

Fatigue life of ship structures

1. State Criteria and stress concentration in marine structures

- 1.1. Criteria for present estimated state of ship structures
- 1.2. The stress concentration in typical units of hull structures

2. The cyclic deformation of metals

- 2.1. Features of deformation of metals and alloys under cyclic loading
- 2.2. The diagrams of cyclic deformation
- 2.3. Practical techniques for obtaining the diagrams of cyclic deformation

3. Performance of fatigue failures at the stage of the crack appearance in the structure

- 3.1. Criteria for fatigue under cyclic loading
- 3.2. Features of deformation of the material in the construction
- 3.3. Criteria for the appearance of a fatigue crack
- 3.4. The observation of the process of fatigue failure
- 3.5. The theory of structural material fatigue
- 3.6. Performance of fatigue of metals under random loading
- 3.7. Determination of cyclic deformation in the stress concentration zone
- 3.8. Assessment of structural elements durability on the stage of initiation of fatigue cracks

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- 4.1. Criteria of the ultimate state of structure
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- 4.4. Methods for determining the stress intensity factor
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5. Methods of determining of parameters characterizing the materials resistance of cracks distribution

- 5.1. Determination of indicators characterizing the materials resistance of fatigue cracks growth
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