THE EFFECT OF RIVER WATER POLUTANT TO THE CHARACTERISTIC AND CORROSION RATE OF AISI STEEL 1045 AND STAINLESS STEEL 304 IN BOKOR RIVER SURABAYA

Name : IC Farid Hadi Prasetyo
NRP : 2708 100 046
Department : Teknik Material dan Metalurgi FTI-ITS
Lecturer : Budi Agung Kurniawan, ST, M.Sc.

Abstract
Carbon steels are material mostly used on human’s daily for construction, especially on irrigation field used for building bridge and river sluice. The study was conducted to study the effects of pollutants in river water on the corrosion rate and the characteristics of AISI 1045 steel and 304 SS. From the XRD examination on AISI 1045, the corrosion product that formed during 90 days immersion test in Bokor river Surabaya was found as FeS and $\text{Fe}_2(\text{SO}_4)_3$, while from SEM EDAX examination found S, Ca, and O as the corrosion product and cause uniform corrosion. Based on weight loss test, the highest corrosion rate on AISI 1045 was found at the 30th day of 14.402 mpy and by tafel method was found at night condition of 18.38 mpy. From XRD and SEM examination on 304 stainless there was no corrosion product found during 90 days immersion. By weight loss test, the highest corrosion rate was found at the 60th of 00261 mpy and by tafel method, it was found at night condition of 1.6 mpy.

Key words : corrosion rate, river water, pollution.
(Halaman ini sengaja dikosongkan)