



SIN Beam Bending Capacity - Laterally Unsupported

Metric

Depth of Web h_w (mm)	Flange			Factored Moment Resistance M_r' (kN m)														
	Width b_f (mm)	Thickness t_f (mm)		Unbraced Length (mm)														
				1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	14000
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>
333	127	x	6	-	83.6	76.1	67.3	57.3	45.1	30.2	22.1	17.2	14.0	11.7	10.0	8.8	7.8	6.4
	152	x		-	-	85.0	76.7	67.2	55.5	37.1	27.0	20.9	16.8	14.0	12.0	10.5	9.3	7.5
	152	x	8	-	-	124.1	115.0	104.7	93.3	66.3	48.6	37.9	30.8	25.8	22.2	19.5	17.3	14.2
	152	x	10	-	-	149.6	139.1	127.4	114.6	84.3	62.8	49.6	40.8	34.6	30.0	26.5	23.7	19.6
	178	x		-	-	-	172.9	162.3	150.7	124.7	93.9	73.3	59.6	50.1	43.2	37.9	33.7	27.7
	152	x	13	-	-	201.2	188.7	174.9	160.2	127.1	97.0	78.2	65.5	56.4	49.5	44.1	39.9	33.4
	178	x		-	-	-	232.8	220.1	206.4	176.8	142.0	113.2	93.9	80.2	69.9	62.1	55.8	46.5
	203	x		-	-	-	-	264.3	251.5	223.5	193.2	157.4	129.4	109.6	95.1	83.9	75.1	62.2
	152	x	19	-	-	-	292.6	276.7	260.4	227.3	191.1	158.0	134.9	117.8	104.7	94.2	85.7	72.7
	203	x	16	-	-	-	-	334.1	319.8	289.3	257.2	223.5	186.3	159.7	139.8	124.4	112.1	93.7
	203	x	19	-	-	-	-	405.4	390.1	358.1	325.2	292.0	254.8	220.2	194.0	173.6	157.1	132.2
	254	x		-	-	-	-	-	-	487.7	455.8	423.0	389.9	356.7	318.5	282.9	254.6	212.5
	203	x	25	-	-	-	-	-	535.8	502.6	469.2	436.0	403.1	370.5	331.4	298.3	271.3	229.9
	254	x		-	-	-	-	-	-	669.8	636.6	603.1	569.8	536.7	503.9	471.3	433.7	365.5
	279	x		-	-	-	-	-	-	-	720.2	686.8	653.4	620.2	587.1	554.3	521.7	446.7
	305	x		-	-	-	-	-	-	-	803.8	770.5	737.1	703.8	670.5	637.5	604.7	537.3
	254	x	32	-	-	-	-	-	-	-	824.8	791.3	758.2	725.3	692.7	660.4	628.2	561.9
	330	x	25	-	-	-	-	-	-	-	-	854.2	820.8	787.4	754.1	720.9	687.9	622.4
	356	x		-	-	-	-	-	-	-	-	937.7	904.5	871.1	837.7	804.4	771.3	705.5
	305	x	32	-	-	-	-	-	-	-	-	996.4	962.9	929.7	896.7	863.9	831.3	766.7
	406	x	25	-	-	-	-	-	-	-	-	-	1071.7	1038.5	1005.1	971.7	938.3	872.0
	356	x	32	-	-	-	-	-	-	-	-	-	1168.1	1134.6	1101.2	1068.1	1035.1	969.8
	406	x		-	-	-	-	-	-	-	-	-	-	1339.8	1306.2	1272.8	1239.6	1173.6
	450	x		-	-	-	-	-	-	-	-	-	-	-	1482.4	1448.8	1415.4	1349.0

Factored Shear Resistance V_r (kN)							
Depth	WT0	WTA	WTB	WTC	WTF	WTH	WTK
<i>aa</i>	<i>bb</i>	<i>cc</i>	<i>dd</i>	<i>ee</i>	<i>ff</i>	<i>gg</i>	<i>hh</i>
333	60.5	80.2	121.8	143.5	210.0	249.1	306.5





