

ISO 22551:2020-01 (E)

Fine ceramics (advanced ceramics, advanced technical ceramics) - Determination of bacterial reduction rate by semiconducting photocatalytic materials under indoor lighting environment - Semi-dry method for estimating antibacterial activity on the actual environmental bacteria contamination surface

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Principle	2
5	Materials	2
5.1	Bacteria strains and preparation for tests	2
5.1.1	Bacteria strains	2
5.1.2	Subculture of bacteria strains	3
5.2	Chemicals and implements	3
5.2.1	Dispersion medium for <i>Staphylococcus epidermidis</i>	3
5.2.2	Dispersion medium for <i>Escherichia coli</i>	3
5.2.3	1/5-concentration nutrient broth medium (1/5 NB)	3
5.2.4	1/2-concentration luris-bertani broth medium (1/2 LB)	3
5.2.5	Nutrient agar medium (NA medium)	4
5.2.6	Soybean-casein digest broth with lecithin and polysorbate 80 (SCDLP medium)	4
6	Apparatus	4
7	Test piece	5
8	Procedure	5
8.1	Preparation of test bacterial solution	5
8.1.1	Culturing of test bacteria	5
8.1.2	Preparation of test bacterial solution	5
8.2	Application of test bacterial solution	5
8.2.1	Measurement of test piece mass	5
8.2.2	Application of test bacterial solution	5
8.2.3	Direct application method	5
8.3	Indoor lighting condition	6
8.3.1	Measurement of luminance and preparation of setting position of test pieces	6
8.3.2	Light exposure time	6
8.3.3	Test pieces inoculated with test bacterial solution under light condition	6
8.3.4	Test pieces inoculated with test bacterial solution under dark condition	6
8.4	Measurement of number of living bacteria	7
8.4.1	Washout of inoculated bacteria	7
8.4.2	Measurement of bacterial concentration in washout solution	7
8.4.3	Measurement of bacterial concentration in test bacterial solution	7
9	Calculation	8
9.1	General	8
9.2	Test requirement fulfilment validation	8
9.3	Calculation of reduction rate of living bacteria	9
10	Test report	10
	Bibliography	12