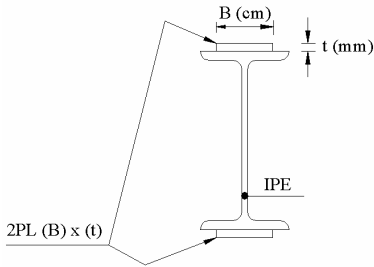


## IPE مقاطع



- 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 :  $R_3, R_2$

NAME (نام مقطع)	A Cm <sup>2</sup>	J Cm <sup>4</sup>	I <sub>3</sub> Cm <sup>4</sup>	I <sub>2</sub> Cm <sup>4</sup>	AV <sub>2</sub> Cm <sup>2</sup>	AV <sub>3</sub> Cm <sup>2</sup>	S <sub>3</sub> Cm <sup>3</sup>	S <sub>2</sub> Cm <sup>3</sup>	Z <sub>3</sub> Cm <sup>3</sup>	Z <sub>2</sub> Cm <sup>3</sup>	R <sub>3</sub> Cm	R <sub>2</sub> Cm
<b>IPE140</b>												
IPE140	16.40	2.45	541.0	44.9	6.6	8.4	77.3	12.3	88.3	19.2	5.74	1.65
IPE140 + 2PL50×6	22.40	3.17	860.9	57.4	6.6	13.4	113.3	15.7	132.1	26.7	6.20	1.60
IPE140 + 2PL50×8	24.40	4.16	979.5	61.6	6.6	15.1	125.6	16.9	147.5	29.2	6.34	1.59
IPE140 + 2PL50×10	26.40	5.78	1104.3	65.7	6.6	16.7	138.0	18.0	163.3	31.7	6.47	1.58
IPE140 + 2PL50×12	28.40	8.21	1235.6	69.9	6.6	18.4	150.7	19.2	179.5	34.2	6.60	1.57
IPE140 + 2PL100×6	28.40	3.89	1180.8	144.9	6.6	18.4	155.4	29.0	175.9	49.2	6.45	2.26
IPE140 + 2PL100×8	32.40	5.86	1418.0	178.2	6.6	21.7	181.8	35.6	206.7	59.2	6.62	2.35
IPE140 + 2PL100×10	36.40	9.12	1667.7	211.6	6.6	25.1	208.5	42.3	238.3	69.2	6.77	2.41
IPE140 + 2PL100×12	40.40	13.97	1930.1	244.9	6.6	28.4	235.4	49.0	270.7	79.2	6.91	2.46
<b>IPE160</b>												
IPE160	20.10	3.69	869.0	68.3	8.0	10.1	108.6	16.7	123.9	26.1	6.58	1.84
IPE160 + 2PL50×6	26.10	4.41	1282.5	80.8	8.0	15.1	149.1	19.7	173.7	33.6	7.01	1.76
IPE160 + 2PL50×8	28.10	5.40	1433.9	85.0	8.0	16.8	162.9	20.7	191.1	36.1	7.14	1.74
IPE160 + 2PL50×10	30.10	7.02	1592.3	89.1	8.0	18.4	176.9	21.7	208.9	38.6	7.27	1.72
IPE160 + 2PL50×12	32.10	9.45	1758.0	93.3	8.0	20.1	191.1	22.8	227.1	41.1	7.40	1.70
IPE160 + 2PL100×6	32.10	5.13	1696.0	168.3	8.0	20.1	197.2	33.7	223.5	56.1	7.27	2.29
IPE160 + 2PL100×8	36.10	7.10	1998.8	201.6	8.0	23.4	227.1	40.3	258.3	66.1	7.44	2.36
IPE160 + 2PL100×10	40.10	10.36	2315.7	235.0	8.0	26.8	257.3	47.0	293.9	76.1	7.60	2.42
IPE160 + 2PL100×12	44.10	15.21	2646.9	268.3	8.0	30.1	287.7	53.7	330.3	86.1	7.75	2.47
<b>IPE180</b>												
IPE180	23.90	4.81	1320.0	101.0	9.5	12.1	146.7	22.2	166.4	34.6	7.43	2.06
