

English version
Version Française
Deutsche Fassung

Cranes - General design - Part 1: General principles and requirements

Appareils de levage à charge suspendue -
Conception générale - Partie 1: Principes
généraux et prescriptions

Krane - Konstruktion allgemein - Teil 1:
Allgemeine Prinzipien und Anforderungen

This corrigendum becomes effective on 9 December 2009 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 9 décembre 2009 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 9. Dezember 2009 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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1 Modifications to 3.2, Symbols and abbreviations

Add the following symbol " α ," in Table 1 to read:

" $\alpha, \alpha_1, \alpha_2$ Angles between horizontal line and lines of constant N in the σ_a - σ_m -plane".

Delete the following symbol and description in Table 1:

" μ, μ_1, μ_2 Rises of lines of constant N in the σ_a - σ_m -plane".

2 Modifications to 4.4.3, Transformation of the identified stress cycles into cycles with constant mean stress or constant stress ratio

Replace the 1th sentence with:

"Fatigue strengths are usually presented for constant mean stresses σ_m (usually $\sigma_m = 0$) or constant stress ratio $R = \sigma_l / \sigma_u$ (usually $R = -1$ or 0).".

Replace the existing Equation (10) with: "

$$\sigma_a(R) = \frac{\sigma_{a,i} + \operatorname{tg} \alpha \cdot \sigma_{m,j}}{1 + \operatorname{tg} \alpha \cdot \frac{1+R}{1-R}}$$

".

Replace the existing Equation (11) with: "

$$\sigma_a(\sigma_m) = \sigma_{a,i} + \operatorname{tg} \alpha \cdot (\sigma_{m,j} - \sigma_m)$$

".

Replace the existing Equation (12) with: "

$$\operatorname{tg} \alpha = \operatorname{tg} \alpha_1 = \frac{\sigma_a(R=-1)}{\sigma_a(R=0)} - 1$$

".

Replace the existing Equation (13) with: "

$$\operatorname{tg} \alpha = \operatorname{tg} \alpha_2 = 1 - \frac{\sigma_a(R = -1)}{\sigma_a(R = \infty)}$$

".

Replace the meaning of the equation with:

"where

$\sigma_{a,i}$ is the stress amplitude of range i resulting from "rainflow counting" (see Figure 6);

$\sigma_{m,j}$ is the mean stress of range j resulting from "rainflow counting" (see Figure 6);

$\sigma_a(R)$ is the transformed stress amplitude for constant stress ratio;

$\sigma_a(\sigma_m)$ is the transformed stress amplitude for constant mean stress;

R is the constant stress ratio selected for one-parameter classification of stress cycles;

σ_m is the constant mean stress selected for one-parameter classification of stress cycles;

α_1, α_2 are the angles between the horizontal line and the lines of constant N in the σ_a - σ_m -plane (see Figures 7 and 8),

NOTE If the mean stress σ_m is assumed not to be decisive (e.g. for welded structures), $\alpha_1 = \alpha_2 = 0$.

N is the number of stress cycles to failure by fatigue for the stress cycle described by $\sigma_{a,i}$ and $\sigma_{m,j}$;

$\sigma_a(R = -1)$,

$\sigma_a(R = 0)$,

$\sigma_a(R = \infty)$ are the stress amplitudes, in dependence on the specified stress ratio R and number of cycles N , for which failure by fatigue occurs."

Replace the sentence above Figure 7 with:

"The relationship between stress amplitudes to failure by fatigue and mean stress or stress ratio for the component under consideration for fatigue assessment is shown in Figure 7."