

No.94 Guideline for application of UR S31 Rev.4

(April
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1. General guidance note regarding the use of UR S31 Rev.4

This document is intended for guidance and interpretation of UR S31 Rev.4.

The items in this guideline are arranged according to the index used in the unified requirement.

2. S31.2.1.2.1 (b): Location of tripping brackets not in complete compliance with S31

Where there are two existing tripping brackets supporting frames but their location is not in complete compliance with S31, i.e. one located less than $h/3$ above zone A and one less than $2h/3$ from intersection of the hopper plate with the side shell, this may be accepted as equivalent to the requirements in S31.2.1.2.1 (b), provided that the tripping bracket thickness is not less than the frame web thickness.

3. S31.2.2: Repair of damaged frames already complying with S31

In case of renewal of a damaged frame already complying with S31, the following should be observed:

- Replacements of rolled profile are preferably to be made of the same rolled section. Built-up profiles are allowed in exceptional cases only. A repair made of an inserted built-up profile in a rolled profile could be acceptable provided some precautions are taken. The flange of the built-up profile is to overlap the repair area with sniped shape to smoothly allow the stresses to pass from the rolled profile to the built-up profile and vice versa. (See also IACS Recommendation No.47 Part B Figure 6.4 and 6.5.)

4. S31.2.2: Repair of damaged frames before S31 implementation

In case of renewal of a damaged frame before S31 implementation date for the considered ship, as built scantlings may be applied. For practical reason, it is up to the Owner whether to renew according to S31 or not.

5. S31.3.1 and S31.3.4: Application of roll radius of gyration (k_r) in S31.3.1.2 and bending moment coefficient (m_a) in S31.3.4 Table 2

The following combination of roll radius of gyration (k_r) in S31.3.1.2 and bending moment coefficient (m_a) in S31.3.4 Table 2 apply for the purposes of UR S31:

- Empty holds of ships allowed to operate in non homogeneous loading conditions, $k_r=0,39B$ and $m_a=10$, $m_b=17$, 19, or 22.
- Loaded holds of ships allowed to carry only light cargo (density less than $1,78 \text{ t/m}^3$), $k_r=0,39B$ and $m_a=12$, $m_b=20$, 22, or 26.
- Other cases $k_r=0,25B$ and $m_a=12$, $m_b=20$, 22, or 26. This represents the loaded hold of a ship in homogeneous heavy cargo loading condition, which is more severe than a loaded hold in non homogeneous cargo condition, where $k_r=0,39B$.

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