

ISO 24131-1:2023-03 (E)

Internal protection by polymeric lining for ductile iron pipes - Requirements and test methods - Part 1: Polyurethane lining

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Technical requirements	3
4.1	General	3
4.2	Surface preparation	3
4.3	Surface roughness	4
4.4	Lining appearance	4
4.5	Lining thickness	4
4.6	Adhesion	4
4.7	Cross linkage	4
4.8	Non-porosity	5
4.9	Hardness	5
4.10	Protection of pipe ends	5
4.11	Marking	5
4.12	Repairs	5
5	Performance requirements	6
5.1	General	6
5.2	Materials in contact with water intended for human consumption	6
5.3	Abrasion resistance only for sewage applications	6
5.4	Chemical resistance only for sewage applications	6
5.5	Indirect impact resistance	6
5.6	Resistance to hot water	6
5.7	Specific lining resistance	6
5.8	Resistance to ovalization	7
5.9	Elongation at break	7
6	Test methods	7
6.1	Routine tests	7
6.1.1	Surface preparation	7
6.1.2	Surface roughness	7
6.1.3	Lining appearance	7
6.1.4	Lining thickness	7
6.1.5	Adhesion	7
6.1.6	Differential scanning calorimetry (DSC)	8
6.1.7	Non-porosity	8
6.1.8	Hardness	8
6.1.9	Marking	8
6.1.10	Repairs	8
6.2	Performance test	8
6.2.1	Abrasion resistance only for sewage applications	8
6.2.2	Chemical resistance only for sewage applications	8
6.2.3	Indirect impact resistance	8

6.2.4	Resistance to hot water	9
6.2.5	Specific lining resistance	9
6.2.6	Resistance to ovalization	10
6.2.7	Elongation at break	10
Annex A (normative) Quality assurance		11
Annex B (informative) Handling, transportation and storage		13
Bibliography		14