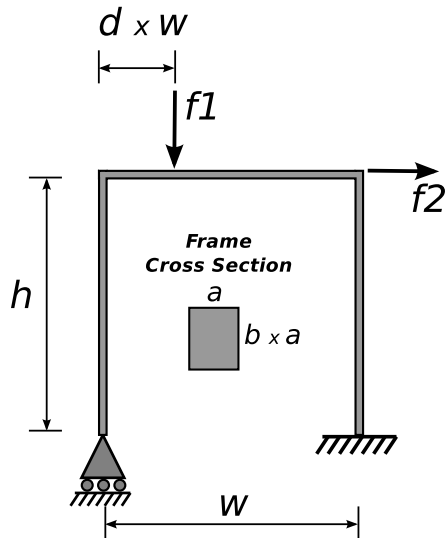


STRENGTH OF SHIPS

TERM PROJECT

Due Date: 21 AUG 2014



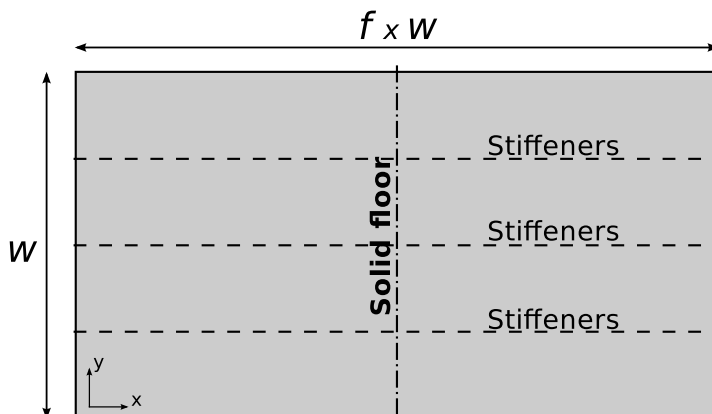
1) Find maximum deflection and maximum bending stress

Note: b and d are coefficients to calculate the given dimension in terms of another dimension

Problem Parameters

w : width of the frame, h : height of the frame, d : coefficient for the location of the singular load f_1 , a : width of the beam cross-section, b : coef. for the height of the beam cross-section, f_1 : singular force on the left [N], f_2 : singular force on the upper right corner [N]

2) Find maximum deflection and maximum von-Mises stress for the panel.



Notes

- Stiffeners divide the width of the panel in equal lengths
- Panel is simply supported on all sides. Stiffeners and the floor ARE NOT supported
- Solid floor divides the panel at center and there is only one solid floor
- Both floor and stiffeners has rectangular cross section
- All stiffeners have the same cross-section geometry

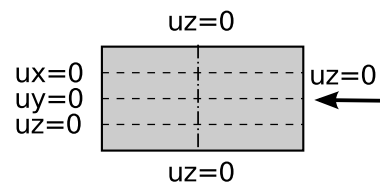
Problem Parameters

n_s : no of stiffeners, h_s : stiffener height, t_s : stiffener thickness, h_f : floor height

t_f : floor thickness, w : panel width, $f \times w$: panel length, t_p : panel thickness, q : pressure on panel [Pa]

3) Find critical buckling load applied on the right side of the panel given in question 2. (in kN/m)

Notes: Use the boundary conditions explained in the figure on the right. Apply line pressure on panel edge as well as stiffener edges



4) Find the first natural frequency mode of the panel given in question 2.

Note: Use the same boundary conditions as the 2nd question

For all the questions:

