

Simplified Ultimate Strength Assessment of Ship Structures Based on Biro Klasifikasi Indonesia Rules for Hull

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Abstract : Ultimate Strength Assessment on ship cross section in accordance with Biro Klasifikasi Indonesia (BKI) Rules for Hull, follows step by step incremental iterative approach. In this approach, ship cross section is divided into plate-stiffener combinations and hard corners element. The average stress-strain relationship (σ - ϵ) for all structural elements will be defined, where the subscript k refers to the modes 0, 1, 2, 3 or 4. These results would be verified with a commercial software calculation in similar cases. The numerical calculations of buckling strength are in accordance with the commercial software (GL Rules ND). Then the comparison of failure behaviours of stiffened panels and hard corners are presented. Where failure modes 3 are likely to occur first follows the failure mode 4 and the last one is the failure mode 1.

Keywords : ultimate strength assessment, BKI rules, incremental, plate-stiffener combination and hard corner, commercial software

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