

عنوان مقاله:

Mechanical Properties of Acrylic solvent-based traffic paints

محل انتشار:

چهارمین کنگره بین المللی پوشش های حمل و نقل (سال: 1393)

تعداد صفحات اصل مقاله: 2

نویسندگان:

(R Hasheminasab - Iran Polymer and Petrochemical Institute (IPPI

(S Pazokifard - Iran Polymer and Petrochemical Institute (IPPI

خلاصه مقاله:

Stress-strain analysis (SSA) and abrasion resistance of solvent based traffic paints as a common category in road marking materials are important issues for evaluation of a road marking durability in its service life. In this study, various solvent based acrylic paints were formulated in such a way that the general paint properties e.g. no pick-up time, viscosity, reflectance $45/0^\circ$ and hiding power were optimized. Three paint formulations contain different amounts of resin (20, 30 and 40 wt %) and silica in particle size of 400 nm. In optimum amount of the resin (i.e. 30 wt %) two other paints, one without silica (S-18-WS) and the other with fine silica in 40 nm (S-18-fine) were prepared. SSA on free film and abrasion resistance on intact films of the paints onto a substrate were evaluated using tensile and Taber abrasion tests respectively. The analysis results showed that the highest work of rupture (area under stress-strain curve) corresponds to lowest weight loss in Taber abrasion test. In other words SSA results can be used to interpret the abrasion resistance of solvent based traffic paints.

کلمات کلیدی:

Road marking, Traffic paint, Taber abrasion resistance, SSA, Mechanical properties

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