$E=207e9$ Pa, $\nu=0.3$, $\rho=7000$ kg/

Öğrenci No	Ad Soyad	Question 1							Question 2,3,4								
		w	h	d	a	b	f1	f2	ns	hs	ts	hf	tf	w	f	tp	q
80070035	Tufan Ektuna	4.19	3.88	0.86	0.075	3.36	21.9	27.9	4	0.35	0.004	0.69	0.015	6.72	2.06	0.020	8579
80070044	Melih Çelik	4.41	4.16	0.22	0.047	1.06	36.0	26.6	3	0.20	0.005	0.70	0.012	11.32	2.65	0.025	6100
80080013	Batıkan Şahinbaş	2.42	4.34	0.59	0.069	3.87	37.2	47.9	5	0.29	0.014	0.85	0.011	7.11	2.08	0.016	4872
80080037	Mahmut Ali Bursa	4.49	2.86	0.52	0.057	3.27	46.9	33.1	2	0.24	0.010	0.87	0.016	11.86	4.47	0.020	13677
80080048	Çağrı Bayraktar	3.41	4.03	0.13	0.019	2.57	57.2	34.5	4	0.11	0.008	0.79	0.012	13.49	4.24	0.017	7553
80080052	Oğuzhan Baykal	2.37	3.96	0.43	0.038	2.32	17.2	46.2	6	0.27	0.008	0.75	0.011	7.61	3.07	0.028	19892
80090017	Yavuz Alp Oğuzalp	2.82	2.34	0.29	0.024	2.42	33.4	41.6	4	0.28	0.006	0.84	0.014	13.84	2.43	0.023	10766
80090024	Muhammet Fatih Özgen	3.38	2.17	0.70	0.032	1.85	84.8	32.5	4	0.30	0.006	0.72	0.011	10.61	3.38	0.026	15659
80090030	Halil Can Ünlü	4.80	3.29	0.41	0.040	2.61	11.3	19.5	2	0.19	0.008	0.59	0.019	14.54	3.33	0.013	1070
80090031	Taha Türkoğlu	4.90	4.94	0.53	0.060	2.66	94.9	20.4	2	0.25	0.008	0.67	0.016	9.57	4.16	0.016	13054
80090034	Çağrı Aydın	2.55	2.97	0.30	0.015	3.49	78.1	46.9	5	0.33	0.012	0.65	0.018	6.14	3.23	0.024	12294
80090052	Özkan Gürsoy	4.94	3.77	0.62	0.093	3.41	50.5	10.6	5	0.38	0.010	0.74	0.017	8.83	4.92	0.014	17731
80090907	Igbal Mammadli	4.69	2.47	0.38	0.097	3.16	62.1	27.3	3	0.13	0.009	0.54	0.018	6.39	4.58	0.011	14462
80090908	Artur Mavlin	3.27	4.23	0.64	0.066	2.04	30.7	18.4	2	0.13	0.005	0.56	0.016	14.60	4.85	0.019	19147
80090909	Kemal Ahmedov	4.12	2.71	0.65	0.065	3.48	48.6	49.5	3	0.31	0.014	0.60	0.017	5.83	2.93	0.029	19557
80100006	Osman Can Demir	2.49	3.35	0.67	0.045	2.75	96.2	38.4	6	0.34	0.011	0.84	0.017	7.25	2.71	0.015	4397
80100014	Durukan Özdemir	3.06	4.05	0.51	0.092	1.99	60.7	29.0	6	0.40	0.013	0.80	0.012	5.50	4.35	0.021	5119
80100016	Mustafa Koray Altınok	4.52	4.73	0.16	0.054	3.88	58.1	25.4	5	0.14	0.011	0.78	0.014	8.55	2.57	0.017	16840
80100017	Halil Suat Güçlü	3.98	4.90	0.35	0.022	3.65	28.0	11.7	6	0.21	0.015	0.88	0.018	5.22	2.20	0.010	2581
80100024	Savaş Pişkin	4.85	3.53	0.84	0.088	2.83	53.7	37.4	6	0.32	0.015	0.90	0.010	12.94	3.49	0.020	8790
80100025	Muhammed Doğan	3.53	2.23	0.27	0.055	3.06	65.2	11.2	2	0.21	0.007	0.88	0.013	11.77	4.52	0.026	6698
80100028	Abdülkadir Pekin	2.17	2.30	0.76	0.041	2.87	68.6	13.5	5	0.36	0.011	0.58	0.013	8.93	3.12	0.015	15370
80100030	Hasan Can Pakdemir	4.32	2.82	0.55	0.058	1.35	44.9	30.8	4	0.18	0.012	0.86	0.019	8.22	2.63	0.012	3801

