

ISO 21809-4:2026-02 (E)

Oil and gas industries including lower carbon energy - External coatings for buried or submerged pipelines used in pipeline transportation systems - Part 4: Polyethylene coatings (2-layer PE)

Contents		Page
Foreword		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	3
4	Symbols and abbreviated terms	7
4.1	Symbols	7
4.2	abbreviated terms	7
5	General requirements	8
5.1	Rounding	8
5.2	Conformity to requirements	8
6	Information supplied by the purchaser	8
6.1	General information	8
6.2	Additional information	8
7	Coating classification	9
7.1	General	9
7.2	Coating systems	9
7.3	Coating thickness classes	10
8	Materials	10
8.1	Pipe	10
8.2	Coating materials	11
8.2.1	Adhesive	11
8.2.2	Polyethylene material	11
8.3	Packaging	12
8.4	Storage and handling of coating materials	12
9	Qualification processes	13
9.1	General	13
9.2	Qualification scheme	13
9.3	Coating qualification	14
9.3.1	General	14
9.3.2	Repair material	15
10	Application of coating	16
10.1	General	16
10.2	Surface preparation	16
10.2.1	Initial preparation and surface preparation	16
10.2.2	Abrasive blast cleaning	16
10.2.3	Surface cleanliness and roughness	16
10.2.4	Surface pre-treatment and salt contamination	17
10.2.5	Surface dust contamination	17
10.3	Coating application	17
10.3.1	General	17
10.3.2	Application of adhesive	18
10.3.3	Application of polyethylene	18
10.3.4	Cutback	18
11	Qualification of coating application and coating system	18

11.1	General	18
11.2	Application procedure specification (APS)	18
11.3	Inspection and testing plan (ITP)	19
11.4	Procedure qualification trial (PQT)	20
11.5	Coating system qualification (CSQ)	21
11.6	Pre-production trial (PPT)	22
11.7	Inspection and testing during production	23
11.8	Inspection and testing	23
	11.8.1 General	23
	11.8.2 Incoming raw materials testing	25
	11.8.3 In-process inspection or measurement by applicator	25
11.9	Testing of the applied coating	26
	11.9.1 General	26
	11.9.2 Minimum requirements of applied coating and frequency of testing	26
	11.9.3 Retests	27
11.10	Test results	28
12	Repair of coated pipe	28
12.1	Repair	28
12.2	Stripping and recoating	28
13	Markings	29
13.1	General	29
13.2	Required markings	29
14	Handling and storage in the coating area	29
14.1	Handling	29
14.2	Storage	29
15	Test reports and inspection certificates	29
15.1	General	29
15.2	Common requirements for reports	30
15.3	Specific requirements for test reports	31
15.4	Specific requirements for sampling reports	31
15.5	Reporting statements of conformity	32
15.6	Reporting opinions and interpretations	32
15.7	Amendments to reports	32
	Annex A (normative) UV ageing test and thermal ageing test	33
	Annex B (normative) Cathodic disbondment test	36
	Annex C (normative) Impact test	45
	Annex D (normative) Indentation test	47
	Annex E (normative) Flexibility test	50
	Annex F (normative) Peel strength test	52
	Annex G (normative) Peel strength test — Hanging mass	56
	Annex H (normative) Inspection of thickness	59
	Annex I (normative) Holiday detection test	61
	Annex J (normative) Lap shear test	63
	Annex K (normative) Hot water immersion test	66
	Bibliography	68