SIN Beam Bending Capacity - Laterally Unsupported

Metric

Depth of Web h_w (mm)	Flange			Factored Moment Resistance M_r' (kN m)														
	Width b_f (mm)	Thickness t_f (mm)		Unbraced Length (mm)														
				1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	14000
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>
440	127	x	6	-	110.1	100.0	87.8	73.5	57.0	37.6	27.0	20.6	16.5	13.6	11.5	9.9	8.7	7.0
	152	x		-	-	111.8	100.4	87.2	70.5	46.4	33.2	25.2	20.0	16.5	13.9	11.9	10.5	8.3
	152	x	8	-	-	163.3	150.7	136.2	119.9	82.0	59.1	45.2	36.1	29.8	25.3	21.9	19.3	15.5
	152	x	10	-	-	196.5	181.8	165.0	146.3	102.4	74.6	57.8	46.7	39.0	33.3	29.1	25.8	21.0
	178	x		-	-	-	226.9	212.1	195.4	157.3	113.7	87.1	69.7	57.7	48.9	42.4	37.3	30.1
	152	x	13	-	-	263.5	245.2	224.7	202.2	149.0	111.1	87.7	72.2	61.3	53.2	47.0	42.1	34.9
	178	x		-	-	-	304.6	286.1	265.7	220.1	165.9	129.6	105.6	88.8	76.5	67.1	59.8	49.1
	203	x		-	-	-	-	345.6	327.0	284.9	237.1	183.4	148.1	123.5	105.7	92.2	81.7	66.5
	152	x	19	-	-	400.9	377.4	352.0	325.2	269.2	207.8	169.1	142.5	123.3	108.7	97.3	88.1	74.2
	203	x	16	-	-	-	-	435.5	413.9	366.3	314.3	252.8	207.1	174.9	151.3	133.3	119.1	98.3
	203	x	19	-	-	-	-	527.0	503.2	451.6	396.7	334.4	277.1	236.4	206.2	182.9	164.4	136.9
	254	x		-	-	-	-	-	-	629.0	577.8	523.7	467.7	401.5	346.4	304.5	271.6	223.5
	203	x	25	-	-	-	-	714.7	687.9	632.0	574.4	516.4	452.0	390.8	344.4	308.1	278.9	234.8
	254	x		-	-	-	-	-	-	859.9	804.2	746.9	689.0	631.0	565.0	502.0	451.9	377.3
	279	x		-	-	-	-	-	-	972.8	918.3	861.8	804.3	746.3	688.3	621.5	557.9	463.6
	305	x		-	-	-	-	-	-	-	1031.9	976.3	919.3	861.6	803.6	745.6	678.0	560.9
	254	x	32	-	-	-	-	-	-	1099.7	1041.9	983.7	925.5	867.7	810.2	753.1	682.3	574.1
	330	x	25	-	-	-	-	-	-	-	1144.9	1090.4	1034.1	976.7	918.9	860.9	802.9	669.8
	356	x		-	-	-	-	-	-	-	-	1203.9	1148.4	1091.7	1034.1	976.2	918.2	791.0
	305	x	32	-	-	-	-	-	-	-	1319.6	1261.9	1203.7	1145.5	1087.4	1029.7	972.2	845.4
	406	x	25	-	-	-	-	-	-	-	-	1429.4	1375.9	1320.5	1263.9	1206.6	1148.8	1032.8
	356	x	32	-	-	-	-	-	-	-	-	1539.5	1481.9	1423.8	1365.5	1307.3	1249.4	1134.2
	406	x		-	-	-	-	-	-	-	-	-	1759.5	1701.9	1643.8	1585.6	1527.3	1411.3
	450	x		-	-	-	-	-	-	-	-	-	-	1940.1	1882.5	1824.4	1766.2	1649.8

Factored Shear Resistance V_r (kN)							
Depth	WT0	WTA	WTB	WTC	WTF	WTH	WTK
<i>aa</i>	<i>bb</i>	<i>cc</i>	<i>dd</i>	<i>ee</i>	<i>ff</i>	<i>gg</i>	<i>hh</i>
440	77.7	103.5	158.3	186.8	274.7	329.1	405.0