IPE180 + 2PL50×6	29.90	5.53	1839.1	113.5	9.5	17.1	191.6	24.9	222.2	42.1	7.84	1.95
IPE180 + 2PL50×8	31.90	6.52	2027.3	117.7	9.5	18.8	206.9	25.9	241.6	44.6	7.97	1.92
IPE180 + 2PL50×10	33.90	8.14	2223.3	121.8	9.5	20.5	222.3	26.8	261.4	47.1	8.10	1.90
IPE180 + 2PL50×12	35.90	10.57	2427.4	126.0	9.5	22.1	238.0	27.7	281.6	49.6	8.22	1.87
IPE180 + 2PL120×6	38.30	6.54	2565.9	273.8	9.5	24.1	267.3	45.6	300.3	77.8	8.19	2.67
IPE180 + 2PL120×8	43.10	8.91	3017.5	331.4	9.5	28.1	307.9	55.2	346.9	92.2	8.37	2.77
IPE180 + 2PL120×10	47.90	12.81	3488.0	389.0	9.5	32.1	348.8	64.8	394.4	106.6	8.53	2.85
IPE180 + 2PL120×12	52.70	18.63	3977.7	446.6	9.5	36.1	390.0	74.4	442.9	121.0	8.69	2.91

NAME (نام مقطع)	A Cm <sup>2</sup>	J Cm <sup>4</sup>	I <sub>3</sub> Cm <sup>4</sup>	I <sub>2</sub> Cm <sup>4</sup>	AV <sub>2</sub> Cm <sup>2</sup>	AV <sub>3</sub> Cm <sup>2</sup>	S <sub>3</sub> Cm <sup>3</sup>	S <sub>2</sub> Cm <sup>3</sup>	Z <sub>3</sub> Cm <sup>3</sup>	Z <sub>2</sub> Cm <sup>3</sup>	R <sub>3</sub> Cm	R <sub>2</sub> Cm
<b>IPE200</b>												
IPE200	28.50	7.01	1940.0	142.0	11.2	14.2	194.0	28.4	220.6	44.6	8.25	2.23
IPE200 + 2PL50×6	34.50	7.73	2576.7	154.5	11.2	19.2	243.1	30.9	282.4	52.1	8.64	2.12
IPE200 + 2PL50×8	36.50	8.72	2805.7	158.7	11.2	20.8	259.8	31.7	303.8	54.6	8.77	2.08
IPE200 + 2PL50×10	38.50	10.34	3043.3	162.8	11.2	22.5	276.7	32.6	325.6	57.1	8.89	2.06
IPE200 + 2PL50×12	40.50	12.77	3289.8	167.0	11.2	24.2	293.7	33.4	347.8	59.6	9.01	2.03
IPE200 + 2PL50×15	43.50	18.26	3676.3	173.3	11.2	26.7	319.7	34.7	381.9	63.4	9.19	2.00
IPE200 + 2PL80×6	38.10	8.16	2958.8	193.2	11.2	22.2	279.1	38.6	319.5	63.8	8.81	2.25
IPE200 + 2PL80×8	41.30	9.74	3325.1	210.3	11.2	24.8	307.9	42.1	353.8	70.2	8.97	2.26
IPE200 + 2PL80×10	44.50	12.34	3705.3	227.3	11.2	27.5	336.8	45.5	388.6	76.6	9.13	2.26
IPE200 + 2PL80×12	47.70	16.23	4099.6	244.4	11.2	30.2	366.0	48.9	424.2	83.0	9.27	2.26
IPE200 + 2PL80×15	52.50	25.01	4718.0	270.0	11.2	34.2	410.3	54.0	478.6	92.6	9.48	2.27
IPE200 + 2PL120×6	42.90	8.74	3468.1	314.8	11.2	26.2	327.2	52.5	369.0	87.8	8.99	2.71
IPE200 + 2PL120×8	47.70	11.11	4017.7	372.4	11.2	30.2	372.0	62.1	420.3	102.2	9.18	2.79
