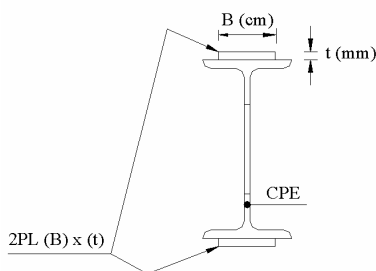


مقاطع CPE



- مساحت مقطع : A
- سختی پیچشی مقطع : J
- ممان اینرسی مقطع : I_3, I_2
- مساحت موثر برشی : AV_2, AV_3
- اساس مقطع : S_3, S_2
- مدول پلاستیک مقطع : Z_3, Z_2
- شعاع ژیراسیون مقطع : R_3, R_2

با توجه به آنکه در تیرهای لانه زنبوری در محل‌های بحرانی برش، از ورق تقویتی جان استفاده می‌شود، AV_2 این مقاطع در قسمت توپر محاسبه شده است.

NAME (نام مقطع)	A Cm ²	J Cm ⁴	I ₃ Cm ⁴	I ₂ Cm ⁴	AV ₂ Cm ²	AV ₃ Cm ²	S ₃ Cm ³	S ₂ Cm ³	Z ₃ Cm ³	Z ₂ Cm ³	R ₃ Cm	R ₂ Cm
CPE140												
CPE140	13.12	1.72	1266.0	44.9	9.9	8.4	120.6	12.3	128.6	18.9	9.82	1.85
CPE140 + 2PL50×6	19.12	2.44	1966.0	57.4	9.9	13.4	177.1	15.7	193.4	26.4	10.14	1.73
CPE140 + 2PL50×8	21.12	3.43	2216.9	61.6	9.9	15.1	196.2	16.9	215.8	28.9	10.25	1.71
CPE140 + 2PL50×10	23.12	5.05	2476.8	65.7	9.9	16.7	215.4	18.0	238.6	31.4	10.35	1.69
CPE140 + 2PL50×12	25.12	7.48	2746.0	69.9	9.9	18.4	234.7	19.2	261.8	33.9	10.46	1.67
CPE140 + 2PL100×6	25.12	3.16	2666.0	144.9	9.9	18.4	240.2	29.0	258.2	48.9	10.30	2.40
CPE140 + 2PL100×8	29.12	5.13	3167.8	178.2	9.9	21.7	280.3	35.6	303.0	58.9	10.43	2.47
CPE140 + 2PL100×10	33.12	8.39	3687.7	211.6	9.9	25.1	320.7	42.3	348.6	68.9	10.55	2.53
CPE140 + 2PL100×12	37.12	13.24	4225.9	244.9	9.9	28.4	361.2	49.0	395.0	78.9	10.67	2.57
CPE160												
CPE160	16.08	2.69	2031.0	68.3	12.0	10.1	169.3	16.7	180.2	25.6	11.24	2.06
CPE160 + 2PL50×6	22.08	3.41	2938.9	80.8	12.0	15.1	233.2	19.7	254.0	33.1	11.54	1.91
CPE160 + 2PL50×8	24.08	4.40	3261.5	85.0	12.0	16.8	254.8	20.7	279.4	35.6	11.64	1.88
CPE160 + 2PL50×10	26.08	6.02	3594.3	89.1	12.0	18.4	276.5	21.7	305.2	38.1	11.74	1.85
CPE160 + 2PL50×12	28.08	8.45	3937.6	93.3	12.0	20.1	298.3	22.8	331.4	40.6	11.84	1.82
CPE160 + 2PL100×6	28.08	4.13	3846.8	168.3	12.0	20.1	305.3	33.7	327.8	55.6	11.70	2.45
CPE160 + 2PL100×8	32.08	6.10	4492.0	201.6	12.0	23.4	350.9	40.3	378.6	65.6	11.83	2.51
CPE160 + 2PL100×10	36.08	9.36	5157.7	235.0	12.0	26.8	396.7	47.0	430.2	75.6	11.96	2.55
CPE160 + 2PL100×12	40.08	14.21	5844.1	268.3	12.0	30.1	442.7	53.7	482.6	85.6	12.08	2.59
CPE180												
CPE180	19.12	3.47	3075.0	101.0	14.3	12.1	227.8	22.2	242.0	34.0	12.68	2.30
CPE180 + 2PL50×6	25.12	4.19	4217.8	113.5	14.3	17.1	299.1	24.9	324.8	41.5	12.96	2.13
CPE180 + 2PL50×8	27.12	5.18	4621.1	117.7	14.3	18.8	323.2	25.9	353.2	44.0	13.05	2.08
CPE180 + 2PL50×10	29.12	6.80	5035.8	121.8	14.3	20.5	347.3	26.8	382.0	46.5	13.15	2.05
CPE180 + 2PL50×12	31.12	9.23	5462.2	126.0	14.3	22.1	371.6	27.7	411.2	49.0	13.25	2.01
CPE180 + 2PL120×6	33.52	5.20	5817.8	273.8	14.3	24.1	412.6	45.6	440.7	77.2	13.17	2.86
