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TNO Building and Construction Research
meets the requirements of ISO 9001, and is
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Examination according to the Dutch NEN 1775:1997 and to NEN 6066:1997 of Primo System flooring system.

Client:

Sycon International B.V.

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By order of Sycon International B.V. at Uithoorn, The Netherlands the reaction to fire of floorings and the smoke production during fire was determined of the Primo System flooring system with a height of 40 mm. The system submitted for examination is applied e.g. as a raised flooring for exhibits and tradeshow.

The reaction to fire examination was carried out according to the Dutch standard NEN 1775: 1997 and smoke production examination according to NEN 6066: 1997.

Details and results of the examinations are given in the TNO report 97-CVB-R1461(Rev.1) of October 2002.

Some specifications of the examined system are summarized below:

The flooring system consists of linked, anthracite coloured, box shaped elements of 500 mm x 500 mm. The closed box is formed by closed sides and reinforced by internal stiffening ribs across, through which areas of approx. 60 mm x 60 mm and, locally situated, tubular holes of \varnothing 130 mm and the height of 40 mm were obtained. According to information the elements are produced from Xanter bisphenol polycarbonate ingredients, without flame retardant additives, to which reinforcing glass fibres are added. Xanter is a product of DSM Polymers, Sittard, The Netherlands.

Dimensions and density:

Total flooring height: 40 mm; material (wall) thickness: 3,2 mm; total surface density approximate 15,5 kg/m².

Assessment of the material

With due regard for the remarks given hereafter, the examined glass fibre reinforced Xantar polycarbonate ingredients produced Primo System flooring system, with an elevation/height of 40 mm and a surface density of 15,5 kg/m², is assessed as follows:

- Contribution to fire propagation of floorings according to NEN 1775: 1997: Class T1;
- Determining smoke density according to NEN 6066: 1997: $\bar{D}_{L,h;\max} = 6.4 \text{ m}^{-1}$.

Remark 1:

The results only relate to the application of the system on floors that are composed of a non-combustible material according to the definition of NEN 6064: 1991, with a density of at least 1200 kg/m³, on which it is loosely laid. They are, for instance, not valid if the system is used in combination with non-combustible subsurface with much lower density or a combustible subsurface or support.

Remark 2:

The followed test method for the determination of the horizontal surface spread of floorings according to chapter 6 of the NEN 1775: 1997 is similar to the test methods of :

- A the German DIN 4102:1990: Teil 14: "Brandverhalten von Brandstoffen und Bauteilen; Bodenbeläge und Bodenbeschichtungen; Bestimmung der Flammen-ausbreitung bei Beanspruchung mit einem Wärmestrahler,
- B the American ASTM E 648-84/90: "Standard test method for critical radiant flux of floor covering systems" and the in 2002 released European method of the
- C C- the European/ISO: EN ISO 9239-1: 2002: "Reaction to fire tests for floorings".