

DIN EN 1993-1-7:2010-12 (E)

Eurocode 3: Design of steel structures - Part 1-7: Plated structures subject to out of plane loading (includes Corrigendum AC: 2009)

Contents		Page
Foreword		3
1	General	4
1.1	Scope	4
1.2	Normative references	4
1.3	Terms and definitions	5
1.4	Symbols	6
2	Basis of design	9
2.1	Requirements	9
2.2	Principles of limit state design	9
2.3	Actions	9
2.4	Design assisted by testing	10
3	Material properties	10
4	Durability	10
5	Structural analysis	10
5.1	General	10
5.2	Stress resultants in the plate	10
6	Ultimate limit state	15
6.1	General	15
6.2	Plastic limit	15
6.3	Cyclic plasticity	16
6.4	Buckling resistance	17
7	Fatigue	18
8	Serviceability limit state	18
8.1	General	18
8.2	Out of plane deflection	18
8.3	Excessive vibrations	18
Annex A [informative] - Types of analysis for the design of plated structures		19
A.1	General	19
A.2	Linear elastic plate analysis (LA)	19
A.3	Geometrically nonlinear analysis (GNA)	19
A.4	Materially nonlinear analysis (MNA)	20
A.5	Geometrically and materially nonlinear analysis (GMNA)	20
A.6	Geometrically nonlinear analysis elastic with imperfections included (GNIA)	20
A.7	Geometrically and materially nonlinear analysis with imperfections included (GMNIA)	20
Annex B [informative] - Internal stresses of unstiffened rectangular plates from small deflection theory		21
B.1	General	21
B.2	Symbols	21
B.3	Uniformly distributed loading	21

B.4	Central patch loading	24
Annex C [informative] - Internal stresses of unstiffened rectangular plates from large deflection		
	theory	26
C.1	General	26
C.2	Symbols	26
C.3	Uniformly distributed loading on the total surface of the place	26
C.4	Central patch loading	32