CPE180 + 2PL120×8	38.32	7.57	6785.7	331.4	14.3	28.1	474.5	55.2	508.9	91.6	13.31	2.94
CPE180 + 2PL120×10	43.12	11.47	7781.0	389.0	14.3	32.1	536.6	64.8	578.0	106.0	13.43	3.00
CPE180 + 2PL120×12	47.92	17.29	8804.2	446.6	14.3	36.1	598.9	74.4	648.1	120.4	13.55	3.05

NAME (نام مقطع)	A Cm ²	J Cm ⁴	I ₃ Cm ⁴	I ₂ Cm ⁴	AV ₂ Cm ²	AV ₃ Cm ²	S ₃ Cm ³	S ₂ Cm ³	Z ₃ Cm ³	Z ₂ Cm ³	R ₃ Cm	R ₂ Cm
CPE200												
CPE200	22.80	5.25	4525.0	142.0	16.8	14.2	301.7	28.4	321.1	43.8	14.09	2.50
CPE200 + 2PL50×6	28.80	5.97	5929.7	154.5	16.8	19.2	380.1	30.9	412.9	51.3	14.35	2.32
CPE200 + 2PL50×8	30.80	6.96	6422.7	158.7	16.8	20.8	406.5	31.7	444.3	53.8	14.44	2.27
CPE200 + 2PL50×10	32.80	8.58	6928.3	162.8	16.8	22.5	433.0	32.6	476.1	56.3	14.53	2.23
CPE200 + 2PL50×12	34.80	11.01	7446.8	167.0	16.8	24.2	459.7	33.4	508.3	58.8	14.63	2.19
CPE200 + 2PL50×15	37.80	16.50	8248.8	173.3	16.8	26.7	499.9	34.7	557.3	62.6	14.77	2.14
CPE200 + 2PL80×6	32.40	6.40	6772.6	193.2	16.8	22.2	434.1	38.6	467.9	63.0	14.46	2.44
CPE200 + 2PL80×8	35.60	7.98	7561.3	210.3	16.8	24.8	478.6	42.1	518.2	69.4	14.57	2.43
CPE200 + 2PL80×10	38.80	10.58	8370.3	227.3	16.8	27.5	523.1	45.5	569.1	75.8	14.69	2.42
CPE200 + 2PL80×12	42.00	14.47	9199.8	244.4	16.8	30.2	567.9	48.9	620.6	82.2	14.80	2.41
CPE200 + 2PL80×15	46.80	23.25	10483.0	270.0	16.8	34.2	635.3	54.0	699.1	91.8	14.97	2.40
CPE200 + 2PL120×6	37.20	6.98	7896.3	314.8	16.8	26.2	506.2	52.5	541.4	87.0	14.57	2.91
CPE200 + 2PL120×8	42.00	9.35	9079.5	372.4	16.8	30.2	574.7	62.1	616.7	101.4	14.70	2.98
CPE200 + 2PL120×10	46.80	13.25	10293.0	430.0	16.8	34.2	643.3	71.7	693.1	115.8	14.83	3.03
CPE200 + 2PL120×12	51.60	19.07	11537.2	487.6	16.8	38.2	712.2	81.3	770.3	130.2	14.95	3.07
CPE200 + 2PL120×15	58.80	32.25	13462.0	574.0	16.8	44.2	815.9	95.7	888.1	151.8	15.13	3.12
CPE220												
CPE220	26.72	6.84	6468.0	205.0	19.5	16.9	392.0	37.3	415.4	57.2	15.56	2.77
CPE220 + 2PL50×6	32.72	7.56	8161.6	217.5	19.5	21.9	477.3	39.5	516.2	64.7	15.79	2.58
CPE220 + 2PL50×8	34.72	8.55	8753.3	221.7	19.5	23.5	506.0	40.3	550.6	67.2	15.88	2.53
CPE220 + 2PL50×10	36.72	10.17	9358.8	225.8	19.5	25.2	534.8	41.1	585.4	69.7	15.96	2.48
CPE220 + 2PL50×12	38.72	12.60	9978.4	230.0	19.5	26.9	563.7	41.8	620.6	72.2	16.05	2.44
CPE220 + 2PL50×15	41.72	18.09	10934.3	236.3	19.5	29.4	607.5	43.0	674.2	75.9	16.19	2.38
CPE220 + 2PL80×6	36.32	7.99	9177.8	256.2	19.5	24.9	536.7	46.6	576.7	76.4	15.90	2.66
CPE220 + 2PL80×8	39.52	9.57	10124.5	273.3	19.5	27.5	585.2	49.7	631.7	82.8	16.01	2.63
CPE220 + 2PL80×10	42.72	12.17	11093.3	290.3	19.5	30.2	633.9	52.8	687.4	89.2	16.11	2.61
