

Evaluation of falling mass impact resistance of WPC-Decking according to EN 15534-4

Scope

Decking boards from WPC are usually used as outside floorings. A typical impact to such flooring is the fall down of mean heavy objects. The behaviour of the WPC-deckings against this impact is measured via falling mass impact resistance. This is evaluated according EN 15534-4 and EN 15534-1.

Client

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Material:

Material is a WPC-decking board in form of a hollow profile. Product name declared from IDECK is "DURO".



Figure 1: Example of WPC decking profile DURO.

Methods:

Test is designed according EN 15534-4 chapter 4.5.1 for decking boards and carried out according EN 15534-1 chapter 7.1.2.2. WPC-decking boards with a length of 300 mm are used for the test. The weight of the impact mass is 1000 g and the falling height is 700 mm. Size of impact mass head is a ball with 25 mm in diameter. Samples are positioned on two support

distance of 200 mm. Test was conducted at room conditions 20°C and 65% relative humidity. The impact points are subjected to the weakest points of the WPC-decking profile (above the hollows of each side and in the middle part (shown in Figure 2). 10 replicates are carried out on each impact position.

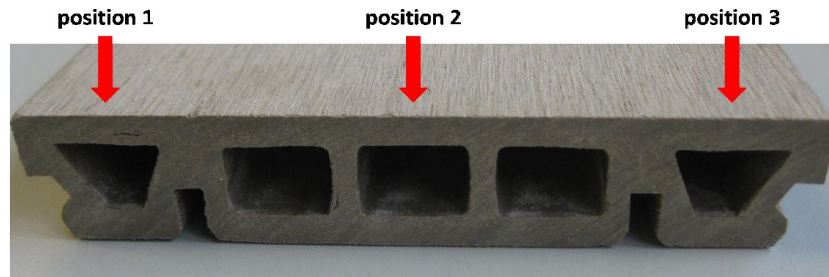


Figure 2: Positions of impact of falling mass.

Results:

Results are summarised in table 1. All replicates exhibited lower values as required in EN 15534-4. Therefore the material passes the test regarding falling mass impact resistance. Mean values and highest indentation depth are presented.

Table 1: Mean coefficient of linear thermal expansion.

	position 1	position 2	position 3
mean value impact depth [mm]	0,065	0,143	0,073
maximal impact depth [mm]	0,16	0,23	0,12
maximal allowed depth [mm]	≥0,5	≥0,5	≥0,5
number of cracks ≥10mm	0	0	0
evaluation	pass	pass	pass