

ISO/TS 21220:2009-10 (E)

Particulate air filters for general ventilation - Determination of filtration performance

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms, definitions, symbols and abbreviated terms	2
4	Filter	6
5	Classification/rating	6
6	Test rig and equipment	6
6.1	Test conditions	6
6.2	Test rig	6
6.3	DEHS test aerosol generation	7
6.4	KCI test aerosol generation	10
6.5	Aerosol sampling system	12
6.6	Flow measurement	13
6.7	Particle counter	13
6.8	Differential pressure-measuring equipment	13
6.9	Dust feeder	13
7	Qualification of test rig and apparatus	17
7.1	General	17
7.2	Air velocity uniformity in the test duct	17
7.3	Aerosol uniformity in the test duct	18
7.4	Particle counter sizing accuracy	18
7.5	Particle counter zero test	19
7.6	Particle counter overload test	19
7.7	100 % efficiency test	19
7.8	Zero % efficiency test	19
7.9	Aerosol generator response time	20
7.10	Correlation ratio	20
7.11	Pressure drop checking	20
7.12	Dust feeder air flow rate	21
7.13	Reference filter check	22
7.14	Activity of the aerosol neutralizer	23
7.15	Summary of qualification requirements	23
7.16	Apparatus maintenance	24
8	Test materials	24
8.1	Test air	24
8.2	Test aerosol	24
8.3	Loading dust	25
8.4	Final filter	26
9	Test procedure	26
9.1	General	26
9.2	Preparation of filter to be tested	27

9.3	Initial pressure drop	27
9.4	Initial efficiency measurement	27
9.5	Conditioning test	29
9.6	Dust loading	29
10	Uncertainty calculation of the test results	31
11	Test report	32
11.1	General	32
11.2	Interpretation of test reports	32
11.3	Summary	33
11.4	Efficiency	35
11.5	Pressure drop and air flow rate	35
11.6	Marking	35
Annex A (normative) Conditioning test		42
Annex B (informative) Shedding from filters		45
Annex C (informative) Commentary		47
Annex D (normative) Pressure drop calculation		51
Bibliography		53