

DIN 25459:2014-11 (E)

Reinforced and prestressed concrete containment for nuclear power plants

Contents	Page
Foreword	4
1 Scope	5
2 Normative references	5
3 Terms, definitions and symbols	7
3.1 Terms relating to construction und function	7
3.2 Terms relating to the models	8
4 Requirements on containment vessels	11
5 Materials	11
5.1 Concrete	11
5.2 Reinforcing steel and prestressing steel	12
5.3 Materials for liners, penetration liners and connectors	12
5.3.1 General requirements	12
5.3.2 Liners and penetration liners	13
5.3.3 Connectors	14
6 Actions	14
6.1 General	14
6.2 Permanent actions	14
6.3 Variable actions	14
6.4 Accidental actions	15
6.5 Actions due to various plant conditions and events	15
7 Safety concept	17
7.1 General	17
7.2 Combination rules	17
7.3 Partial safety factors und combination factors for actions	18
7.4 Ultimate limit states	18
7.4.1 General	18
7.4.2 Requirement categories	18
7.4.3 Partial safety factors for the resistance	20
7.4.4 Limits for strain and deformation	21
7.5 Serviceability limit states	21
8 Procedures for structural analysis and verification	22
8.1 General	22
8.2 Global model	22
8.2.1 Structural modelling	22
8.2.2 Analysis using the total structural model	23
8.2.3 Analysis using the partial structural model	23
8.2.4 Verifications	24
8.3 Local model	25
8.3.1 Structural modelling	25
8.3.2 Structural analysis	25
8.3.3 Verifications	26
9 Supervision of construction and quality assurance	27
9.1 General	27

9.2	Reinforced concrete and prestressed concrete members	27
9.3	Liners, penetration liners and connectors	28
10	Initial and in-service testing	28
10.1	General	28
10.2	Initial testing	28
10.2.1	Initial pressure test	28
10.2.2	Initial leakage test	28
10.3	In-service testing	29
	Annex A (informative) Additional parameters and their descriptions	30
	Bibliography	31