

***THE INFLUENCE OF VARIATION POWDER COATING LAYER ON
CORROSION RATE AND ST 37 STEEL MICRO STRUCTURE IN BATTERY
ELECTROLYTE MEDIA***

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ABSTRACT

In the fast-growing automotive world, people rely heavily on commercial and public vehicles because it makes transportation, the economy and infrastructure easier. Making vehicles is something that will continue to grow, therefore the selection of materials in the construction process is very important. On the car there is a frame construction that uses steel plate material, one of which is ST 37 steel plate. The part of the frame adjacent to the battery very often experiences corrosion due to exposure to battery electrolyte when it reacts in the long term. In this study, powder coating was used with the aim of knowing the level of corrosion resistance of the ST 37 steel plate using a 3-layer variation, namely, 1-layer, 2-layer and 3-layer variations using battery electrolyte media. This is done in order to obtain the number of layers that are able to inhibit the corrosion rate on the ST 37 steel plate using battery electrolyte media. The more variations of the layers in the corrosion medium, the lower the corrosion rate, that is, in the 1 layer variation, the corrosion rate is 0.0524 mpy, and the 2-layer variation is 0.0371 mpy, and in the last variation, 3 layers, the corrosion rate is 0.0207 mpy. In the microstructure test the maximum result is to use the 3-layer variation, the results are stronger and the weight loss is smaller.

Keywords : Powder Coating, Corrosion Rate, Electrolyte, Steel Plate ST 37