SIN Beam Bending Capacity - Laterally Unsupported

Metric

Depth of Web h_w (mm)	Flange			Factored Moment Resistance M_r' (kN m)														
	Width b_f (mm)	Thickness t_f (mm)		Unbraced Length (mm)														
				1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	14000
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>
500	127	x	6	-	125.0	113.4	99.4	82.5	63.8	41.9	29.9	22.7	18.0	14.7	12.4	10.6	9.3	7.4
	152	x		-	-	126.8	113.7	98.5	79.1	51.7	36.8	27.8	22.0	17.9	15.0	12.9	11.2	8.8
	152	x	8	-	-	185.3	170.8	153.9	134.9	91.2	65.3	49.6	39.3	32.3	27.2	23.4	20.5	16.3
	152	x	10	-	-	222.8	205.8	186.2	164.2	113.0	81.7	62.7	50.3	41.7	35.4	30.7	27.1	21.9
	178	x		-	-	-	257.3	240.1	220.7	174.9	125.3	95.3	75.8	62.2	52.5	45.2	39.6	31.6
	152	x	13	-	-	298.6	277.1	252.7	225.8	162.2	119.6	93.6	76.4	64.4	55.5	48.8	43.5	35.8
	178	x		-	-	-	345.0	323.3	299.1	244.4	180.4	139.6	112.8	94.2	80.6	70.3	62.3	50.8
	203	x		-	-	-	-	391.3	369.4	319.4	259.5	199.1	159.5	132.1	112.3	97.4	85.8	69.3
	152	x	19	-	-	453.2	424.9	393.8	360.8	286.1	218.4	176.1	147.4	126.8	111.4	99.3	89.7	75.2
	203	x	16	-	-	-	-	492.5	466.8	409.3	345.4	270.8	220.0	184.5	158.6	139.0	123.6	101.2
	203	x	19	-	-	-	-	595.2	566.5	503.3	434.9	354.3	291.2	246.8	214.0	188.9	169.1	140.0
	254	x		-	-	-	-	-	-	708.1	645.6	578.5	507.6	424.6	364.0	318.2	282.5	230.7
	203	x	25	-	-	-	-	805.6	772.6	702.4	629.2	554.8	467.7	402.1	352.9	314.6	284.0	238.1
	254	x		-	-	-	-	-	-	965.7	896.0	823.4	749.4	672.6	584.6	517.2	463.8	385.0
	279	x		-	-	-	-	-	-	1095.5	1027.9	956.8	883.7	809.5	729.8	643.1	574.9	474.7
	305	x		-	-	-	-	-	-	-	1158.9	1089.4	1017.4	943.9	869.5	787.3	701.6	576.4
	254	x	32	-	-	-	-	-	-	1233.1	1159.8	1085.1	1010.1	935.2	860.6	769.9	694.8	582.1
	330	x	25	-	-	-	-	-	-	-	1288.8	1221.1	1150.5	1077.8	1004.0	929.5	845.0	690.7
	356	x		-	-	-	-	-	-	-	1417.7	1352.0	1282.8	1211.2	1138.1	1064.1	989.5	818.5
	305	x	32	-	-	-	-	-	-	-	1479.7	1406.5	1332.1	1257.1	1182.1	1107.2	1032.7	861.7
	406	x	25	-	-	-	-	-	-	-	-	1611.1	1545.1	1476.1	1404.9	1332.2	1258.5	1109.5
	356	x	32	-	-	-	-	-	-	-	-	1726.3	1653.3	1579.0	1504.1	1429.1	1354.1	1204.8
	406	x		-	-	-	-	-	-	-	-	-	1972.9	1900.0	1825.9	1751.2	1676.1	1526.2
	450	x		-	-	-	-	-	-	-	-	-	2245.7	2174.3	2101.3	2027.2	1952.5	1802.5

Factored Shear Resistance V_r (kN)							
Depth	WTO	WTA	WTB	WTC	WTF	WTH	WTK
<i>aa</i>	<i>bb</i>	<i>cc</i>	<i>dd</i>	<i>ee</i>	<i>ff</i>	<i>gg</i>	<i>hh</i>
500	87.2	116.4	178.7	211.0	311.0	374.0	460.2





SIN Beam Bending Capacity - Laterally Unsupported

Metric

Depth of Web h_w (mm)	Flange			Factored Moment Resistance M_r' (kN m)														
	Width b_f (mm)	Thickness t_f (mm)		Unbraced Length (mm)														
				1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	14000
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>
610	127	x	6	-	152.3	137.9	120.6	99.2	76.5	49.8	35.3	26.5	20.8	16.9	14.1	12.0	10.4	8.1
	152	x		-	-	154.3	138.1	119.2	95.0	61.7	43.6	32.7	25.6	20.7	17.2	14.6	12.6	9.8
	152	x	8	-	-	225.5	207.5	186.5	162.6	108.3	76.8	57.8	45.5	37.0	30.9	26.3	22.8	17.9
	152	x	10	-	-	271.0	249.7	225.1	197.2	133.1	95.2	72.2	57.3	47.0	39.5	34.0	29.7	23.6
	178	x		-	-	-	312.9	291.4	266.9	207.4	147.3	111.0	87.4	71.1	59.4	50.7	44.1	34.7
	152	x	13	-	-	362.7	335.4	304.1	269.2	187.4	136.3	105.2	84.8	70.6	60.3	52.5	46.5	37.8
	178	x		-	-	-	418.9	391.3	360.3	288.8	208.0	159.0	126.9	104.8	88.8	76.8	67.5	54.2
	203	x		-	-	-	-	475.0	447.2	382.8	302.0	229.2	181.7	148.9	125.3	107.7	94.1	74.9
	152	x	19	-	-	548.9	511.8	470.3	425.3	319.2	239.5	190.4	157.5	134.2	116.9	103.5	93.0	77.4
	203	x	16	-	-	-	-	596.8	563.6	488.0	398.1	305.9	245.5	203.6	173.3	150.4	132.7	107.3
	203	x	19	-	-	-	-	720.1	682.3	597.6	503.4	393.5	319.4	267.7	229.9	201.2	178.9	146.4
	254	x		-	-	-	-	-	926.2	852.9	769.3	677.5	568.5	470.3	399.2	345.9	304.6	245.4
	203	x	25	-	-	-	-	971.6	926.8	829.3	724.9	604.4	499.7	425.5	370.4	328.1	294.6	244.9
	254	x		-	-	-	-	-	-	1158.5	1061.8	959.0	852.4	725.2	624.6	548.1	488.3	401.0
	279	x		-	-	-	-	-	-	1319.6	1227.0	1127.5	1023.3	916.0	786.3	687.0	609.7	497.6
	305	x		-	-	-	-	-	-	1478.7	1390.2	1294.1	1192.6	1087.3	974.0	847.6	749.5	608.1
	254	x	32	-	-	-	-	-	-	1475.0	1370.7	1262.3	1152.0	1040.9	907.0	803.0	720.8	598.9
	330	x	25	-	-	-	-	-	-	-	1551.5	1458.9	1360.2	1257.2	1151.2	1031.6	909.1	733.3
	356	x		-	-	-	-	-	-	-	1711.0	1621.9	1526.2	1425.7	1321.6	1214.9	1090.0	874.4
	305	x	32	-	-	-	-	-	-	-	1770.0	1666.1	1558.5	1448.8	1338.1	1220.4	1088.4	895.4
	406	x	25	-	-	-	-	-	-	-	-	1943.2	1853.6	1758.3	1658.6	1555.4	1449.7	1208.8
	356	x	32	-	-	-	-	-	-	-	2163.7	2065.0	1961.4	1854.4	1745.3	1635.0	1524.0	1269.8
	406	x		-	-	-	-	-	-	-	-	2459.1	2360.0	2256.6	2150.2	2041.6	1931.8	1710.0
	450	x		-	-	-	-	-	-	-	-	-	2698.8	2598.8	2495.1	2388.7	2280.3	2060.2

