

ISO 23129:2021-09 (E)

Space systems - Thermal control coatings for spacecraft - Atomic oxygen protective coatings on polyimide film

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms, definitions and abbreviated terms	1
3.1	Terms and definitions	1
3.2	Abbreviated terms	3
4	General requirements and recommendations	3
4.1	General	3
4.2	Visual characteristics	4
4.3	Coating thickness	4
4.4	Thermo-optical properties	4
4.5	Thermal vacuum stability	4
4.6	AO resistance	4
4.7	UV resistance	5
4.8	Radiation resistance	5
4.9	Adhesion	5
4.10	Volume resistance	5
4.11	Surface resistance	5
4.12	Secondary electron emission yield	5
4.13	Photoelectron emission yield	5
4.14	Thermal cycling	5
4.15	Repair/Retouch	5
4.16	Cleaning	5
5	Test methods	6
5.1	General	6
5.2	Visual inspection	6
5.3	Coating thickness	6
5.4	Thermo-optical properties	6
5.5	Thermal vacuum stability	7
5.6	AO resistance	7
5.6.1	Product qualification test	7
5.6.2	Life estimation test	7
5.7	UV resistance	7
5.7.1	Product qualification test	7
5.7.2	Life estimation test	8
5.8	Radiation resistance	8
5.8.1	Product qualification test	8
5.8.2	Life estimation test	8
5.9	Adhesion	8
5.10	Volume resistance	9
5.11	Surface resistance	9
5.12	Secondary electron emission yield	9
5.13	Photoelectron emission yield	9
5.14	Thermal cycling (influence of temperatures)	10

5.15	Repair/Retouch	10
5.16	Cleaning	10
6	Requirements and recommendations for application	10
6.1	Consideration for usage	10
6.2	Identification	11
6.3	Protectors	11
6.4	Packing	11
7	Production program of quality assurance	11
7.1	General	11
7.2	Changes and revisions	12
7.3	Record of changes	12
	Annex A (informative) Types of coatings	13
	Annex B (informative) General properties of atomic oxygen protective coatings	14
	Annex C (informative) Coatings selection guideline	16
	Annex D (informative) Visual characteristics guideline	18
	Bibliography	19