BRICK TOLERANCES (65MM BRICK HEIGHT) FOR USE IN BRICK SLIP CLADDING SYSTEMS

Most brick slip systems rely, for their satisfactory performance, on the engagement of cut or purpose made brick slips into a rail system. This means that the height of the bricks becomes critical to their safe retention by the system.

Typically, brick manufacturers declare the height of the bricks they produce and state the maximum potential deviation from that height, using the three "Categories" stated within BS EN 771-1.

These three Categories are:

T1 / R1
T2 / R2
T2 / R2

BS EN 772-16 is the Standard that prescribes the methods of measurement. 10no bricks are selected at random from the consignment and each individual brick measured. The 10 measurements are added together and the total divided by 10 to determine the average/ mean of those measurements.

"T" is the maximum permissible deviation of the average/mean of those 10 measurements from the declared height value (65mm). "R" is the maximum permissible deviation between the largest and the smallest of the 10 individual height measurements.

TABLE 1 – Shows the maximum permissible deviations applicable to each category.

TABLE 1

CATEGORY	MAXIMUM PERMISSIBLE DEVIATION
T1	± 3mm
T2	± 2mm
R1	5mm
R2	2mm

TABLE 2 – Shows the individual brick height measurements that result in the extremes of brick height variation allowed by BS EN 771 for each T and R category combination.

TABLE 2

T1/R1									
QUANTITY OF BRICKS	INDIVIDUAL BRICK HEIGHT MEASUREMENT	ADDITION OF BRICK HEIGHTS	MEAN AVERAGE HEIGHT	COMPLIANCE		SMALLEST BRICK MEASURES	LARGEST BRICK MEASURES	COMPLIANCE	
				DEVIATION	CATEGORY			DEVIATION	CATEGORY
2	58mm	116mm	62mm	-3mm	T1	58mm	63mm	5mm	R1
8	63mm	504mm							
10		**620mm**							
2	72mm	144mm	68mm	+3mm	T1	72mm	67mm	5mm	R1
8	67mm	536mm							
10		**680mm**							

T2/R1									
2	59mm	118mm	63mm	-2mm	T2	59mm	64mm	5mm	R1
8	64mm	512mm							
10		**630mm**							
2	71mm	142mm	67mm	+2mm	T2	71mm	66mm	5mm	R1
8	66mm	528mm							
10		**670mm**							

T2/R2									
5	62mm	310mm	63mm	-2mm	T2	62mm	64mm	2mm	R2
5	64mm	320mm							
10		**630mm**							
5	68mm	340mm	67mm	+2mm	T2	68mm	66mm	2mm	R2
5	66mm	330mm							
10		**670mm**							

TABLE 3 - Summarises by Category, the smallest and largest brick that can be provided.

TABLE 3

CATEGORY	SMALLEST	LARGEST
T1 – R1	58mm	72mm
T2 – R1	59mm	71mm
T2 – R2	62mm	68mm

CONCLUSIONS

Any brick slip system supplier, incorporating a brick slip/cut brick that is designated by the brick manufacturer as being in one of the three above T & R Categories, must demonstrate by test that the extremes of brick height variation stated in Table 3 can be safely accommodated by their system, with adequate and sufficient engagement achieved at all times.

The following brick slip system testing must be carried out, incorporating brick slips exhibiting the extremes of height variation stated in Table 3.

Impact Testing Mortared
Impact Testing Un-mortared
Dynamic Water Penetration
Wind Resistance
Durability - Heat Rain, Freeze Thaw, Cyclic Wind Loading, Impact Testing
Pull Out Testing Un-mortared

Any assessment of adequate/sufficient brick slip engagement for any brick slip system must include representative site installation tolerances.