Depth	Factored Shear Resistance V_r (kN)						
	WT0	WTA	WTB	WTC	WTF	WTH	WTK
	<i>aa</i>	<i>bb</i>	<i>cc</i>	<i>dd</i>	<i>ee</i>	<i>ff</i>	<i>gg</i>
610	104.4	139.9	215.8	255.0	377.0	456.0	561.1





SIN Beam Bending Capacity - Laterally Unsupported

Metric

Depth of Web h_w (mm)	Flange			Factored Moment Resistance M_r' (kN m)														
	Width b_f (mm)	Thickness t_f (mm)		Unbraced Length (mm)														
				1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	14000
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>
750	127	x	6	-	187.2	169.4	147.8	120.9	93.0	60.2	42.4	31.6	24.7	19.9	16.4	13.9	11.9	9.2
	152	x		-	-	189.6	169.4	145.8	115.6	74.8	52.5	39.1	30.4	24.5	20.2	17.0	14.6	11.2
	152	x	8	-	-	277.0	254.6	228.3	198.2	130.7	92.1	68.8	53.7	43.3	35.9	30.3	26.1	20.2
	152	x	10	-	-	332.8	306.2	275.1	239.7	159.4	113.0	85.0	66.8	54.2	45.2	38.5	33.4	26.2
	178	x		-	-	-	384.2	357.2	326.4	250.0	176.3	131.9	103.0	83.1	68.9	58.4	50.3	39.0
	152	x	13	-	-	444.9	410.4	370.4	325.3	221.1	158.8	121.0	96.4	79.4	67.1	57.8	50.7	40.6
	178	x		-	-	-	513.7	478.8	439.2	343.8	245.0	185.2	146.3	119.6	100.3	85.9	74.9	59.2
	203	x		-	-	-	-	582.4	547.2	464.6	358.5	269.6	211.7	171.9	143.3	122.1	105.8	82.8
	152	x	19	-	-	671.8	623.4	568.6	508.1	364.9	269.2	210.7	172.0	144.8	124.9	109.8	97.9	80.6
	203	x	16	-	-	-	-	730.7	688.1	589.4	466.0	353.9	280.8	230.3	194.0	166.8	145.9	116.2
	203	x	19	-	-	-	-	880.5	831.2	718.7	583.8	447.9	358.9	297.3	252.6	219.1	193.1	155.9
	254	x		-	-	-	-	-	1134.4	1039.0	928.2	804.3	652.4	534.0	448.7	385.0	336.1	266.7
	203	x	25	-	-	-	-	1184.7	1124.5	990.4	842.9	668.9	545.7	459.4	396.1	348.0	310.3	255.2
	254	x		-	-	-	-	-	1522.7	1405.6	1273.1	1129.0	963.2	800.3	682.1	593.1	524.1	424.7
	279	x		-	-	-	-	-	-	1607.1	1481.7	1344.0	1196.9	1022.2	866.8	750.3	660.3	531.3
	305	x		-	-	-	-	-	-	1805.3	1686.7	1555.3	1413.7	1264.3	1083.1	933.7	818.5	654.4
	254	x	32	-	-	-	-	-	-	1783.8	1636.5	1480.2	1318.2	1125.6	970.1	852.0	759.4	624.2
	330	x	25	-	-	-	-	-	-	-	1888.5	1763.1	1627.0	1482.5	1331.3	1145.4	1000.7	795.1
	356	x		-	-	-	-	-	-	-	2087.5	1967.8	1837.2	1697.5	1550.7	1388.0	1208.8	955.0
	305	x	32	-	-	-	-	-	-	2275.6	2140.5	1994.1	1839.7	1679.7	1510.8	1315.7	1164.2	945.5
406	x	25	-	-	-	-	-	-	-	-	2369.3	2248.9	2118.9	1980.8	1836.0	1685.7	1337.7	
356	x	32	-	-	-	-	-	-	-	-	2633.3	2497.3	2351.5	2198.5	2040.2	1878.2	1691.2	1358.2
406	x		-	-	-	-	-	-	-	-	2990.8	2854.0	2708.8	2557.0	2400.1	2239.6	1875.7	
450	x		-	-	-	-	-	-	-	-	-	3278.5	3140.1	2994.3	2842.5	2686.2	2363.7	

