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Effect of Grooving on Static Strength of Fillet Welded Joint for Ship Structure under Compressive Stress Condition applied by bending moment (2nd Report)

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Summary: Corrosion of structural members of ships is one of the main problems for ship safety.
In this report effect of grooving on static strength of corroded fillet welded joints for ship structure is investigated with experimental result and FEM analysis. Four points bending (4PB) test was conducted with T-shape specimen (TSS) without bracket plate against lateral deflection of web plate and the test result was compared with 4PB test result using a half size model specimen of hold frame of Cape-size bulk carrier (SMS). It is mainly obtained that in case of grooving in compressive stress region applied by bending moment, at fillet welded joint, maximum load occurs at lateral deflection of web plate and grooving width and grooving depth effects maximum load. There is no precise difference between 4PB test result with TSS and that with SMS. There is precise effect of inclined angle (20°) on the maximum load and is a little effect of Face-shape on it.

Keywords: Fillet Welded Joint, Corrosion, Grooving, Local Strength of Ship Structure, Static Strength

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