

ISO 23435:2022-04 (E)

Air quality - Test methods for snow depth sensors

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Fundamentals of snow depth sensors	2
4.1	Overview	2
4.2	Observation methods	2
4.3	Points to note	2
5	Test criteria and summary of methods	2
5.1	Test criteria and considerations	2
5.1.1	Measurement performance	2
5.1.2	Installation-related	3
5.1.3	Environmental/operational	3
5.2	Summary of test methods	3
6	Manufacturer design specifications check	4
6.1	Purpose	4
6.2	Requirements to list	4
7	Basic functional test	4
7.1	Purpose	4
7.2	Calibration of the sensor prior to testing	4
7.2.1	Calibration using a reference object	4
7.2.2	Calibration by moving the target surface	5
7.2.3	Plumb procedure (only applicable to sensors using visible laser signals)	6
7.3	Basic functional test procedure	7
7.3.1	Test setup	7
7.3.2	Running test	7
7.3.3	Evaluation of the results	8
7.3.4	Consideration	8
8	Temperature chamber test (optional)	8
8.1	Purpose	8
8.2	Test chamber	8
8.3	Procedure	8
8.4	Evaluation	9
9	Calibration (ground level adjust) test	9
9.1	Purpose	9
9.2	Procedures	9
10	Field tests	9
10.1	Purpose	9
10.2	Duration	9
10.3	Siting	10

10.4	Climate	10
10.5	Installation	11
10.5.1	Mounting and installation of ultrasonic snow depth sensors	11
10.5.2	Mounting and installation of laser-based sensors	11
10.6	Field site equipment	12
10.6.1	Target surface (snow plate)	12
10.6.2	Reference measurements for comparison	12
10.6.3	Auxiliary environmental sensors	13
10.7	Evaluation	13
10.7.1	Malfunctions	13
10.7.2	Automatic quality control	13
10.7.3	Evaluation of differences to reference	13
10.7.4	Errors caused by field inhomogeneity or other unexpected conditions	13
	Bibliography	14