Factored Shear Resistance V_r (kN)							
Depth	WTO	WTA	WTB	WTC	WTF	WTH	WTK
<i>aa</i>	<i>bb</i>	<i>cc</i>	<i>dd</i>	<i>ee</i>	<i>ff</i>	<i>gg</i>	<i>hh</i>
750	126.2	169.9	263.2	311.3	461.5	561.0	690.3





SIN Beam Bending Capacity - Laterally Unsupported

Metric

Depth of Web h_w (mm)	Flange			Factored Moment Resistance M_r' (kN m)														
	Width b_f (mm)	Thickness t_f (mm)		Unbraced Length (mm)														
				1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	14000
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>
900	127	x	6	-	224.5	203.0	176.9	144.1	110.7	71.5	50.1	37.2	28.9	23.1	19.0	16.0	13.7	10.4
	152	x		-	-	227.3	203.0	174.3	137.8	88.8	62.2	46.2	35.7	28.6	23.5	19.7	16.8	12.8
	152	x	8	-	-	332.1	305.0	273.1	236.5	154.9	108.7	80.9	62.8	50.4	41.5	34.9	29.9	22.8
	152	x	10	-	-	398.9	366.6	328.7	285.5	188.2	132.6	99.1	77.3	62.4	51.7	43.7	37.6	29.1
	178	x		-	-	-	460.4	427.7	390.2	296.1	207.9	154.7	120.2	96.5	79.5	66.9	57.3	43.9
	152	x	13	-	-	533.0	490.7	441.5	385.7	258.3	183.8	138.9	109.6	89.4	74.9	64.1	55.8	44.0
	178	x		-	-	-	615.2	572.5	523.8	403.8	285.8	214.5	168.1	136.3	113.4	96.4	83.4	65.1
	203	x		-	-	-	-	697.4	654.3	552.5	420.5	314.2	245.1	197.7	163.7	138.5	119.2	92.1
	152	x	19	-	-	803.4	743.2	674.1	597.2	416.6	303.2	234.3	189.0	157.6	134.7	117.4	104.0	84.6
	203	x	16	-	-	-	-	874.2	821.6	698.6	541.1	407.5	320.6	260.8	217.8	185.8	161.3	126.7
	203	x	19	-	-	-	-	1052.3	990.9	848.8	671.0	509.6	404.3	331.7	279.3	240.2	210.1	167.3
	254	x		-	-	-	-	-	1357.2	1238.6	1098.9	940.6	746.7	606.3	505.4	430.3	372.9	291.9
	203	x	25	-	-	-	-	1412.9	1336.2	1162.5	963.0	743.7	599.8	499.8	427.0	372.1	329.4	267.8
	254	x		-	-	-	-	-	1818.9	1670.3	1499.0	1309.3	1079.0	887.8	749.8	646.5	566.9	453.4
	279	x		-	-	-	-	-	-	1915.0	1754.5	1575.1	1380.4	1143.0	960.7	824.8	720.3	571.8
	305	x		-	-	-	-	-	-	2155.1	2004.3	1834.7	1649.2	1444.5	1209.3	1034.1	899.7	709.6
	254	x	32	-	-	-	-	-	2286.8	2113.6	1918.7	1707.5	1470.2	1224.5	1045.8	911.0	806.3	655.2
	330	x	25	-	-	-	-	-	-	-	2249.5	2088.9	1912.2	1721.8	1498.8	1277.3	1107.7	868.3
	356	x		-	-	-	-	-	-	-	2490.6	2338.4	2170.0	1987.6	1793.4	1557.1	1346.5	1049.7
	305	x	32	-	-	-	-	-	-	2711.6	2536.4	2342.9	2135.3	1916.9	1654.6	1429.0	1254.9	1006.2
406	x	25	-	-	-	-	-	-	-	-	2825.8	2672.4	2505.0	2325.1	2134.3	1926.0	1487.5	
356	x	32	-	-	-	-	-	-	-	-	3135.9	2959.1	2766.8	2561.8	2346.9	2118.0	1847.7	1464.1
406	x		-	-	-	-	-	-	-	-	3559.7	3381.8	3190.3	2987.5	2775.4	2555.9	2045.5	
450	x		-	-	-	-	-	-	-	-	-	3898.7	3718.3	3525.8	3323.1	3112.0	2656.0	

