

The present invention relates to oblique web multiple boards, in particular webbed double boards made of aromatic polycarbonates or webbed multiple boards in general. These consist of at least two boards parallel to one another
5 which are joined together by webs extending in particular arrangements.

The most frequent form is the webbed double board wherein the webs extend perpendicularly to the plane of the boards
10 at regular distances apart so that, viewed in cross-section, a row of adjacent rectangular chambers is formed.

Owing to the anisotropic character of such boards with
15 respect to their flexural strength, other geometrical forms such as, for example, the so-called framework geometry (Degussa, Vedril) have been developed in particular for products of PMMA (polymethyl methacrylate).

20 In these geometrical forms, the webs enclose an angle of approximately 45° with the boards, which leads to reduced tensions and increased rigidity for a given weight per unit area owing to improved transmission of transverse forces.

25 As a result of these measures, when the said products are assembled the supporting elements may be arranged further apart, so that there is a saving in the material for the supporting construction and in the time required for installation.

30 A construction corresponding to the PMMA framework geometries has not hitherto been put into practice using polycarbonate webbed boards.

35 Only a so-called X-board having a thickness of 16 mm is known, wherein two 45° webs per chamber are integrated into

the geometry in addition to the perpendicular webs (PolyX-16 from the firm Polygal).

- Owing to the additional oblique webs, the said board
- 5 achieves a weight per unit area of 3.3 kg/m^2 which, compared with standard 16 mm PC webbed boards (approximately 2.7 to 3.0 kg/m^2), is significantly higher.

- A straightforward transference to polycarbonates of
- 10 geometries which have proved successful in the production of boards made of PMMA is not possible, by reason of the different properties of the material (for example, modulus of elasticity).

- 15 At a sufficient load-bearing capacity, buckling occurs in the board prior to maximum loading being reached.

- In EP A 0 054 856 a large number of different possible geometrical forms are described for webbed double boards
- 20 made from thermoplastics. However, prior art contains no data on weights per unit area nor proposals for selecting particularly suitable geometries for specific plastics or for different dimensionings between the webs.

- 25 It has now been found that oblique web multiple boards made of aromatic polycarbonates (PC), consisting of two boards arranged parallel to one another at a given distance apart and joined together by webs arranged between them, with one portion of the webs, viewed in cross-section, connecting
- 30 the upper and lower board in zigzag formation and thereby forming an angle of approximately 45° , which are characterised in that one portion connects the upper and lower board in a simple zigzag formation while the other portion is attached to the upper or lower board at the
- 35 junctions of the oblique webs and extends perpendicularly towards the opposite board, and the thickness of the

oblique webs is approximately 0.4 mm, while the thickness of the perpendicular webs is approximately 0.2 mm, with a distance between the boards of approximately 16 mm and a weight per unit area of approximately 2.7 kg/m², has

- 5 sufficient load-bearing capacity since the buckling is shifted to beyond the load limit.

The latter is defined in such a way that the deformation at a load of 750 N/m² is not greater than 5%, referred to the
10 width of the board.

A particular embodiment of the invention is represented by webbed double boards which are characterised in that, at a thickness of approximately 0.7 mm for both the parallel
15 boards, the oblique webs form an angle of approximately 45° with the boards and their thickness is approximately 0.4 mm, while the thickness of the perpendicular webs is approximately 0.2 mm.

20 The distance of the last-mentioned webs is approximately 16 mm, as is the depth of the webbed double boards. The terminal web delimiting the board right and left respectively is preferably approximately 0.4 mm thick. At the given measurements the resultant weight per unit area
25 is approximately 2.7 kg/m².

A diagram of the embodiment is illustrated in Figure 1.

The oblique web multiple boards according to the invention
30 are produced by extrusion in accordance with the known methods.

Suitable coatings for the purpose of additional reinforcement, improved flame-proofing et cetera may, of
35 course, be applied to the upper sides and/or under sides of

the boards, in accordance with the known methods, for example, by coextrusion or lamination.

The boards according to the invention are employed in the
5 same fields as are the known webbed double boards.



Claim

for AT, BE, CH, DE, DK, FR, GB, IT, LI, LU, NL, SE, IE

- 5 Oblique web multiple boards made of aromatic polycarbonates (PC), consisting of two boards arranged parallel to one another at a given distance apart and joined together by webs arranged between them, with one portion of the webs, viewed in cross-section, connecting
- 10 the upper and lower board in zigzag formation and thereby forming an angle of approximately 45° ,
characterised in that one portion connects the upper and lower board in a simple zigzag formation while the other portion is attached to the upper or lower board at the
- 15 junctions of the oblique webs and extends perpendicularly towards the opposite board, and the thickness of the oblique webs is approximately 0.4 mm, while the thickness of the perpendicular webs is approximately 0.2 mm, with a distance between the boards of approximately 16 mm and a
- 20 weight per unit area of approximately 2.7 kg/m^2 .