

ISO 18229:2018-02 (E)

Essential technical requirements for mechanical components and metallic structures foreseen for Generation IV nuclear reactors

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Units of measurements	4
5	Management system	4
6	Technical requirements	4
6.1	General	4
6.2	Materials	4
6.2.1	General	4
6.2.2	Specification of materials	5
6.2.3	Material conformity declaration	7
6.3	Design	7
6.3.1	General	7
6.3.2	Damages	7
6.3.3	Considerations for operating conditions and load combinations	8
6.3.4	Criteria levels	9
6.3.5	Corrosion, erosion, erosion-corrosion, wear	11
6.3.6	Attachments	11
6.3.7	Sudden variation in the mechanical properties at junctions	11
6.3.8	Nuclear cleanliness requirements	11
6.3.9	Thermal ageing	12
6.3.10	Irradiation	12
6.3.11	Design methods	12
6.4	Fabrication	13
6.4.1	General	13
6.4.2	Identification of materials/parts	14
6.4.3	Preparation of parts	14
6.4.4	Welding	14
6.4.5	Forming and dimension tolerances	16
6.4.6	Cleaning	17
6.4.7	Heat treatment	17
6.5	Tests and examination methods	17
6.5.1	General	17
6.5.2	Methods	17
6.5.3	Procedures	17
6.5.4	Personnel qualification	18
6.6	Final inspection and testing	18
6.6.1	Final inspection	18
6.6.2	Final pressure test	18
6.7	Marking/labelling	18
7	Documentation	19

8	Conformity assessment	19
	Annex A (informative) Description of GEN IV reactors	20
	Annex B (informative) Illustration of material selection for sodium fast reactor (SFR) components .	21
	Annex C (informative) Description of types of damage	22
	Annex D (informative) Documentation	25
	Bibliography	29