CPE220 + 2PL80×12	45.92	16.06	12084.6	307.4	19.5	32.9	682.7	55.9	743.7	95.6	16.22	2.59
CPE220 + 2PL80×15	50.72	24.84	13614.0	333.0	19.5	36.9	756.3	60.5	829.4	105.2	16.38	2.56
CPE220 + 2PL150×6	44.72	9.00	11548.9	542.5	19.5	31.9	675.4	72.3	717.8	124.7	16.07	3.48
CPE220 + 2PL150×8	50.72	11.96	13323.9	655.0	19.5	36.9	770.2	87.3	821.0	147.2	16.21	3.59
CPE220 + 2PL150×10	56.72	16.84	15140.5	767.5	19.5	41.9	865.2	102.3	925.4	169.7	16.34	3.68
CPE220 + 2PL150×12	62.72	24.12	16999.1	880.0	19.5	46.9	960.4	117.3	1031.0	192.2	16.46	3.75
CPE220 + 2PL150×15	71.72	40.59	19866.8	1048.8	19.5	54.4	1103.7	139.8	1191.7	225.9	16.64	3.82
CPE240												
CPE240	31.28	9.02	9063.0	284.0	22.3	19.6	503.5	47.3	534.4	72.8	17.02	3.01
CPE240 + 2PL80×6	40.88	10.17	12278.2	335.2	22.3	27.6	660.1	55.9	710.1	92.0	17.33	2.86
CPE240 + 2PL80×8	44.08	11.75	13397.3	352.3	22.3	30.3	712.6	58.7	769.9	98.4	17.43	2.83
CPE240 + 2PL80×10	47.28	14.35	14540.3	369.3	22.3	32.9	765.3	61.6	830.4	104.8	17.54	2.79
CPE240 + 2PL80×12	50.48	18.24	15707.7	386.4	22.3	35.6	818.1	64.4	891.5	111.2	17.64	2.77
CPE240 + 2PL80×15	55.28	27.02	17505.0	412.0	22.3	39.6	897.7	68.7	984.4	120.8	17.79	2.73
CPE240 + 2PL100×6	43.28	10.46	13082.0	384.0	22.3	29.6	703.3	64.0	754.0	102.8	17.39	2.98
CPE240 + 2PL100×8	47.28	12.43	14480.8	417.3	22.3	32.9	770.3	69.6	828.8	112.8	17.50	2.97
CPE240 + 2PL100×10	51.28	15.69	15909.7	450.7	22.3	36.3	837.4	75.1	904.4	122.8	17.61	2.96
CPE240 + 2PL100×12	55.28	20.54	17368.9	484.0	22.3	39.6	904.6	80.7	980.8	132.8	17.73	2.96
CPE240 + 2PL100×15	61.28	31.52	19615.5	534.0	22.3	44.6	1005.9	89.0	1096.9	147.8	17.89	2.95
CPE240 + 2PL150×6	49.28	11.18	15091.6	621.5	22.3	34.6	811.4	82.9	863.8	140.3	17.50	3.55
CPE240 + 2PL150×8	55.28	14.14	17189.7	734.0	22.3	39.6	914.3	97.9	976.0	162.8	17.63	3.64
CPE240 + 2PL150×10	61.28	19.02	19333.0	846.5	22.3	44.6	1017.5	112.9	1089.4	185.3	17.76	3.72
CPE240 + 2PL150×12	67.28	26.30	21521.9	959.0	22.3	49.6	1120.9	127.9	1204.0	207.8	17.89	3.78
CPE240 + 2PL150×15	76.28	42.77	24891.8	1127.8	22.3	57.1	1276.5	150.4	1378.1	241.5	18.06	3.85

NAME (نام مقطع)	A Cm ²	J Cm ⁴	I ₃ Cm ⁴	I ₂ Cm ⁴	AV ₂ Cm ²	AV ₃ Cm ²	S ₃ Cm ³	S ₂ Cm ³	Z ₃ Cm ³	Z ₂ Cm ³	R ₃ Cm	R ₂ Cm
CPE270												
CPE270	36.72	12.12	13467.0	420.0	26.7	23.0	665.0	62.2	703.9	95.5	19.15	3.38
CPE270 + 2PL80×6	46.32	13.27	17521.4	471.2	26.7	31.0	840.4	69.8	901.2	114.7	19.45	3.19
CPE270 + 2PL80×8	49.52	14.85	18925.9	488.3	26.7	33.6	899.1	72.3	968.2	121.1	19.55	3.14
CPE270 + 2PL80×10	52.72	17.45	20357.3	505.3	26.7	36.3	958.0	74.9	1035.9	127.5	19.65	3.10