Factored Shear Resistance V_r (kN)							
Depth	WTO	WTA	WTB	WTC	WTF	WTH	WTK
<i>aa</i>	<i>bb</i>	<i>cc</i>	<i>dd</i>	<i>ee</i>	<i>ff</i>	<i>gg</i>	<i>hh</i>
900	149.4	201.7	313.7	371.3	551.7	673.2	828.4





SIN Beam Bending Capacity - Laterally Unsupported

Metric

Depth of Web h_w (mm)	Flange			Factored Moment Resistance M_r' (kN m)														
	Width b_f (mm)	Thickness t_f (mm)		Unbraced Length (mm)														
				1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	14000
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>
1000	127	x	6	-	249.4	225.4	196.3	159.7	122.6	79.0	55.3	41.0	31.7	25.4	20.8	17.4	14.9	11.3
	152	x		-	-	252.5	225.3	193.4	152.6	98.3	68.7	50.9	39.3	31.4	25.7	21.5	18.3	13.8
	152	x	8	-	-	368.9	338.6	303.0	262.1	171.2	119.9	89.0	68.9	55.1	45.3	38.0	32.4	24.6
	152	x	10	-	-	443.0	406.9	364.5	316.1	207.5	145.9	108.7	84.5	68.0	56.1	47.3	40.6	31.2
	178	x		-	-	-	511.3	474.7	432.8	327.0	229.2	170.2	131.9	105.6	86.8	72.8	62.2	47.3
	152	x	13	-	-	591.7	544.3	489.1	426.2	283.5	200.9	151.1	118.7	96.4	80.4	68.5	59.4	46.5
	178	x		-	-	-	683.0	635.1	580.3	444.4	313.5	234.4	183.1	147.8	122.5	103.7	89.4	69.3
	203	x		-	-	-	-	774.1	725.8	611.4	462.4	344.5	267.9	215.4	177.7	149.8	128.5	98.7
	152	x	19	-	-	891.2	823.2	744.8	656.9	452.2	326.9	250.9	201.1	166.6	141.7	122.9	108.3	87.5
	203	x	16	-	-	-	-	969.9	910.7	771.7	592.3	444.2	348.0	281.9	234.4	199.1	172.2	134.2
	203	x	19	-	-	-	-	1167.0	1097.6	936.0	730.7	552.1	435.8	355.7	298.1	255.1	222.2	175.5
	254	x		-	-	-	-	-	1505.9	1372.0	1213.2	1032.1	811.6	656.2	544.8	462.0	398.8	309.8
	203	x	25	-	-	-	-	1565.3	1477.8	1277.6	1037.9	796.2	638.1	528.5	449.1	389.5	343.3	277.1
	254	x		-	-	-	-	-	2016.7	1847.2	1650.1	1429.8	1159.7	949.3	797.6	684.5	597.6	474.2
	279	x		-	-	-	-	-	-	2120.7	1936.8	1729.7	1502.9	1227.3	1026.8	877.4	762.9	601.0
	305	x		-	-	-	-	-	-	2388.6	2216.6	2021.6	1806.7	1556.8	1297.5	1104.7	957.2	749.0
	254	x	32	-	-	-	-	-	2533.4	2333.9	2106.7	1858.0	1564.0	1295.0	1100.1	953.7	840.5	677.9
	330	x	25	-	-	-	-	-	-	-	2490.7	2306.7	2102.9	1881.7	1613.7	1369.5	1183.0	920.3
	356	x		-	-	-	-	-	-	-	2759.8	2586.1	2392.6	2181.6	1955.4	1675.0	1442.9	1116.7
	305	x	32	-	-	-	-	-	-	3002.8	2800.7	2575.5	2331.5	2072.7	1756.6	1509.8	1320.1	1050.3
	406	x	25	-	-	-	-	-	-	-	-	3130.6	2955.5	2763.2	2555.3	2333.6	2075.8	1592.5
	356	x	32	-	-	-	-	-	-	-	-	3471.5	3267.5	3043.7	2803.4	2549.4	2255.0	1958.8
	406	x		-	-	-	-	-	-	-	-	3939.6	3734.3	3511.6	3274.1	3024.1	2763.6	2166.3
	450	x		-	-	-	-	-	-	-	-	4504.1	4313.0	4104.4	3880.4	3643.1	3394.4	2827.0