80100052	Muhammet Rahmet Safa Gldoğan	4.57	4.67	0.89	0.021	1.81	42.9	15.9	2	0.14	0.010	0.73	0.015	6.58	2.13	0.014	17477
80100054	Yunus Vural	3.63	2.68	0.15	0.026	2.52	98.5	43.9	6	0.31	0.013	0.56	0.020	10.37	4.79	0.023	16065
80100064	Melih Can Cengiz	3.87	4.55	0.48	0.095	1.60	15.1	42.5	4	0.16	0.006	0.66	0.015	5.02	3.62	0.017	11494
80100065	mer Faruk Gmş	3.81	2.54	0.20	0.098	3.60	87.5	39.4	5	0.36	0.005	0.83	0.018	12.48	3.00	0.022	5680
80100066	Mustafa Abur	3.01	4.84	0.87	0.072	1.32	94.1	16.9	2	0.34	0.004	0.81	0.013	11.14	3.85	0.010	3208
80100067	Barıř Tıęlı	3.52	3.04	0.12	0.017	1.46	84.5	37.1	3	0.22	0.006	0.51	0.014	9.85	4.20	0.024	13147
80100068	Ufuk Yılmaz	2.57	2.40	0.69	0.036	1.18	19.3	30.0	5	0.10	0.010	0.76	0.011	13.69	2.86	0.018	1724
80100069	Ramazan Ően	3.78	2.60	0.74	0.049	1.55	31.7	48.6	2	0.15	0.010	0.79	0.016	14.36	3.96	0.011	2974
80100080	Efe Yakup Demirci	2.06	3.85	0.79	0.089	2.23	41.6	35.5	5	0.17	0.009	0.63	0.020	9.25	2.51	0.018	3974
80100301	Erol Ernek	2.73	3.27	0.17	0.010	1.93	70.9	40.1	3	0.37	0.007	0.54	0.014	11.47	4.95	0.024	9850
80100805	Seluk Karaduman	2.20	3.13	0.45	0.013	3.76	24.4	25.0	5	0.28	0.004	0.63	0.013	10.83	4.10	0.028	14752
80110010	Metin İtem	2.28	4.58	0.36	0.029	2.19	76.7	24.4	5	0.19	0.012	0.57	0.018	10.12	2.36	0.030	18687
80110017	Barıř Sivas	4.29	3.68	0.72	0.081	1.21	21.4	44.5	3	0.17	0.011	0.72	0.010	13.99	3.42	0.029	10456
80110022	Muhammed Salim Yılmaz	3.70	3.57	0.47	0.083	3.70	65.8	14.9	3	0.23	0.009	0.69	0.019	14.94	3.73	0.028	1884
80110023	Orhan Saral	2.86	4.76	0.83	0.078	3.97	54.9	16.7	3	0.39	0.007	0.67	0.010	12.77	4.71	0.027	7133
80110031	Murat Demirel	4.62	2.91	0.33	0.063	2.40	81.0	19.2	6	0.39	0.012	0.82	0.014	8.14	3.55	0.024	14142
80110053	Barıř Birol	2.12	4.36	0.40	0.070	1.11	73.8	21.8	4	0.26	0.013	0.70	0.016	7.40	3.68	0.021	16458
80110058	Abdlmecit Onur Aydın	3.09	4.26	0.27	0.043	1.68	91.2	45.6	4	0.30	0.014	0.64	0.015	12.42	3.87	0.019	6290
80110059	mer Faruk Kse	2.92	3.19	0.23	0.085	2.13	88.9	41.5	4	0.34	0.009	0.53	0.013	9.95	4.64	0.013	9934
80110063	Muhsin Cem Bařar	3.95	3.65	0.80	0.034	2.97	39.0	12.9	6	0.12	0.014	0.61	0.012	9.30	2.26	0.022	18296
80110084	Abdullah Yenideniz	4.09	2.09	0.61	0.081	1.71	71.3	22.5	3	0.26	0.013	0.62	0.015	12.08	3.18	0.027	12503
80110801	Yavuz olak	2.67	2.01	0.56	0.030	3.02	27.2	31.7	6	0.12	0.005	0.52	0.019	7.91	2.80	0.015	11598
80120323	Abdullah Ayhan	3.31	3.44	0.25	0.050	3.18	12.2	23.0	2	0.23	0.007	0.77	0.017	13.17	4.00	0.026	8197
80130701	Batuhan Evren	3.21	4.48	0.77	0.077	1.42	79.7	36.0	3	0.24	0.013	0.52	0.019	5.96	4.40	0.012	9187