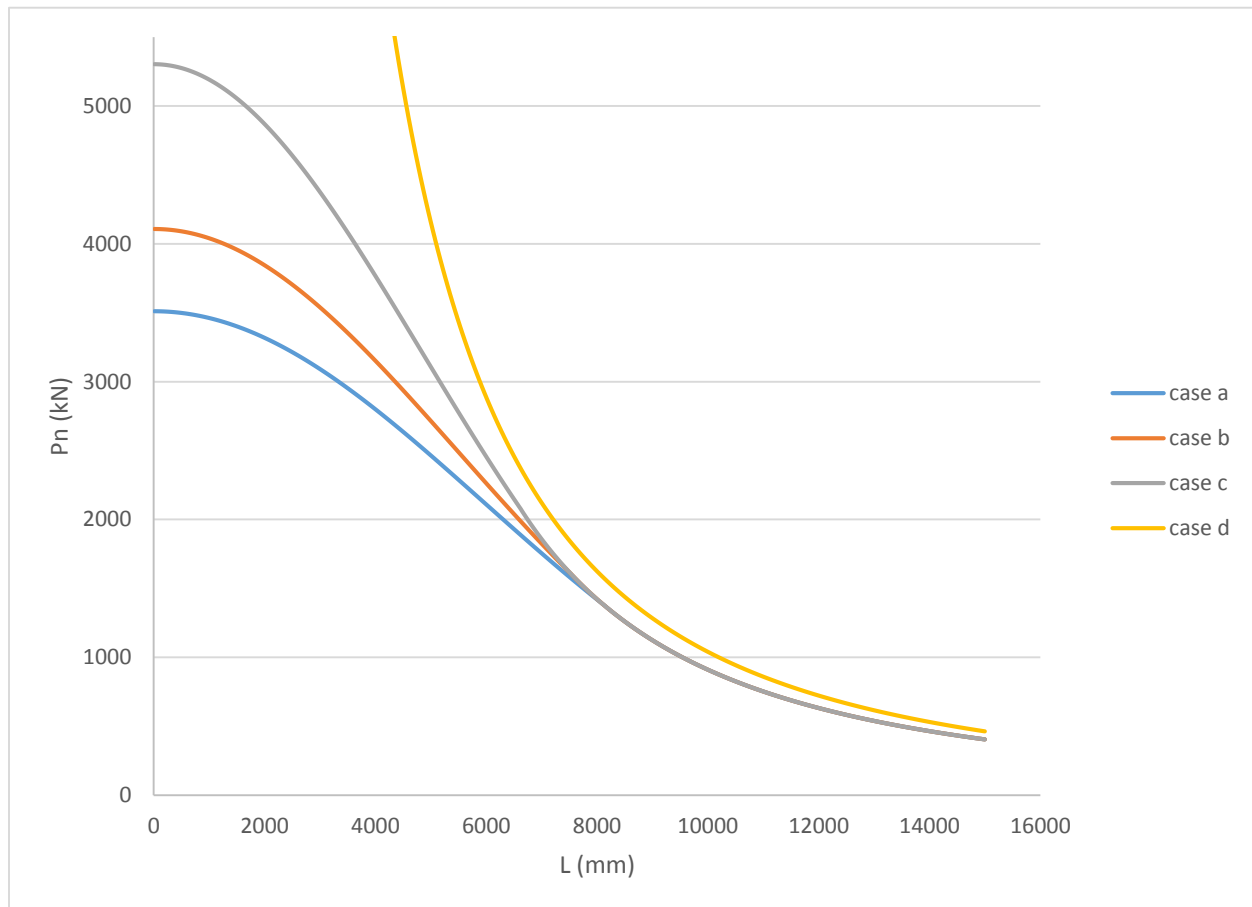


CE388 - FUNDAMENTALS OF STEEL DESIGN

2014-2015 Spring Term

Problem Set 2 - Answers

1)



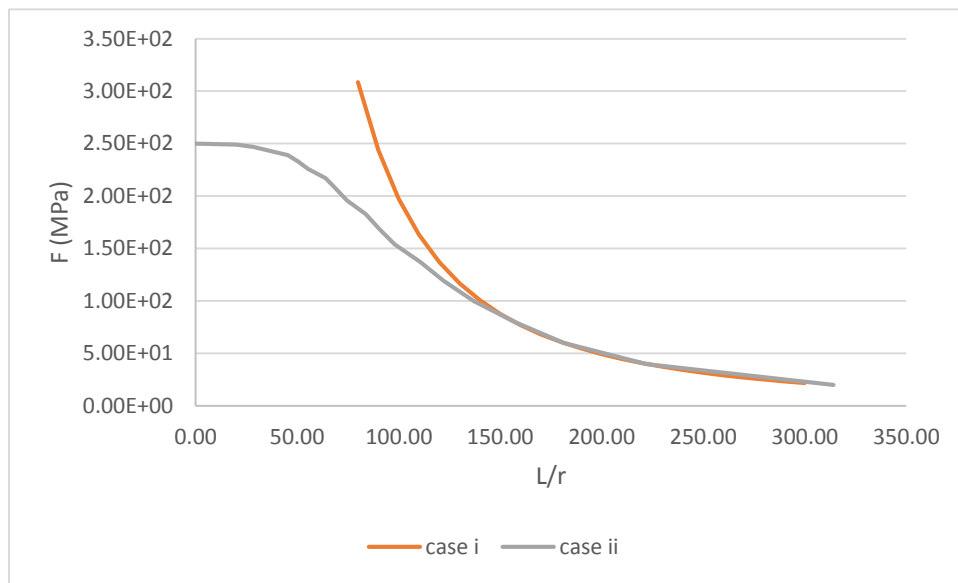
2)

	a		b
	i	ii	
$\phi_c P_n$ (kN)	6801.80	8453.10	3122.30
$\frac{P_n}{\Omega}$ (kN)	4525.48	5624.13	2077.37

3)

Section	In plane		Out of plane		
	$\phi_c * P_n$	Check	$\phi_c * P_n$	Check	
IPN600	5351.559	OK	4351.316	Not OK	
IPE600	3780.777	Not OK	2822.58	Not OK	
HEA650	5107.285	OK	5198.24	OK	
HEB500	5056.702	OK	5192.129	OK	Lightest
HEM300	5928.841	OK	6745.239	OK	
HD320*198	5144.583	OK	5582.21	OK	

4)



5)

$$a_{\min} = 310 \text{ mm}$$

6)

Consider each load acting to the system, independently.

P	$\phi_c P_n$ (kN)	$\frac{P_n}{\Omega}$ (kN)
P ₁	6605.65	4394.98
P ₂	6668.94	4437.08
P ₃	5987.20	3983.23
P ₄	6167.04	4103.16