

# ISO 16000-23:2018 (E)

## Indoor air — Part 23: Performance test for evaluating the reduction of formaldehyde and other carbonyl compounds concentrations by sorptive building materials

---

### Contents

	Foreword
	Introduction
1	Scope
2	Normative references
3	Terms and definitions
4	Symbols
5	Principle
6	Apparatus and materials
7	Test conditions
7.1	General
7.2	Test conditions to determine concentration reduction performance
7.2.1	Temperature and relative humidity
7.2.2	Supply air quality and background concentration
7.2.3	Mass transfer coefficient
7.2.4	Air change rate
7.2.5	Supply air concentration
7.3	Factors affecting the concentration reduction performance
7.3.1	General
7.3.2	Temperature and humidity
7.3.3	Concentration of target compound(s) in supply air
7.3.4	Interfering gases
8	Verification of test conditions
8.1	Monitoring of test conditions
8.2	Airtightness of test chamber
8.3	Air change rate in test chamber
8.4	Efficiency of the internal test chamber air mixing
8.5	Recovery
9	Preparation of test chamber
10	Preparation of test specimens
11	Test method
11.1	Background concentration and spiked supply air
11.2	Placing the test specimen in the test chamber
11.3	Time intervals for measurement of test chamber concentration
11.3.1	Test for target compound concentration reduction
11.3.2	Test for long-term reduction performance
11.3.3	Factors affecting the reduction performance
11.4	Air sampling
12	Determination of target compound(s)

**13 Expression of results**

- 13.1 Calculation of area-specific reduction rate**
- 13.2 Calculation of equivalent ventilation rate per area**
- 13.3 Calculation of total mass per area of sorption and saturation mass per area**

**14 Test report**

**Annex A (normative) Sample tube test for long-term reduction performance**

- A.1 Principle**
  - A.1.1 General**
  - A.1.2 Target compound reduction by physical sorption**
  - A.1.3 Target compound reduction by chemisorption and/or decomposition reaction**
- A.2 Apparatus and materials**
- A.3 Test conditions**
  - A.3.1 Supply air concentration**
  - A.3.2 Temperature and relative humidity**
- A.4 Test method**
  - A.4.1 Sampling and pretreatment of test specimen**
  - A.4.2 Preparation of sample tubes**
  - A.4.3 Monitoring the target compound concentration of the supply air**
  - A.4.4 Test for the target compound breakthrough time**
  - A.4.5 Expression of results**
    - A.4.5.1 Calculation of sorption capacity**
    - A.4.5.2 Calculation of saturation mass per area**

**Annex B (normative) System for quality assurance and quality control**

- B.1 General**
- B.2 Project description**
- B.3 Data quality objectives and acceptance criteria**
- B.4 QA/QC approaches and activities**
- B.5 QA/QC audits**

**Annex C (informative) Example measurements of construction materials**

- C.1 General**
- C.2 Testing conditions**
- C.3 Assembly procedure**
- C.4 Sampling procedure and analytical conditions**
- C.5 Measurement**

**Annex D (informative) Example procedure for long-term reduction performance**

- D.1 General**
- D.2 Apparatus**
- D.3 Procedure**
  - D.3.1 Preparation of sample tube**
  - D.3.2 Determination of formaldehyde concentration in the test gas**
  - D.3.3 Determination of breakthrough capacity**
- D.4 Calculation of the breakthrough capacity**

Page count: 27