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1.Baskı

EUROCODE 3: ÇELİK YAPILARIN TASARIMI - BÖLÜM 1-5: GENEL KURALLAR - YANAL YÜK ETKİSİ OLMAYAN DÜZLEM PLAKALI YAPILAR İÇİN İLAVE KURALLAR

Eurocode 3: Design of steel structures - Part 1-5: General rules - Supplementary rules for planar plated structures without transverse loading

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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Annex D [informative] – Plate girders with corrugated webs

D.1 General

(1) Annex D covers design rules for I-girders with trapezoidal or sinusoidal corrugated webs, see Figure D.1.

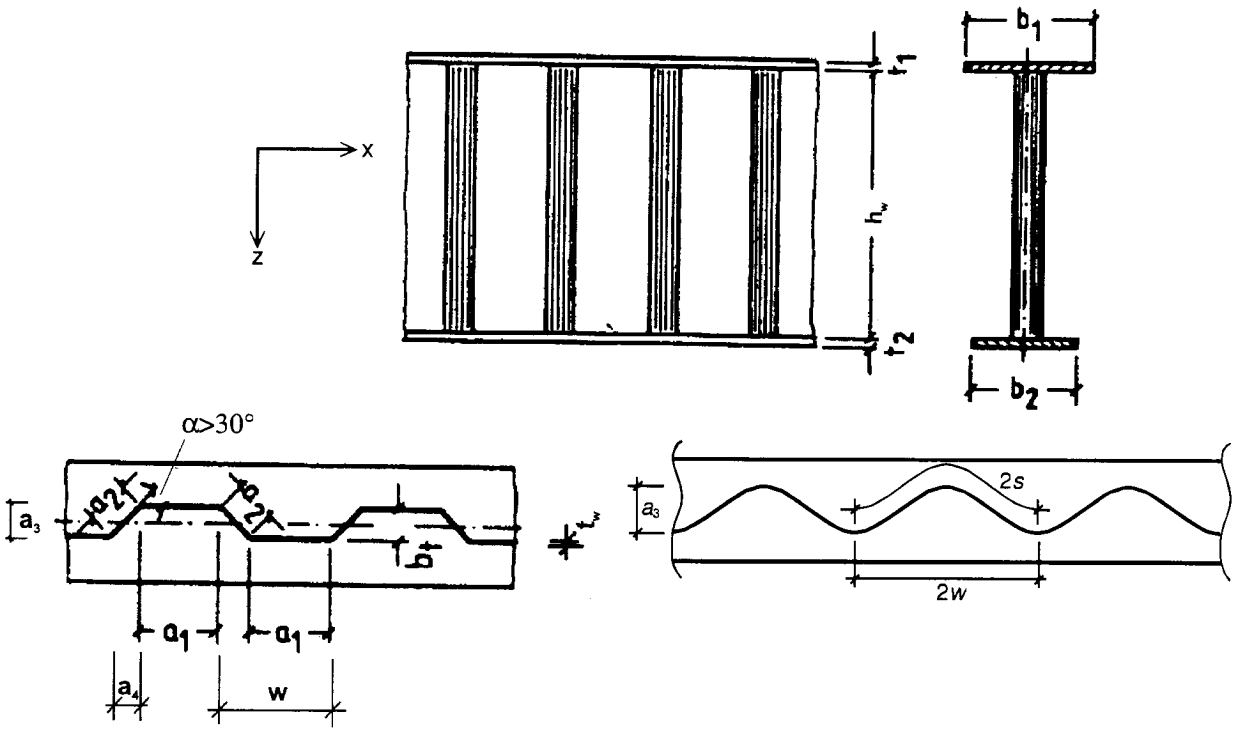

Figure D.1: Geometric notations

D.2 Ultimate limit state

D.2.1 Moment of resistance

(1) The moment of resistance M_{Rd} due to bending should be taken as the minimum of the following:

$$M_{Rd} = \min\left\{ \underbrace{\frac{b_2 t_2 f_{yf,r}}{\gamma_{M0}}\left(h_w + \frac{t_1+t_2}{2}\right)}_{\text{tension flange}}; \underbrace{\frac{b_1 t_1 f_{yf,r}}{\gamma_{M0}}\left(h_w + \frac{t_1+t_2}{2}\right)}_{\text{compression flange}}; \underbrace{\frac{b_1 t_1 \chi f_{yf}}{\gamma_{M1}}\left(h_w + \frac{t_1+t_2}{2}\right)}_{\text{compression flange}} \right\} \quad \text{(D.1)}$$

where $f_{yf,r}$ is the value of yield stress reduced due to transverse moments in the flanges

$$f_{yf,r} = f_{yf} f_T$$

$$f_T = 1 - 0{,}4\sqrt{\frac{\sigma_x(M_z)}{\frac{f_{yf}}{\gamma_{M0}}}}$$

$\sigma_x(M_z)$ is the stress due to the transverse moment in the flange

χ is the reduction factor for out of plane buckling according to 6.3 of EN 1993-1-1

NOTE 1: The transverse moment M_z results from the shear flow in flanges as indicated in Figure D.2.

NOTE 2: For sinusoidally corrugated webs f_T is 1,0.