

Työn nro		Rakennelaskelmat
Tekijä	HH	Pos.
Päiväys	27.12.16	Sivu
Rakennuskohde	Sisältö	

Lähde SFS-EN 1992-1-1 + FIN NA, FIB Model Code 2010, by 210 2008

Laatija Henri Huoso

LEIKKAUSTAPPIEN KESTÄVYYS, SAS 500 teräs

Pienennetyt osavarmuuskertoimet [kN]

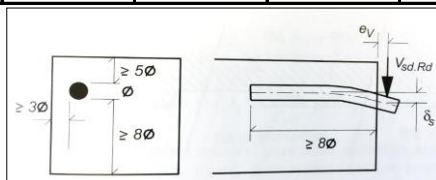
	T12	T14	T16	T20	T25	T28	T32	T40	T50
C12/15	9.9	13.5	17.7	27.6	43.2	54.2	70.8	110.7	173.0
C16/20	11.5	15.6	20.4	31.9	49.9	62.6	81.7	127.8	199.7
C20/25	12.8	17.4	22.8	35.6	55.7	69.9	91.4	142.8	223.2
C25/30	14.3	19.5	25.5	39.8	62.3	78.2	102.1	159.7	249.6
C30/37	15.7	21.3	27.9	43.6	68.2	85.6	111.9	174.9	273.3
C35/45	16.9	23.0	30.1	47.1	73.7	92.4	120.8	188.8	295.2
C40/50	18.1	24.6	32.2	50.3	78.7	98.8	129.1	201.9	315.5
C45/55	19.2	26.1	34.1	53.4	83.5	104.8	136.9	214.1	334.6
C50/60	20.2	27.5	36.0	56.3	88.0	110.4	144.3	225.6	352.7
C55/67	21.2	28.8	37.7	59.0	92.3	115.8	151.3	236.6	369.9
C60/75	22.1	30.1	39.4	61.6	96.4	120.9	158.0	247.1	386.3
C70/85	23.8	32.5	42.5	66.5	104.0	130.6	170.6	266.8	417.2
C80/95	25.5	34.7	45.4	71.1	111.2	139.5	182.4	285.2	445.9
C90/105	27.0	36.8	48.1	75.3	117.9	148.0	193.4	302.4	472.9

Normaalit osavarmuuskertoimet [kN]

	T12	T14	T16	T20	T25	T28	T32	T40	T50
C12/15	8.8	12.0	15.7	24.5	38.3	48.1	62.8	98.2	153.5
C16/20	10.2	13.9	18.1	28.3	44.3	55.5	72.6	113.4	177.2
C20/25	11.4	15.5	20.2	31.6	49.5	62.1	81.1	126.8	198.1
C25/30	12.7	17.3	22.6	35.4	55.3	69.4	90.6	141.7	221.5
C30/37	13.9	18.9	24.8	38.7	60.6	76.0	99.3	155.2	242.6
C35/45	15.0	20.5	26.7	41.8	65.4	82.1	107.2	167.6	262.0
C40/50	16.0	21.9	28.6	44.7	69.9	87.7	114.6	179.2	280.1
C45/55	17.0	23.2	30.3	47.4	74.1	93.0	121.5	190.0	297.0
C50/60	17.9	24.4	31.9	49.9	78.1	98.0	128.1	200.2	313.0
C55/67	18.8	25.6	33.5	52.4	81.9	102.8	134.3	210.0	328.3
C60/75	19.6	26.7	34.9	54.7	85.5	107.3	140.3	219.3	342.9
C70/85	21.2	28.9	37.7	59.0	92.3	115.9	151.5	236.8	370.3
C80/95	22.6	30.8	40.3	63.1	98.7	123.9	161.9	253.1	395.8
C90/105	24.0	32.7	42.7	66.9	104.6	131.3	171.7	268.4	419.7

Onnettomuustilanteen osavarmuuskertoimet [kN]

	T12	T14	T16	T20	T25	T28	T32	T40	T50
C12/15	13.3	18.1	23.7	37.0	57.9	72.6	94.9	148.3	230.3
C16/20	15.4	20.9	27.3	42.7	66.8	83.9	109.6	171.2	265.9
C20/25	17.2	23.4	30.5	47.8	74.7	93.7	122.5	191.4	297.3
C25/30	19.2	26.1	34.1	53.4	83.5	104.8	136.9	214.0	332.4
C30/37	21.0	28.6	37.4	58.5	91.4	114.7	149.9	234.3	364.1
C35/45	22.7	30.9	40.3	63.1	98.7	123.9	161.9	253.1	393.3
C40/50	24.2	33.0	43.1	67.5	105.5	132.4	173.0	270.5	420.5
C45/55	25.7	35.0	45.7	71.5	111.9	140.4	183.5	286.9	446.0
C50/60	27.0	36.8	48.2	75.4	117.9	148.0	193.4	302.3	470.1
C55/67	28.3	38.6	50.5	79.0	123.6	155.2	202.8	317.1	493.0
C60/75	29.6	40.3	52.7	82.5	129.1	162.0	211.7	331.1	515.0
C70/85	31.9	43.5	56.9	89.1	139.4	175.0	228.6	357.6	556.2
C80/95	32.6	44.4	58.0	90.7	141.7	177.8	232.2	362.8	566.8
C90/105	32.6	44.4	58.0	90.7	141.7	177.8	232.2	362.8	566.8



$$V_{sd,Rd} = \frac{1,3}{\gamma_v} \phi^2 \left(\sqrt{1 + (1,3\varepsilon)^2} - 1,3\varepsilon \right) \sqrt{f_{cd} f_{sd} (1 - \zeta^2)} < \frac{A_s f_{sd}}{\sqrt{3}}$$

$$\varepsilon = 3 \frac{e_v}{\phi} \sqrt{\frac{f_{cd}}{f_{sd}}}, \quad \zeta = \frac{\sigma_s}{f_{sd}}$$