DIN EN 1995-1-2: 2010-12(E)

Eurocode_5: Design of timber structures_- Part_1-2: General_- Structural fire design (includes Corrigendum AC:2009)

Contents

Foreword to EN 1995-1-2:2004 + AC:2009	4
Background of the Eurocode programme	4
Status and field of application of Eurocodes	5
National Standards implementing Eurocodes	5
Links between Eurocodes and harmonised technical specifications (ENs and ETAs) for	•
products	6
Additional information specific to EN 1995-1-2	6
National annex for EN 1995-1-2	7
Section 1 General	9
1.1 Scope	9
1.1.1 Scope of Eurocode 5	9
1.1.2 Scope of EN 1995-1-2	9
1.2 Normative references	10
1.3 Assumptions	10
1.4 Distinction between principles and application rules1.5 Terms and definitions	10
	11
1.6 Symbols	11 14
Section 2 Basis of design	14
2.1 Requirements	14
2.1.1 Basic requirements 2.1.2 Nominal fire exposure	14
2.1.2 Normal me exposure 2.1.3 Parametric fire exposure	14
2.1.3 Farametric life exposure 2.2 Actions	15
2.3 Design values of material properties and resistances	15
2.4 Verification methods	16
2.4.1 General	16
2.4.2 Member analysis	17
2.4.3 Analysis of parts of the structure	18
2.4.4 Global structural analysis	19
Section 3 Material properties	20
3.1 General	20
3.2 Mechanical properties	20
3.3 Thermal properties	20
3.4 Charring depth	20
3.4.1 General	20
3.4.2 Surfaces unprotected throughout the time of fire exposure	21
3.4.3 Surfaces of beams and columns initially protected from fire exposure	23
3.4.3.1 General	23
3.4.3.2 Charring rates	26
3.4.3.3 Start of charring	27
3.4.3.4 Failure times of fire protective claddings	28
3.5 Adhesives	29
Section 4 Design procedures for mechanical resistance	30
4.1 General	30
4.2 Simplified rules for determining cross-sectional properties	30
4.2.1 General	30
4.2.2 Reduced cross-section method	30
4.2.3 Reduced properties method	31
4.3 Simplified rules for analysis of structural members and components	32
4.3.1 General	32
4.3.2 Beams	32
4.3.3 Columns	33
4.3.4 Mechanically jointed members	33
4.3.5 Bracings	34
4.4 Advanced calculation methods	34
Section 5 Design procedures for wall and floor assemblies	35

5.1	General	35
5.2 A	Analysis of load-bearing function	35
	Analysis of separating function	35
Section 6	Connections	36
6.1	General	36
6.2	Connections with side members of wood	36
6.2.	1 Simplified rules	36
6	6.2.1.1 Unprotected connections	36
6	3.2.1.2 Protected connections	37
	6.2.1.3 Additional rules for connections with internal steel plates	38
6.2.2	2 Reduced load method	39
	6.2.2.1 Unprotected connections	39
	6.2.2.2 Protected connections	41
	Connections with external steel plates	41
6.3.	·	41
6.3.2		41
	Simplified rules for axially loaded screws	41
Section 7	•	43
7.1 V	Valls and floors	43
7.1.	1 3	43
7.1.2		43
7.1.3	3 Insulation	43
	Other elements	43
,	informative) Parametric fire exposure	45
	General	45
	Charring rates and charring depths	45
	Mechanical resistance of members in edgewise bending	47
•	informative) Advanced calculation methods	48
	General	48
	Thermal properties	48
	Mechanical properties	50
	informative) Load-bearing floor joists and wall studs in assemblies whose cavities	
	etely filled with insulation	52
	General	52
	Residual cross-section	52
C2.		52
	2 Start of charring	54
	3 Failure times of panels	54
	Reduction of strength and stiffness parameters	56
	informative) Charring of members in wall and floor assemblies with void cavities General	58
		58 58
	Charring rates	58
	Start of charring	58
	Failure times of panels informative) Analysis of the separating function of wall and floor assemblies	60
•	General	60
	Simplified method for the analysis of insulation	60
E2.1	· ·	60
E2.2		61
E2.3		62
E2.4		62
	nformative) Guidance for users of this Eurocode Part	68
ox i (ii		50