

ULS Load Combinations

ID	TYPE	NAME
84	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+1.6xSNOW1+0.5xWindBack(Cpi+)
85	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+1.6xSNOW1+0.5xWindFront(Cpi+)
357	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING
75	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xWindBack(Cpi+)
76	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xWindFront(Cpi+)
77	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xWindLeft(Cpi+)
78	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xWindRight(Cpi+)
365	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xSNOW1
373	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xSNOW2
86	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+1.6xSNOW1+0.5xWindLeft(Cpi+)
87	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+1.6xSNOW1+0.5xWindRight(Cpi+)
352	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+WindLeft(Cpi+)
93	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+1.6xSNOW2+0.5xWindBack(Cpi+)
94	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+1.6xSNOW2+0.5xWindFront(Cpi+)
95	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+1.6xSNOW2+0.5xWindLeft(Cpi+)
96	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+1.6xSNOW2+0.5xWindRight(Cpi+)
353	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+WindRight(Cpi+)
358	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xSNOW1+WindBack(Cpi+)
359	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xSNOW1+WindFront(Cpi+)
360	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xSNOW1+WindLeft(Cpi+)
361	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xSNOW1+WindRight(Cpi+)
366	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xSNOW2+WindBack(Cpi+)
367	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xSNOW2+WindFront(Cpi+)
368	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xSNOW2+WindLeft(Cpi+)
369	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+0.5xSNOW2+WindRight(Cpi+)
374	ULS	0.9xDEAD+0.9xSELF+0.9xPURLIN+0.9xSHEETING+WindBack(Cpi+)

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ID	TYPE	NAME
375	ULS	0.9xDEAD+0.9xSELF+0.9xPURLIN+0.9xSHEETING+WindFront(Cpi+)
376	ULS	0.9xDEAD+0.9xSELF+0.9xPURLIN+0.9xSHEETING+WindLeft(Cpi+)
377	ULS	0.9xDEAD+0.9xSELF+0.9xPURLIN+0.9xSHEETING+WindRight(Cpi+)
348	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+1.6xSNOW1
349	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+1.6xSNOW2
350	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+WindBack(Cpi+)
351	ULS	1.2xDEAD+1.2xSELF+1.2xPURLIN+1.2xSHEETING+WindFront(Cpi+)
71	ULS	1.4xDEAD+1.4xSELF+1.4xPURLIN+1.4xSHEETING
381	ULS	0.9xDEAD+0.9xSELF+0.9xPURLIN+0.9xSHEETING

Internal forces which gives maxiumum capacity ratios

				Internal forces						Axial Force Ratio		Shear Ratio		Axial force and Flexxture
Frame ID	Section Name	Load Combo	Loc	N	V22	M33	V33	M22	T	Tensile	Compression	Major	Minor	Ratio
0	IPE300-H=363	348	0.00	-108.42	77.47	-178.52	0.00	0.00	0.00	-	0.26	0.16	-	0.96
1	IPE300	348	0.00	-107.25	72.78	-146.25	0.00	0.00	0.00	-	0.25	0.18	-	1.01
2	IPE300	349	0.00	-79.21	36.69	-44.36	0.00	0.00	0.00	-	0.25	0.13	-	0.33
3	IPE300	348	1.72	-93.22	16.67	84.26	0.00	0.00	0.00	-	0.25	0.09	-	0.59
4	IPE300	348	1.72	-88.55	-2.03	96.83	0.00	0.00	0.00	-	0.25	0.04	-	0.68
5	IPE300-H=650	348	0.00	-85.01	-16.18	85.12	0.00	0.00	0.00	-	0.31	0.03	-	0.23
6	IPE300-H=350	348	1.72	-88.55	2.03	96.83	0.00	0.00	0.00	-	0.26	0.03	-	0.56
7	IPE300	348	0.00	-88.55	2.03	96.83	0.00	0.00	0.00	-	0.25	0.04	-	0.68
8	IPE300	349	0.00	-72.77	-10.95	87.54	0.00	0.00	0.00	-	0.25	0.09	-	0.61
9	IPE300	349	0.00	-77.45	-29.65	52.67	0.00	0.00	0.00	-	0.25	0.13	-	0.38
10	IPE300	348	1.72	-107.25	-72.78	-146.25	0.00	0.00	0.00	-	0.25	0.18	-	1.01
11	IPE300-H=738	348	1.72	-111.99	-91.76	-287.51	0.00	0.00	0.00	-	0.32	0.16	-	0.60
12	HEA300	348	6.00	-116.18	-86.40	-287.51	0.00	0.00	0.00	-	0.30	0.15	-	0.90
13	HEA300	348	6.00	-116.18	86.40	287.51	0.00	0.00	0.00	-	0.30	0.15	-	0.90