Factored Shear Resistance V_r (kN)							
Depth	WTO	WTA	WTB	WTC	WTF	WTH	WTK
<i>aa</i>	<i>bb</i>	<i>cc</i>	<i>dd</i>	<i>ee</i>	<i>ff</i>	<i>gg</i>	<i>hh</i>
1000	164.8	222.9	347.3	411.2	611.8	748.0	920.4





SIN Beam Bending Capacity - Laterally Unsupported

Metric

Depth of Web h_w (mm)	Flange			Factored Moment Resistance M_r' (kN m)														
	Width b_f (mm)	Thickness t_f (mm)		Unbraced Length (mm)														
				1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	14000
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>
1219	127	x	6	-	303.9	274.6	238.9	193.9	148.7	95.6	66.8	49.4	38.1	30.3	24.8	20.7	17.6	13.2
	152	x		-	-	307.6	274.4	235.2	185.3	119.0	83.1	61.4	47.3	37.6	30.7	25.6	21.7	16.3
	152	x	8	-	-	449.5	412.3	368.6	318.3	207.0	144.6	107.0	82.6	65.8	53.8	45.0	38.2	28.8
	152	x	10	-	-	539.7	495.3	443.2	383.3	250.2	175.2	130.0	100.7	80.5	66.1	55.4	47.3	35.9
	178	x		-	-	-	622.8	577.9	526.3	395.3	276.2	204.4	157.8	125.9	103.0	86.1	73.2	55.2
	152	x	13	-	-	720.5	662.0	593.6	515.3	339.4	239.2	178.6	139.3	112.3	93.0	78.6	67.6	52.2
	178	x		-	-	-	831.5	772.4	704.6	534.2	375.0	279.0	216.6	173.8	143.2	120.5	103.2	78.9
	203	x		-	-	-	-	942.4	882.7	740.8	555.2	411.9	318.9	255.0	209.4	175.5	149.8	113.7
	152	x	19	-	-	1084.0	999.0	900.3	788.7	532.3	380.6	288.9	229.1	187.8	158.1	135.9	118.8	94.5
	203	x	16	-	-	-	-	1180.0	1106.5	932.6	706.3	526.6	409.8	329.7	272.3	229.7	197.2	151.6
	203	x	19	-	-	-	-	1418.8	1332.0	1128.1	864.7	648.3	507.5	410.8	341.4	289.9	250.5	195.0
	254	x		-	-	-	-	-	1832.2	1665.0	1464.9	1231.7	957.4	769.2	634.4	534.5	458.3	351.4
	203	x	25	-	-	-	-	1900.1	1788.9	1531.2	1208.0	916.7	726.7	595.7	501.3	430.7	376.5	299.4
	254	x		-	-	-	-	-	2450.8	2236.1	1982.8	1695.5	1344.0	1090.4	908.4	773.0	669.5	523.5
	279	x		-	-	-	-	-	-	2572.6	2338.0	2070.3	1756.7	1420.0	1178.5	999.2	862.2	669.5
	305	x		-	-	-	-	-	-	2901.4	2683.3	2433.1	2153.8	1812.1	1499.2	1267.2	1090.1	841.4
	254	x	32	-	-	-	-	-	3074.9	2818.1	2520.1	2187.6	1780.7	1459.2	1227.6	1054.7	921.7	732.7
	330	x	25	-	-	-	-	-	-	-	3020.5	2785.9	2523.0	2234.3	1875.1	1580.7	1356.2	1041.3
	356	x		-	-	-	-	-	-	-	3351.1	3130.5	2882.4	2609.1	2310.7	1943.5	1663.7	1271.7
	305	x	32	-	-	-	-	-	-	3642.3	3381.7	3086.8	2762.2	2388.9	1993.0	1698.5	1473.1	1154.9
	406	x	25	-	-	-	-	-	-	-	-	3800.1	3577.7	3331.3	3062.5	2773.0	2416.1	1833.3
	356	x	32	-	-	-	-	-	-	-	-	4208.5	3945.3	3652.6	3334.0	2992.8	2571.3	2216.9
	406	x		-	-	-	-	-	-	-	-	-	4774.1	4508.9	4217.9	3903.9	3569.4	3185.1
	450	x		-	-	-	-	-	-	-	-	-	5467.7	5222.9	4953.0	4660.0	4346.3	4014.0

Factored Shear Resistance V_r (kN)							
Depth	WTO	WTA	WTB	WTC	WTF	WTH	WTK
<i>aa</i>	<i>bb</i>	<i>cc</i>	<i>dd</i>	<i>ee</i>	<i>ff</i>	<i>gg</i>	<i>hh</i>
1219	198.4	269.1	420.9	498.7	743.4	911.2	1110.6





