# DIN EN 16589-1:2023-03 (E)

## Laboratory local exhaust devices - Part 1: General requirements and type test methods for articulated extractions arms

## Contents

Page


European foreword ..... 3

Introduction ..... 4

1 Scope ..... 5

2 Normative references ..... 5

3 Terms and definitions ..... 6

4 Test room and general test conditions ..... 10
4.1 Dimension and construction of the test room ..... 10
4.2 Test room conditions ..... 10
4.3 Articulated extract arm installation ..... 10
4.4 Test conditions ..... 10
4.4.1 General ..... 10
4.4.2 Setting extract air volume flow rate ..... 10
4.4.3 Tracer gas ..... 10

5 Type test methods ..... 11
5.1 General ..... 11
5.2 Capture zone measurement ..... 11
5.2.1 General ..... 11
5.2.2 Test Equipment ..... 11
5.2.3 Test Principle ..... 11
5.2.4 Test procedure ..... 12
5.3 Capture efficiency and robustness test ..... 13
5.3.1 Test equipment ..... 13
5.3.2 Test principle ..... 13
5.3.3 Test method ..... 14
5.3.4 Test procedure ..... 14
5.3.5 Data analysis and results ..... 16

6 Technical performance ..... 17
6.1 General ..... 17
6.2 Pressure measurement ..... 18
6.3 Sound pressure level ..... 18
6.4 Sound power level ..... 18
6.5 Reachable workspace ..... 18

7 Alarms and indicators ..... 18
7.1 Airflow alarms ..... 18
7.2 Capture zone indicator ..... 18
7.3 Measuring point for airflow control ..... 19

8 Marking and labelling ..... 19

9 Product manual ..... 19

10 Test report ..... 21

Annex A (informative) Guidance on selection and use of AEA's ..... 23

Annex B (informative) Recommendations for commissioning and validation on-site ..... 28

Bibliography ..... 29