ANALYSIS OF THE INFLUENCE OF VARIATIONS IN SOLVENT-VERNIS MIXTURE AND DRYING TEMPERATURE ON THE TICKNESS AND GLOSS OF PAINT ON ST 41 STEEL PLATE MATERIAL

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ABSTRAK

This study aims to determine the effect of thinner (solvent) composition and oven drying temperature on the final result of painting, particularly in terms of paint adhesion and gloss level on ST 41 steel plate material. In the automotive industry, paint quality is crucial as it affects both the appearance and durability of materials. The research utilized three variations of thinner-clear coat mixtures (5%, 10%, and 15%) and three oven temperatures (40°C, 60°C, and 80°C).The results show that higher oven temperatures and greater thinner content tend to reduce the paint thickness. A temperature of 40°C produced the thickest paint layer, the highest gloss level, and the best adhesion. In contrast, a temperature of 80°C with a higher thinner mixture resulted in a thinner layer, lower gloss, and poor adhesion. In conclusion, a lower oven temperature combined with a moderate thinner ratio provides the best painting quality. This study is expected to serve as a reference for determining effective and efficient painting techniques in the automotive field.

***Key words**: Thinner concentration, drying temperature, paint adhesion, gloss level, automotive painting, ST 41 steel, clear coat, coating quality.*