Design of members against compression, as per Chapter E

					Slenderness ratio about			Compressive design				
Frame ID	Section Name	Load Combo	Loc	Pr	Major	Minor	Is OK	Pn_E3	Pn_E4	Pn_E7	Phi * Pn	Ratio
0	IPE300	84	0.00	-98.54	11.60	52.93	True	1337.51	1563.09	1336.33	1202.70	0.26
1	IPE300	84	0.00	-97.37	13.81	50.85	True	1249.53	1313.03	0.00	1124.58	0.25
2	IPE300	84	0.00	-92.69	13.81	50.85	True	1249.53	1313.03	0.00	1124.58	0.25
3	IPE300	84	0.00	-88.01	13.81	50.85	True	1249.53	1313.03	0.00	1124.58	0.25
4	IPE300	84	0.00	-83.34	13.81	50.85	True	1249.53	1313.03	0.00	1124.58	0.25
5	IPE300	84	0.00	-75.12	6.88	61.60	True	1712.15	2118.11	1346.68	1212.02	0.31
6	IPE300	84	0.00	-77.49	11.98	52.52	True	1320.11	1538.91	1320.11	1188.10	0.26
7	IPE300	84	0.00	-78.66	13.81	50.85	True	1249.53	1313.03	0.00	1124.58	0.25
8	IPE300	84	0.00	-83.34	13.81	50.85	True	1249.53	1313.03	0.00	1124.58	0.25
9	IPE300	84	0.00	-88.01	13.81	50.85	True	1249.53	1313.03	0.00	1124.58	0.25
10	IPE300	84	0.00	-92.69	13.81	50.85	True	1249.53	1313.03	0.00	1124.58	0.25
11	IPE300	84	0.00	-100.91	6.16	64.01	True	1816.83	2286.72	1337.90	1204.11	0.32
12	HEA300	84	0.00	-119.65	23.53	59.27	True	2450.18	2434.97	0.00	2191.47	0.30
13	HEA300	84	0.00	-119.65	23.53	59.27	True	2450.18	2434.97	0.00	2191.47	0.30

Design of members against flexure as per Chapter F

					Internal forces			Flexture design				
Frame ID	Section Name	Load Combo	Loc	Pr	M33	M22	Cb	According To	Mn LTB	Mn Major	Mn Minor	Ratio
0	IPE300-H=363	348	0.00	-108.42	-178.52	0.00	1.26	F6	34.44	194.81	31.00	0.96
1	IPE300	348	0.00	-107.25	-146.25	0.00	1.46	F6	34.22	152.24	30.80	1.01
2	IPE300	349	0.00	-79.21	-44.36	0.00	2.09	F6	34.22	152.24	30.80	0.33
3	IPE300	348	1.72	-93.22	84.26	0.00	1.22	F6	34.22	152.24	30.80	0.59
4	IPE300	348	1.72	-88.55	96.83	0.00	1.02	F6	34.22	152.24	30.80	0.68
5	IPE300-H=650	348	0.00	-85.01	85.12	0.00	1.06	F6	35.44	434.87	31.89	0.23
6	IPE300-H=350	348	1.72	-88.55	96.83	0.00	1.04	F6	34.40	186.02	30.96	0.56
7	IPE300	348	0.00	-88.55	96.83	0.00	1.02	F6	34.22	152.24	30.80	0.68
8	IPE300	349	0.00	-72.77	87.54	0.00	1.15	F6	34.22	152.24	30.80	0.61
9	IPE300	349	0.00	-77.45	52.67	0.00	1.84	F6	34.22	152.24	30.80	0.38
10	IPE300	348	1.72	-107.25	-146.25	0.00	1.46	F6	34.22	152.24	30.80	1.01
11	IPE300-H=738	348	1.72	-111.99	-287.51	0.00	1.20	F6	35.46	522.34	31.91	0.60
12	HEA300	348	6.00	-116.18	-287.51	0.00	2.23	F6	751.50	329.31	155.38	0.90
13	HEA300	348	6.00	-116.18	287.51	0.00	2.23	F6	751.50	329.31	155.38	0.90