



Journal of the Japan Society of  
**Naval Architects and Ocean Engineers**  
*The Japan Society of Naval Architects and Ocean Engineers*

[Available Volumes](#) | [Japanese](#) >> [Publisher Site](#)

Author:  [ADVANCED](#) | Volume  Page   
Keyword:   |



[TOP](#) > [Available Volumes](#) > [Table of Contents](#) > Abstract

ONLINE ISSN : 1881-1760

PRINT ISSN : 1880-3717

**Journal of the Japan Society of Naval Architects and Ocean Engineers**

Vol. 1 (2005) pp.169-179

[\[Image PDF \(1552K\)\]](#) [\[References\]](#)

## Effect of Corrosion on Static Strength of Hull Structural Members (7th Report)

[Tatsuro Nakai](#), [Hisao Matsushita](#) and [Norio Yamamoto](#)

(Accepted March 22, 2005)

**Summary:** Pitting corrosion is typical corrosion observed on coated hold frames of bulk carriers which exclusively carry coal and iron ore. In order to secure the safety of these types of bulk carriers, it is important to understand the effect of pitting corrosion on local strength of hold frames.

In order to investigate this effect, a series of non-linear FE-analyses has been performed with pitted rectangular plates under compressive and shear loading conditions. It has been revealed that ultimate compressive and shear strength of pitted plates is smaller than that of uniformly corroded plates in terms of average thickness loss and that prediction results of ultimate strength using average thickness loss at the minimum cross section would be on the safe side. It has been also found that reduction of tensile strength due to pitting corrosion is larger than that of ultimate compressive and shear strength.

[\[Image PDF \(1552K\)\]](#) [\[References\]](#)

Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Tatsuro Nakai, Hisao Matsushita and Norio Yamamoto: Effect of Corrosion on Static Strength of Hull Structural Members (7th Report) , Journal of the Japan Society of Naval Architects and Ocean Engineers, (2005), Vol. 1, pp.169-179 .



---

[Japan Science and Technology Information Aggregator, Electronic](#)