SIN Beam Bending Capacity - Laterally Unsupported

Metric

Depth of Web h_w (mm)	Flange			Factored Moment Resistance M_r' (kN m)														
	Width b_f (mm)	Thickness t_f (mm)		Unbraced Length (mm)														
				1500	2000	2500	3000	3500	4000	5000	6000	7000	8000	9000	10000	11000	12000	14000
<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>	<i>g</i>	<i>h</i>	<i>i</i>	<i>j</i>	<i>k</i>	<i>l</i>	<i>m</i>	<i>n</i>	<i>o</i>	<i>p</i>	<i>q</i>	<i>r</i>	<i>s</i>
1500	127	x	6	-	373.8	337.7	293.6	237.8	182.3	117.0	81.6	60.2	46.3	36.8	30.0	25.0	21.1	15.8
	152	x		-	-	378.3	337.3	288.9	227.2	145.8	101.6	74.9	57.6	45.7	37.2	31.0	26.2	19.5
	152	x	8	-	-	552.7	506.9	452.8	390.5	253.2	176.5	130.3	100.3	79.7	65.0	54.1	45.8	34.3
	152	x	10	-	-	663.6	608.7	544.1	469.8	305.4	213.3	157.7	121.7	97.0	79.3	66.2	56.2	42.3
	178	x		-	-	-	765.7	710.2	646.2	483.3	337.0	248.8	191.6	152.3	124.3	103.5	87.7	65.6
	152	x	13	-	-	885.5	813.0	727.8	630.0	412.1	289.0	214.8	166.6	133.5	109.8	92.2	78.9	60.1
	178	x		-	-	-	1022.0	948.5	864.2	650.5	455.0	337.2	260.7	208.2	170.6	142.8	121.6	92.0
	203	x		-	-	-	-	1158.2	1084.0	907.3	675.4	499.5	385.4	307.0	251.0	209.5	178.0	133.9
	152	x	19	-	-	1331.3	1224.7	1100.4	958.9	637.8	452.1	340.0	267.1	216.9	180.9	154.1	133.6	104.6
	203	x	16	-	-	-	-	1449.5	1357.7	1139.8	854.7	634.3	491.2	393.0	322.7	270.7	231.0	175.5
	203	x	19	-	-	-	-	1741.8	1633.0	1375.6	1040.3	775.1	602.8	484.6	399.9	337.1	289.2	222.0
	254	x		-	-	-	-	-	2250.6	2041.2	1789.0	1485.2	1149.1	918.6	753.6	631.3	538.3	408.1
	203	x	25	-	-	-	-	2329.8	2188.8	1858.4	1434.1	1078.3	846.8	687.6	573.3	488.3	423.2	331.4
	254	x		-	-	-	-	-	3007.8	2735.9	2411.7	2040.5	1589.8	1280.3	1058.5	894.0	768.5	592.4
	279	x		-	-	-	-	-	-	3152.9	2854.3	2509.9	2088.9	1677.5	1382.8	1164.4	997.9	764.5
	305	x		-	-	-	-	-	-	3559.6	3283.1	2963.1	2602.3	2151.2	1769.1	1486.0	1270.3	968.2
	254	x	32	-	-	-	-	-	3769.9	3440.6	3052.5	2612.7	2074.3	1684.0	1403.8	1195.4	1035.9	810.9
	330	x	25	-	-	-	-	-	-	3958.2	3701.0	3402.4	3064.7	2690.6	2222.9	1863.4	1589.6	1206.4
	356	x		-	-	-	-	-	-	-	4110.0	3830.3	3513.3	3160.9	2750.1	2301.3	1959.7	1482.0
	305	x	32	-	-	-	-	-	-	4463.3	4128.7	3745.2	3317.6	2795.8	2314.4	1957.2	1684.5	1301.6
	406	x	25	-	-	-	-	-	-	-	-	4659.6	4377.5	4062.7	3716.8	3341.5	2868.3	2156.6
	356	x	32	-	-	-	-	-	-	-	-	5155.1	4816.8	4436.6	4018.0	3564.3	2999.3	2568.7
	406	x		-	-	-	-	-	-	-	-	-	5846.0	5504.9	5127.2	4715.5	4272.4	3727.7
	450	x		-	-	-	-	-	-	-	-	-	6704.6	6391.9	6044.2	5663.6	5252.4	4812.8

Factored Shear Resistance V_r (kN)							
Depth	WTO	WTA	WTB	WTC	WTF	WTH	WTK
<i>aa</i>	<i>bb</i>	<i>cc</i>	<i>dd</i>	<i>ee</i>	<i>ff</i>	<i>gg</i>	<i>hh</i>
1500	204.4	290.1	433.2	577.8	749.5	858.8	1016.5

