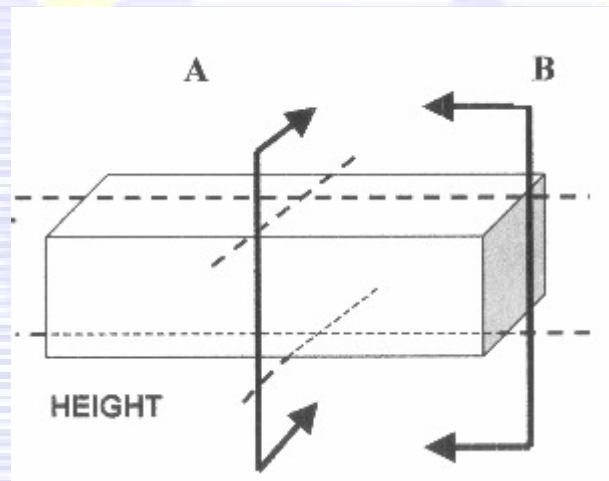
Declared size mm	T1 Lower & upper limits	Tolerances mm	T2 Lower & upper limits	Tolerances mm	Tm Deviation in mm declared by the manufacturer. (may be wider or closer than the other categories). Please refer to the product data sheet for quoted figure.
40	37-43	±3	38-42	±2	
50	47-53	±3	48-52	±2	
65	62-68	±3	63-67	±2	
68	65-71	±3	66-70	±2	
73	70-76	±3	71-75	±2	
80	76-84	±4	78-82	±2	
90	86-94	±4	88-92	±2	
102	98-106	±4	99-105	±3	
190	184-196	±6	186-194	±4	
215	209-221	±6	211-219	±4	
225	219-231	±6	221-229	±4	
227	221-233	±6	223-231	±4	
290	283-297	±7	286-294	±4	

e.g: if measurements for the declared length of 215mm are recorded as:
 $216 + 217 + 215.5 + 217 + 214 + 217.5 + 217.5 + 218 + 215 + 218 = 2165.5\text{mm}$ divide by 10 = 216.55 (figures of .5 or higher are rounded up) 217mm, this would fall within the tolerance T2 which indicates the limits of 211 to 219mm.

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HEIGHT

Unlike length and width Height measurements have to be taken from 2 points (A and B) and averaged for each brick.



e.g. For a declared height of 65mm, if A measures 64+ B measures 65 =129 divided by 2= a mean figure of 64.5mm

This has to be repeated for all 10 sampled bricks, the means added, divided by 10 and compared with the mean value table of tolerances. Therefore a T2 product mean must fall between 63-67mm for a declared size of 65mm

RANGE VALUE

The range tolerance covers the overall difference within a sample between the largest brick and the smallest and may be called upon to resolve problems with size variation.

From the 10 bricks measured (length, width or height), the highest and lowest figure for each declared dimension must not exceed a range as stated in the following table.

mm	40	50	65	68	73	80	90	102	140	190	215	227	290
R1	4	4	5	5	5	5	6	6	7	8	9	9	10
R2	2	2	2	3	3	3	3	3	4	4	4	5	5
Rm	A range in mm declared by the manufacturer (may be wider or closer than the other categories). Please refer to the product data sheet for quoted figure.												

e.g if the length of the brick in question is 215mm and the lowest measurement recorded during the test is 211mm and the highest measurement recorded is 216mm there is a difference of 5mm. This safely falls within the Range of R1 (9mm) but would fail if it is an R2 product (4mm).