Fy	E	G	L = Lx	LTB Lu = Ly	Φ	kx	ky	n
350	200000	77000	7000	1400	0.9	1	1	1.34

work: W310x52, W250x58				max(snow, live), live for floors	Roof		Floor	
	W250x58			**Load combos**	*1.25D+1.4W+0.5S*	*1.25D+1.5S+0.4W*	*1.25D+1.4W+0.5L*	*1.25D+1.5L+0.4W*
			unfactored loads	**Δ** mm	8.77	8.77	14.02	14.02
Ix (x10^6) [mm^2]	87300000			**kPa**	3.28	6.18	7.62	9.86
Iy (x10^6) [mm^4]	18800000		*1 kN/m = 1 N/mm*	**w** kN/m	11.47	21.62	26.67	34.51
A [mm^2]	7420			**Vf** kN	40.14	75.67	93.36	120.77
d [mm]	252			**Vr** kN	419.13	419.13	419.13	419.13
b [mm]	203			**Mf** kN-m	70.25	132.42	163.37	211.35
t [mm]	13.5			**Cf** kN	355.25	101.50	183.75	52.50
w [mm]	8			class check	2	2	2	2
rx [mm]	108			U1x	1.1123657	1.0297192	1.0551297	1.0151546
ry [mm]	50.4		*no 0.85 in class 3 check*	**1) CSS UF**	**0.425841**	**0.521270**	**0.682710**	**0.774341**
J (x10^3) [mm^4]	409000			Cr = ΦAFy	2337.3	2337.3	2337.3	2337.3
Zx (x10^3) [mm^3]	770000			Mr 13.5	242.55	242.55	242.55	242.55
Sx (x10^3) [mm^3]	693000		*use same Mr as above*	**2) OMS UF**	**0.4971**	**0.5416**	**0.7196**	**0.7849**
Cw (x10^9) [mm^6]	268000000000			Crx	1591.299	1591.299	1591.299	1591.299
Ce (kN)	3516.801895			λx	0.863065	0.863065	0.863065	0.863065
w1	1.0			**3) LTB UF**	**0.43366**	**0.52350**	**0.68676**	**0.77550**
h/w	28.125		*did NOT check Fez*	Cry	2222.883504	2222.883504	2222.883504	2222.883504
flange class	1			λy	0.3698849414	0.3698849414	0.3698849414	0.3698849414
Class 1	7.75			Mr 13.6.1	242.55	242.55	242.55	242.55
Class 2	9.09		*automated*	Mp [kN-m]	269.5	269.5	269.5	269.5
Class 3	10.69			Mu [kN-m]	2400.801613	2400.801613	2400.801613	2400.801613
Result	7.52			Mr (case i)	242.55	242.55	242.55	242.55
slenderness x	64.81481481			Mr (case ii)	2160.721452	2160.721452	2160.721452	2160.721452
slenderness y	27.77777778			web class	2	2	2	2
Fex	469.8737377			web, 2	90.86039736	90.86641514	90.86446455	90.86757719
Fey	2558.201461			web, 3	101.5492384	101.5564052	101.5540822	101.5577891
			x	ω_2	1.005012436	1.005012436	1.005012436	1.005012436
			3.5	Mmax (x=3.5)	70.24992188	132.4186719	163.3732779	211.3481151
			3.15	Ma (x = 3.15)	69.54742266	131.0944852	161.7395452	209.2346339
			3.5	Mb (x = 3.5)	70.24992188	132.4186719	163.3732779	211.3481151
			3.85	Mc (x = 3.85)	69.54742266	131.0944852	161.7395452	209.2346339
					0.28963	0.54594	0.67357	0.87136