

Contents

Title	Pno
Chapter 1: Introduction	1
Chapter 2: Estimation of Wind Load Effects	2
2.1 Along Wind Effects	2
2.1.1 Basic Design wind speed	3
2.1.2 Wind Profile	3
2.1.3 Design Wind pressure	5
2.1.4 Force Resultants	6
2.1.5 Dynamic Effects and Gust factor	9
2.1.6 Analysis using STRAP	10
2.1.7 Expected Maximum Moments	11
2.2 Across Wind Effects	12
2.2.1 Vortex Shedding	13
2.2.2 Chimney modeling and estimation of shape factor and time period	14
2.2.3 Estimation of Moments	14
2.2.4 Variation of Moments with change in H/D ratio	20
2.2.5 Conclusions of the variational Analysis	21
2.3 Conclusions	24
Chapter 3: Estimation of Earthquake load Effects	25
3.1 Introduction	25
3.2 Estimation of loads	26
3.2.1 Design seismic coefficients	28
3.3 Calculations for a typical case	29
3.4 Conclusions	32

Chapter 4: Estimation of Temperature load Effects	33
4.1 Introduction	33
4.2 Equations for evaluation of stresses	35
4.3 Conclusions	39
Chapter 5: Estimation of Design Resistance and Development of Design Charts	40
5.1 Introduction	40
5.2 Characteristic Stress-Strain Curve for Steel	41
5.3 Characteristic Stress-Strain Curve for Concrete	42
5.4 Calculation of Ultimate Moments	44
5.5 Interaction Curve	46
5.5.1 Family of Interaction Curves	48
5.5.2 Derivation of Equations used	50
5.6 Conclusions	52
Chapter 6: Design and detailing of Example Chimney	53
6.1 Introduction	53
6.2 Design of chimney	53
6.3 Design of foundation	57
6.4 Conclusions	60
Chapter 7: Summary and Conclusion	61

Acknowledgements	i
Abstract	ii
Contents	iii
List of figures	vi
List of tables	vii
List of important symbols	viii
Appendix	I
References	XI