

ABSTRAK

Korosi di area basah pada pesawat sering kali dijumpai pada saat pesawat melakukan perawatan. Ardrex AV-15 merupakan salah satu produk inhibitor senyawa kimia yang sering dipakai pada dunia penerbangan untuk melindungi struktur dan rangka pesawat dalam hal pengendalian korosi. Berdasarkan catatan data pesawat yang melakukan perawatan di PT. GMF Aeroasia, setidaknya ada tiga pesawat yang mengalami kasus korosi terutama pada *floor beam* di area basah yang dalam hal ini terbuat dari material aluminium alloy 7075-T6. Oleh sebab itu, untuk mengetahui laju korosi pada area tersebut, dilakukan pengujian menggunakan material uji aluminium 7075-T6 dengan metode kehilangan berat dan elektrokimia. Variabel pengujian ini berupa pelapisan inhibitor dari material dengan variasi tanpa pelapisan, satu lapisan, dan dua lapisan. Berdasarkan metode kehilangan didapatkan laju korosi paling besar pada sampel material yang tanpa pelapisan yakni sebesar 0,029641138 (mg/cm²jam) dengan kehilangan berat sebesar 271,56 (mg), sedangkan laju korosi yang terendah didapati pada sampel material dua lapisan yakni 0,015793651 (mg/cm²jam) dengan kehilangan berat 159,2 (mg). Dengan metode elektrokimia didapatkan laju korosi tertinggi pada sampel material yang tanpa pelapisan sebesar 0,19417 (MPY) dengan I_{corr} $4,6829 \times 10^{-7}$ (A/cm²). Laju korosi terendah ada pada sampel material yang dilapisi inhibitor dua lapisan senilai 0,055872 (MPY) dengan I_{corr} $1,3475 \times 10^{-7}$ (A/cm²).

Kata kunci: Korosi, Inhibitor, Aluminium 7075-T6.



**ANALYSIS OF CORROSION RATE ON AIRCRAFT FLOOR BEAM WITH
VARIOUS LAYER OF COATING ARDROX AV-15 BY USING WEIGHT LOSS
AND ELECTROCHEMICAL METHODS**

ABSTRACT

Corrosion in wet areas on aircraft is often encountered during aircraft maintenance. Ardrox AV-15 is a chemical inhibitor product that is often used in aviation to protect aircraft structures and frames in terms of corrosion control. Based on data records of aircraft that perform maintenance at PT. GMF Aeroasia, there are at least three aircraft that experienced corrosion cases, especially on the floor beam in a wet area which in this case is made of 7075-T6 aluminum alloy material. Therefore, in order to determine the corrosion rate in that area, the author will test the corrosion rate through weight loss and electrochemical method. The inhibitor coating as a variable of the test which form of sample without coating, one layer, and two layer. Based on wight loss method the highest corrosion rate found in the sample without coating i.e. 0,029641138 (mg/cm²jam) by 271,56 (mg) losing of weight, whereas the lowest corrosion rate found in sampel which two layer of inhibitor i.e. 0,015793651 (mg/cm²jam) by 159,2 (mg) losing of weight. Through electrochemical method the highest corrosion rate found in the sample without coating i.e 0,19417 (MPY) with I_{corr} $4,6829 \times 10^{-7}$ (A/cm²). The lowest corrosion rate found in sampel which two layers of inhibitor i.e. 055872 (MPY) with I_{corr} $1,3475 \times 10^{-7}$ (A/cm²)

Keywords: Corrosion, Inhibitor, Aluminium 7075-T6.

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