



$$I = \text{MIN} [I = (R_{M,y,d} / (Y_g * g_k + Y_q * q_k) * 8) ^ { 1/2 } ;$$
$$I = R_{V,z,d} / (Y_g * g_k + Y_q * q_k) * 2 ;$$
$$I = (384 / 5 / \text{Zahl} / (g_k + q_k) * E * I_y) ^ { 1/3 } ;$$
$$I = (R_{M,y,d,fi} / (Y_{g,A} * g_k + \Psi_2 * q_k) * 8) ^ { 1/2 } ;$$
$$I = R_{V,z,d,fi} / (Y_{g,A} * g_k + \Psi_2 * q_k) * 2]$$

$$M_{y,d} = (Y_g * g_k + Y_q * q_k) * l ^ 2 / 8$$
$$V_{z,d} = (Y_g * g_k + Y_q * q_k) * l / 2$$
$$w_{inst} = 5 / 384 * (g_k + q_k) * l ^ 4 / (E * I_y)$$
$$M_{y,d,fi} = (Y_{g,A} * g_k + \Psi_2 * q_k) * l ^ 2 / 8$$
$$V_{z,d,fi} = (Y_{g,A} * g_k + \Psi_2 * q_k) * l / 2$$

Charakteristische Werte für Nadelholz

Festigkeitsklasse	C24 nach EN 338	
Biegung	$f_{m,k} =$	24 N/mm ²
Schub	$f_{v,k} =$	2 N/mm ²
Elastizitätsmodul parallel	$E_{0,mean} =$	11'000 N/mm ²

Formeln Nachweise