IPE200 + 2PL120×10	52.50	15.01	4588.0	430.0	11.2	34.2	417.1	71.7	472.6	116.6	9.35	2.86
IPE200 + 2PL120×12	57.30	20.83	5179.4	487.6	11.2	38.2	462.4	81.3	525.9	131.0	9.51	2.92
IPE200 + 2PL120×15	64.50	34.01	6107.0	574.0	11.2	44.2	531.0	95.7	607.6	152.6	9.73	2.98
<b>IPE220</b>												
IPE220	33.40	9.10	2770.0	205.0	13.0	16.9	251.8	37.3	285.4	58.1	9.11	2.48
IPE220 + 2PL50×6	39.40	9.82	3536.3	217.5	13.0	21.9	304.9	39.5	353.2	65.6	9.47	2.35
IPE220 + 2PL50×8	41.40	10.81	3810.1	221.7	13.0	23.5	322.9	40.3	376.6	68.1	9.59	2.31
IPE220 + 2PL50×10	43.40	12.43	4093.3	225.8	13.0	25.2	341.1	41.1	400.4	70.6	9.71	2.28
IPE220 + 2PL50×12	45.40	14.86	4386.2	230.0	13.0	26.9	359.5	41.8	424.6	73.1	9.83	2.25
IPE220 + 2PL50×15	48.40	20.35	4843.8	236.3	13.0	29.4	387.5	43.0	461.7	76.9	10.00	2.21
IPE220 + 2PL80×6	43.00	10.25	3996.1	256.2	13.0	24.9	344.5	46.6	393.9	77.3	9.64	2.44
IPE220 + 2PL80×8	46.20	11.83	4434.2	273.3	13.0	27.5	375.8	49.7	431.3	83.7	9.80	2.43
IPE220 + 2PL80×10	49.40	14.43	4887.3	290.3	13.0	30.2	407.3	52.8	469.4	90.1	9.95	2.42
IPE220 + 2PL80×12	52.60	18.32	5355.9	307.4	13.0	32.9	439.0	55.9	508.1	96.5	10.09	2.42
IPE220 + 2PL80×15	57.40	27.10	6088.0	333.0	13.0	36.9	487.0	60.5	567.4	106.1	10.30	2.41
IPE220 + 2PL150×6	51.40	11.26	5069.0	542.5	13.0	31.9	437.0	72.3	488.8	125.6	9.93	3.25
IPE220 + 2PL150×8	57.40	14.22	5890.3	655.0	13.0	36.9	499.2	87.3	559.0	148.1	10.13	3.38
IPE220 + 2PL150×10	63.40	19.10	6740.0	767.5	13.0	41.9	561.7	102.3	630.4	170.6	10.31	3.48
IPE220 + 2PL150×12	69.40	26.38	7618.5	880.0	13.0	46.9	624.5	117.3	703.0	193.1	10.48	3.56
IPE220 + 2PL150×15	78.40	42.85	8991.3	1048.8	13.0	54.4	719.3	139.8	814.2	226.9	10.71	3.66
<b>IPE240</b>												
IPE240	39.10	12.90	3890.0	284.0	14.9	19.6	324.2	47.3	366.6	73.9	9.97	2.70
IPE240 + 2PL80×6	48.70	14.05	5342.7	335.2	14.9	27.6	424.0	55.9	484.7	93.1	10.47	2.62
IPE240 + 2PL80×8	51.90	15.63	5858.8	352.3	14.9	30.3	457.7	58.7	525.4	99.5	10.62	2.61
IPE240 + 2PL80×10	55.10	18.23	6391.3	369.3	14.9	32.9	491.6	61.6	566.6	105.9	10.77	2.59
IPE240 + 2PL80×12	58.30	22.12	6940.5	386.4	14.9	35.6	525.8	64.4	608.6	112.3	10.91	2.57
