

CNC Milling and Manufacturing of Groove Shapes for Light Reflection Measurement

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Light reflection of materials depends on many factors, mainly on their colour and type, angle of light incidence and surface structure. This paper is focused on evaluation of the surface shape influence of expanded polyvinylchloride on light reflection. For this reason polyvinylchloride samples with different shapes, depths, widths and numbers of surface grooves were produced on CNC milling machine. The light reflection of the investigated material samples was experimentally measured by means of illuminance ratio. The samples were subsequently compared in terms of their ability to reflect light. A part of the work deals with mathematical simulation of the daylight factor for definite surface shapes. The simulations were performed using Wdls 4.1 software. It was found that the surface shape has an influence on the light reflection and on the illuminance in a given point too. The light reflection of the tested material is in general influenced by shape, depth, width and number of surface unevennesses.

Keywords: Light Reflection, CNC Milling, Daylight Factor, Surface Shape, Polyvinylchloride.

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