

DIN EN 1998-3:2006-04 (E)

Eurocode 8: Design of structures for earthquake resistance - Part 3: Assessment and retrofitting of buildings

Contents		Page
FOREWORD		4
1	GENERAL	9
1.1	SCOPE	9
1.2	NORMATIVE REFERENCES	10
1.2.1	General reference standards	10
1.3	ASSUMPTIONS	10
1.4	DISTINCTION BETWEEN PRINCIPLES AND APPLICATION RULES	10
1.5	DEFINITIONS	10
1.6	SYMBOLS	10
1.6.1	General	10
1.6.2	Symbols used in Annex A	10
1.6.3	Symbols used in Annex B	12
1.7	S.I. UNITS	13
2	PERFORMANCE REQUIREMENTS AND COMPLIANCE CRITERIA	14
2.1	FUNDAMENTAL REQUIREMENTS	14
2.2	COMPLIANCE CRITERIA	15
2.2.1	General	15
2.2.2	Limit State of Near Collapse (NC)	15
2.2.3	Limit State of Significant Damage (SD)	16
2.2.4	Limit State of Damage Limitation (DL)	16
3	INFORMATION FOR STRUCTURAL ASSESSMENT	17
3.1	GENERAL INFORMATION AND HISTORY	17
3.2	REQUIRED INPUT DATA	17
3.3	KNOWLEDGE LEVELS	18
3.3.1	Definition of knowledge levels	18
3.3.2	KL1: Limited knowledge	19
3.3.3	KL2: Normal knowledge	20
3.3.4	KL3: Full knowledge	20
3.4	IDENTIFICATION OF THE KNOWLEDGE LEVEL	21
3.4.1	Geometry	21
3.4.2	Details	22
3.4.3	Materials	22
3.4.4	Definition of the levels of inspection and testing	23
3.5	CONFIDENCE FACTORS	23
4	ASSESSMENT	24
4.1	GENERAL	24
4.2	SEISMIC ACTION AND SEISMIC LOAD COMBINATION	24
4.3	STRUCTURAL MODELLING	24
4.4	METHODS OF ANALYSIS	25
4.4.1	General	25
4.4.2	Lateral force analysis	25
4.4.3	Multi-modal response spectrum analysis	26
4.4.4	Nonlinear static analysis	26
4.4.5	Non-linear time-history analysis	27
4.4.6	q-factor approach	27
4.4.7	Combination of the components of the seismic action	27
4.4.8	Additional measures for masonry infilled structures	28

4.4.9	Combination coefficients for variable actions	28
4.4.10	Importance classes and importance factors	28
4.5	SAFETY VERIFICATIONS	28
4.5.1	Linear methods of analysis (lateral force or modal response spectrum analysis) 28 4.5.2	
	Nonlinear methods of analysis (static or dynamic)	29
4.5.3	q-factor approach	29
4.6	SUMMARY OF CRITERIA FOR ANALYSIS AND SAFETY VERIFICATIONS	29
5	DECISIONS FOR STRUCTURAL INTERVENTION	31
5.1	CRITERIA FOR A STRUCTURAL INTERVENTION	31
5.1.1	Introduction	31
5.1.2	Technical criteria	31
5.1.3	Type of intervention	31
5.1.4	Non-structural elements	32
5.1.5	Justification of the selected intervention type	32
6	DESIGN OF STRUCTURAL INTERVENTION	34
6.1	RETROFIT DESIGN PROCEDURE	34
ANNEX A (INFORMATIVE) REINFORCED CONCRETE STRUCTURES.35 ANNEX B (INFORMATIVE)		
	STEEL AND COMPOSITE STRUCTURES	55
ANNEX C (INFORMATIVE) MASONRY BUILDINGS		81