IPE240 + 2PL80×15	63.10	30.90	7796.0	412.0	14.9	39.6	577.5	68.7	672.6	121.9	11.12	2.56
IPE240 + 2PL100×6	51.10	14.34	5705.8	384.0	14.9	29.6	452.8	64.0	514.2	103.9	10.57	2.74
IPE240 + 2PL100×8	55.10	16.31	6351.0	417.3	14.9	32.9	496.2	69.6	565.0	113.9	10.74	2.75
IPE240 + 2PL100×10	59.10	19.57	7016.7	450.7	14.9	36.3	539.7	75.1	616.6	123.9	10.90	2.76
IPE240 + 2PL100×12	63.10	24.42	7703.1	484.0	14.9	39.6	583.6	80.7	669.0	133.9	11.05	2.77
IPE240 + 2PL100×15	69.10	35.40	8772.5	534.0	14.9	44.6	649.8	89.0	749.1	148.9	11.27	2.78
IPE240 + 2PL150×6	57.10	15.06	6613.8	621.5	14.9	34.6	524.9	82.9	588.0	141.4	10.76	3.30
IPE240 + 2PL150×8	63.10	18.02	7581.5	734.0	14.9	39.6	592.3	97.9	664.2	163.9	10.96	3.41
IPE240 + 2PL150×10	69.10	22.90	8580.0	846.5	14.9	44.6	660.0	112.9	741.6	186.4	11.14	3.50
IPE240 + 2PL150×12	75.10	30.18	9609.7	959.0	14.9	49.6	728.0	127.9	820.2	208.9	11.31	3.57
IPE240 + 2PL150×15	84.10	46.65	11213.8	1127.8	14.9	57.1	830.6	150.4	940.4	242.7	11.55	3.66

NAME (نام مقطع)	A Cm <sup>2</sup>	J Cm <sup>4</sup>	I <sub>3</sub> Cm <sup>4</sup>	I <sub>2</sub> Cm <sup>4</sup>	AV <sub>2</sub> Cm <sup>2</sup>	AV <sub>3</sub> Cm <sup>2</sup>	S <sub>3</sub> Cm <sup>3</sup>	S <sub>2</sub> Cm <sup>3</sup>	Z <sub>3</sub> Cm <sup>3</sup>	Z <sub>2</sub> Cm <sup>3</sup>	R <sub>3</sub> Cm	R <sub>2</sub> Cm
<b>IPE270</b>												
IPE270	45.90	16.00	5790.0	420.0	17.8	23.0	428.9	62.2	484.0	97.0	11.23	3.02
IPE270 + 2PL80×6	55.50	17.15	7618.5	471.2	17.8	31.0	540.3	69.8	616.5	116.2	11.72	2.91
IPE270 + 2PL80×8	58.70	18.73	8263.8	488.3	17.8	33.6	577.9	72.3	661.9	122.6	11.87	2.88
IPE270 + 2PL80×10	61.90	21.33	8927.3	505.3	17.8	36.3	615.7	74.9	708.0	129.0	12.01	2.86
IPE270 + 2PL80×12	65.10	25.22	9609.5	522.4	17.8	39.0	653.7	77.4	754.7	135.4	12.15	2.83
IPE270 + 2PL80×15	69.90	34.00	10668.0	548.0	17.8	43.0	711.2	81.2	826.0	145.0	12.35	2.80
IPE270 + 2PL100×6	57.90	17.44	8075.6	520.0	17.8	33.0	572.7	77.0	649.6	127.0	11.81	3.00
IPE270 + 2PL100×8	61.90	19.41	8882.2	553.3	17.8	36.3	621.1	82.0	706.4	137.0	11.98	2.99
IPE270 + 2PL100×10	65.90	22.67	9711.7	586.7	17.8	39.6	669.8	86.9	764.0	147.0	12.14	2.98
