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Study of the influence of surface roughness in adhesion assay of shear traction with 1020 steel and adhesive polyurethane derived from castor oil

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Adhesives normally used for the cohesion of metal surfaces may contain volatile organic compounds, VOCs, which are, second several researchers, harmful to health and the environment. The demand for green adhesives, which are derived from renewable raw material source and not harmful to the environment and health, has intensified in recent years. One alternative is the adhesive polyurethane derived from castor oil developed by the Group of Analytical Chemistry and Technology of Polymers IQSC-USP. In this paper had been analyzed the adherence owing to the influence of surface roughness of steel ABNT 1020 in adhesion assays by shear traction. Based on ASTM D 3983-93, observed that for polished surfaces, the rupture tension is lower than for surfaces sanded with sandpaper 600. The surfaces were analyzed by scanning electron microscopy after the rupture.

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