CPE270 + 2PL80×12	55.92	21.34	21816.0	522.4	26.7	39.0	1017.1	77.4	1104.2	133.9	19.75	3.06
CPE270 + 2PL80×15	60.72	30.12	24055.5	548.0	26.7	43.0	1106.0	81.2	1207.9	143.5	19.90	3.00
CPE270 + 2PL100×6	48.72	13.56	18535.0	520.0	26.7	33.0	889.0	77.0	950.5	125.5	19.50	3.27
CPE270 + 2PL100×8	52.72	15.53	20290.6	553.3	26.7	36.3	963.9	82.0	1034.3	135.5	19.62	3.24
CPE270 + 2PL100×10	56.72	18.79	22079.9	586.7	26.7	39.6	1039.1	86.9	1118.9	145.5	19.73	3.22
CPE270 + 2PL100×12	60.72	23.64	23903.2	620.0	26.7	43.0	1114.4	91.9	1204.3	155.5	19.84	3.20
CPE270 + 2PL100×15	66.72	34.62	26702.6	670.0	26.7	48.0	1227.7	99.3	1333.9	170.5	20.01	3.17
CPE270 + 2PL150×6	54.72	14.28	21069.0	757.5	26.7	38.0	1010.5	101.0	1073.8	163.0	19.62	3.72
CPE270 + 2PL150×8	60.72	17.24	23702.4	870.0	26.7	43.0	1126.0	116.0	1199.5	185.5	19.76	3.79
CPE270 + 2PL150×10	66.72	22.12	26386.4	982.5	26.7	48.0	1241.7	131.0	1326.4	208.0	19.89	3.84
CPE270 + 2PL150×12	72.72	29.40	29121.3	1095.0	26.7	53.0	1357.6	146.0	1454.5	230.5	20.01	3.88
CPE270 + 2PL150×15	81.72	45.87	33320.4	1263.8	26.7	60.5	1532.0	168.5	1648.9	264.2	20.19	3.93
CPE300												
CPE300	43.04	14.83	19407.0	604.0	32.0	26.8	862.5	80.5	912.1	123.3	21.23	3.75
CPE300 + 2PL100×6	55.04	16.27	25645.4	704.0	32.0	36.8	1110.2	93.9	1185.7	153.3	21.59	3.58
CPE300 + 2PL100×8	59.04	18.24	27798.4	737.3	32.0	40.1	1193.1	98.3	1278.5	163.3	21.70	3.53
CPE300 + 2PL100×10	63.04	21.50	29988.7	770.7	32.0	43.4	1276.1	102.8	1372.1	173.3	21.81	3.50
CPE300 + 2PL100×12	67.04	26.35	32216.5	804.0	32.0	46.8	1359.3	107.2	1466.5	183.3	21.92	3.46
CPE300 + 2PL100×15	73.04	37.33	35629.5	854.0	32.0	51.8	1484.6	113.9	1609.6	198.3	22.09	3.42
CPE300 + 2PL120×6	57.44	16.56	26893.1	776.8	32.0	38.8	1164.2	103.6	1240.5	166.5	21.64	3.68
CPE300 + 2PL120×8	62.24	18.93	29476.7	834.4	32.0	42.8	1265.1	111.3	1351.8	180.9	21.76	3.66
CPE300 + 2PL120×10	67.04	22.83	32105.0	892.0	32.0	46.8	1366.2	118.9	1464.1	195.3	21.88	3.65
CPE300 + 2PL120×12	71.84	28.65	34778.4	949.6	32.0	50.8	1467.4	126.6	1577.4	209.7	22.00	3.64
CPE300 + 2PL120×15	79.04	41.83	38874.0	1036.0	32.0	56.8	1619.8	138.1	1749.1	231.3	22.18	3.62
CPE300 + 2PL180×6	64.64	17.42	30636.2	1187.2	32.0	44.8	1326.2	131.9	1404.6	220.5	21.77	4.29
CPE300 + 2PL180×8	71.84	20.97	34511.5	1381.6	32.0	50.8	1481.2	153.5	1571.7	252.9	21.92	4.39
CPE300 + 2PL180×10	79.04	26.83	38454.0	1576.0	32.0	56.8	1636.3	175.1	1740.1	285.3	22.06	4.47
CPE300 + 2PL180×12	86.24	35.57	42464.1	1770.4	32.0	62.8	1791.7	196.7	1910.1	317.7	22.19	4.53
CPE300 + 2PL180×15	97.04	55.33	48607.5	2062.0	32.0	71.8	2025.3	229.1	2167.6	366.3	22.38	4.61