IPE270 + 2PL100×12	69.90	27.52	10564.3	620.0	17.8	43.0	718.7	91.9	822.4	157.0	12.29	2.98
IPE270 + 2PL100×15	75.90	38.50	11887.5	670.0	17.8	48.0	792.5	99.3	911.5	172.0	12.51	2.97
IPE270 + 2PL150×6	63.90	18.16	9218.5	757.5	17.8	38.0	653.8	101.0	732.4	164.5	12.01	3.44
IPE270 + 2PL150×8	69.90	21.12	10428.3	870.0	17.8	43.0	729.3	116.0	817.6	187.0	12.21	3.53
IPE270 + 2PL150×10	75.90	26.00	11672.5	982.5	17.8	48.0	805.0	131.0	904.0	209.5	12.40	3.60
IPE270 + 2PL150×12	81.90	33.28	12951.5	1095.0	17.8	53.0	881.1	146.0	991.6	232.0	12.58	3.66
IPE270 + 2PL150×15	90.90	49.75	14936.3	1263.8	17.8	60.5	995.8	168.5	1125.2	265.7	12.82	3.73
<b>IPE300</b>												
IPE300	53.80	20.20	8360.0	604.0	21.3	26.8	557.3	80.5	628.4	125.2	12.47	3.35
IPE300 + 2PL100×6	65.80	21.64	11169.4	704.0	21.3	36.8	716.0	93.9	812.0	155.2	13.03	3.27
IPE300 + 2PL100×8	69.80	23.61	12155.4	737.3	21.3	40.1	769.3	98.3	874.8	165.2	13.20	3.25
IPE300 + 2PL100×10	73.80	26.87	13166.7	770.7	21.3	43.4	822.9	102.8	938.4	175.2	13.36	3.23
IPE300 + 2PL100×12	77.80	31.72	14203.5	804.0	21.3	46.8	876.8	107.2	1002.8	185.2	13.51	3.21
IPE300 + 2PL100×15	83.80	42.70	15807.5	854.0	21.3	51.8	958.0	113.9	1100.9	200.2	13.73	3.19
IPE300 + 2PL120×6	68.20	21.93	11731.3	776.8	21.3	38.8	752.0	103.6	848.7	168.4	13.12	3.37
IPE300 + 2PL120×8	73.00	24.30	12914.5	834.4	21.3	42.8	817.4	111.3	924.0	182.8	13.30	3.38
IPE300 + 2PL120×10	77.80	28.20	14128.0	892.0	21.3	46.8	883.0	118.9	1000.4	197.2	13.48	3.39
IPE300 + 2PL120×12	82.60	34.02	15372.2	949.6	21.3	50.8	948.9	126.6	1077.6	211.6	13.64	3.39
IPE300 + 2PL120×15	89.80	47.20	17297.0	1036.0	21.3	56.8	1048.3	138.1	1195.4	233.2	13.88	3.40
IPE300 + 2PL180×6	75.40	22.79	13417.0	1187.2	21.3	44.8	860.1	131.9	958.8	222.4	13.34	3.97
IPE300 + 2PL180×8	82.60	26.34	15191.7	1381.6	21.3	50.8	961.5	153.5	1071.9	254.8	13.56	4.09
IPE300 + 2PL180×10	89.80	32.20	17012.0	1576.0	21.3	56.8	1063.3	175.1	1186.4	287.2	13.76	4.19
IPE300 + 2PL180×12	97.00	40.94	18878.3	1770.4	21.3	62.8	1165.3	196.7	1302.3	319.6	13.95	4.27
IPE300 + 2PL180×15	107.80	60.70	21765.5	2062.0	21.3	71.8	1319.1	229.1	1478.9	368.2	14.21	4.37