

DEFORMACE PROSTÉHO NOSNÍKU KONSTANTNÍHO PRŮŘEZU

N. řád	Schéma zatížení	Průhyb y $y_{\max} = f$	Pootočení podporových průřezů
1		$f = \frac{F a b \sqrt{3a(1+b)^3}}{27 E J l^3}$ $v x = \sqrt{\frac{3}{a(1+b)}}$	$\varphi_a = \frac{F b}{6 E J l} (1^2 - b^2)$ $\varphi_b = \frac{F a}{6 E J l} (1^2 - a^2)$
2		$f = \frac{F l^3}{48 E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{F l^2}{16 E J}$
3		$f = \frac{F l^3}{28,17 E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{F l^2}{9 E J}$
4		$f = \frac{F l^3}{20,22 E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{5}{32} \frac{F l^2}{E J}$
5		$f = \frac{F l^3}{15,73 E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{1}{5} \frac{F l^2}{E J}$
6		$f = \frac{F l^3}{13,05 E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{35}{144} \frac{F l^2}{E J}$
7		$f = \frac{F l^3}{24 E J} (3 \frac{a}{l} - 4 \frac{a^3}{l^3})$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{F a}{2 E J} (1-a)$
8		$f = \frac{11}{384} \frac{F l^3}{E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{3}{32} \frac{F l^2}{E J}$
9		$f = \frac{F l^3}{24,45 E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{19}{144} \frac{F l^2}{E J}$
10		$f = \frac{F l^3}{19,04 E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{33}{192} \frac{F l^2}{E J}$
11		$f = \frac{F l^3}{15,1 E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{51}{240} \frac{F l^2}{E J}$
12		$y = \frac{q a^3 b}{24 E J} (4 - 3 \frac{a}{l})$ $v x = a$	$\varphi_a = \frac{q a^2 l}{6 E J} (1 - \frac{a}{l})^2$ $\varphi_b = \frac{q a^2 l}{12 E J} (1 - \frac{a}{l})^2$
13		$y = \frac{q c}{6 E J} [\frac{a b}{l} (2 a l - 2 a^2 - \frac{c}{l}) + \frac{c^3}{6 l}]$ $v x = a$	$\varphi_a = \frac{q}{24 E J} \frac{b c}{l} [k a (1+b) - c]$ $\varphi_b = \frac{q}{24 E J} \frac{a c}{l} [4 b (1+a) - c]$
29		Δz_h Δz_d	$\Delta z_i = \Delta z_d - \Delta z_h$ $\varphi_a = \varphi_b = \frac{\alpha_T \cdot \Delta z_i \cdot L}{2 \cdot h}$

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14		$f = \frac{q l^4}{48 E J} \frac{a^2}{l^2} (3 - 2 \frac{a}{l})$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{q a^2}{12 E J} (3l - 2a)$
15		$f = \frac{5}{384} \frac{q l^4}{E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{1}{24} \frac{q l^3}{E J}$
16		$y = \frac{q a^2 l}{45 E J} (5 - 9 \frac{a}{l} + 4 \frac{a^3}{l^3})$ $v x = a$	$\varphi_a = \frac{q a^2 l}{360 E J} (40 - 45 \frac{a}{l} + 12 \frac{a^3}{l^3})$ $\varphi_b = \frac{q a^2 l}{90 E J} (5 - 3 \frac{a}{l})$
17		$y = \frac{q a^2 b l}{360 E J} (20 \frac{a}{l} - 13 \frac{a^3}{l^3})$ $v x = a$	$\varphi_a = \frac{q a^2 b l}{360 E J} (20 - 15 \frac{a}{l} + 3 \frac{a^3}{l^3})$ $\varphi_b = \frac{q a^2 l}{360 E J} (10 - 3 \frac{a}{l})$
18		$f = 0,00652 \frac{q l^4}{E J}$ $v x = 0,519 l$	$\varphi_a = \frac{7}{360} \frac{q l^3}{E J}$ $\varphi_b = \frac{8}{360} \frac{q l^3}{E J}$
19		$f = \frac{1}{120} \frac{q l^4}{E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{5}{192} \frac{q l^3}{E J}$
20		$f = \frac{3}{640} \frac{q l^4}{E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{1}{64} \frac{q l^3}{E J}$
21		$f = \frac{7}{1024} \frac{q l^4}{E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{17}{768} \frac{q l^3}{E J}$
22		$f = \frac{19}{3072} \frac{q l^4}{E J}$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{5}{256} \frac{q l^3}{E J}$
23		$f = \frac{5}{384} \frac{q l^4}{E J} (1 - \frac{8}{5} \frac{a^2}{l^2} + \frac{16}{25} \frac{a^4}{l^4})$ $v x = 0,5 l$	$\varphi_a = \varphi_b = \frac{q l^3}{24 E J} (1 - 2 \frac{a^2}{l^2} + \frac{a^4}{l^4})$
24		$f = 0,0065 (q_a + q_b) l^4$ $v x \text{ od } 0,5 l \text{ do } 0,519 l$	$\varphi_a = \frac{l^3}{360 E J} (8 q_a + 7 q_b)$ $\varphi_b = \frac{l^3}{360 E J} (7 q_a + 8 q_b)$
25		$y = \frac{M a b}{3 E J} \frac{a-b}{l}$ $v x = a$	$\varphi_a = \frac{M l}{6 E J} (1 - 3 \frac{a}{l})$ $\varphi_b = \frac{M l}{6 E J} (1 - 3 \frac{a}{l})$
26		$f = \frac{M l^2}{15,59 E J} = 0,0642 \frac{M l^2}{E J}$ $v x = 0,423 l$	$\varphi_a = \frac{M l}{3 E J}$ $\varphi_b = \frac{M l}{6 E J}$
27		$\varphi_a = -\varphi_b = -\frac{M \cdot L}{24 E I}$	
28		$\varphi_a = -\varphi_b = -\frac{W_b - W_a}{L}$	