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Determination of the emission of
volatile organic compounds and
aldehydes by building products—
Sampling, preparation of test
specimens and testing condition—
Part 4: Heat-insulating material
boards

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Contents

	Page
Introduction.....	1
1 Scope.....	1
2 Normative references	1
3 Terms and definitions	2
4 Sampling, and packaging and storage of samples	2
4.1 Site of sampling	2
4.2 Timing for sampling	2
4.3 Sampling procedure and quantity of samples taken	2
4.4 Identification of samples	3
4.5 Packaging of samples	3
4.6 Storage of samples	3
5 Preparation of test specimens	3
5.1 Timing for preparation of test specimens	3
5.2 Preparation of test specimens	3
5.3 Quantity of test specimens to be prepared	4
5.4 Packaging of test specimens	4
5.5 Storage of test specimens	5
5.6 Period of preparation of test specimens	5
5.7 Environment of test specimen preparation	5
5.8 Storage of sample prior to starting the testing	5
6 Sealing of test specimens	5
7 Test conditions	6
8 Installation of test specimens	6
9 Test method	6
10 Test report	7
Annex A (informative) Comparison table between previous and current editions of this Standard on technically significant revisions	8

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

Consequently **JIS A 1902-4:2006** is replaced with this Standard.

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JIS A 1902 series consists of the following 4 parts under the general title “*Determination of the emission of volatile organic compounds and aldehydes by building products—Sampling, preparation of test specimens and testing condition*”:

Part 1: Boards, wallpaper and floor materials

Part 2: Adhesives

Part 3: Paints and coating materials

Part 4: Heat-insulating material boards

Determination of the emission of volatile organic compounds and aldehydes by building products—Sampling, preparation of test specimens and testing condition— Part 4: Heat-insulating material boards

Introduction

This Japanese Industrial Standard specifies practical testing conditions and other requirements for boards for building products, which correspond to the test method provisions given in **JIS A 1901** (hereafter referred to as “the small chamber method”).

This Standard was established in 2006 and the revision at this time has been made to ensure that this Standard, together with the small chamber method, can be used to speed up the process of incorporating the performance requirements regarding emissions of volatile organic compounds (hereafter referred to as “VOC”), formaldehyde and other carbonyl compounds into individual building products standards. The comparison table between previous and current editions of this Standard on technically significant revisions is given in Annex A.

No corresponding International Standard has been established at this point.

1 Scope

This Standard specifies, among requirements for determination of emission factor of VOC, formaldehyde and other carbonyl compounds from heat-insulating materials used as building material using the small chamber method, those influencing the emission, such as sampling, preparation of test specimens and test conditions.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

- JIS A 1901 *Determination of the emission of volatile organic compounds and aldehydes by building products—Small chamber method*
- JIS A 6301 *Sound absorbing materials*
- JIS A 9504 *Man made mineral fibre thermal insulation materials*
- JIS A 9511 *Preformed cellular plastics thermal insulation materials*
- JIS A 9521 *Thermal insulation materials for buildings*
- JIS A 9523 *Loose fill thermal insulation*
- JIS A 9526 *Spray-applied rigid polyurethane foam for thermal insulation*
- JIS Z 8703 *Standard atmospheric conditions for testing*

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in **JIS A 1901**, and the following apply.

3.1 heat-insulating material

material used for the purpose of heat insulation and heat retention, generally having a thermal conductivity coefficient of $0.065 \text{ W}/(\text{m} \cdot \text{K})$ or lower

For heat-insulating materials for building products, the following Japanese Industrial Standards (hereafter referred to as “**JISs**”) are available as material standards: **JIS A 6301**, **JIS A 9504**, **JIS A 9511**, **JIS A 9521**, **JIS A 9523**, **JIS A 9526**. These include materials used for sound insulation purposes as well as for heat insulation and heat retention purposes, that are intended for ceiling, walls, floors and other building-related structures.

4 Sampling, and packaging and storage of samples

4.1 Site of sampling

Product samples shall be collected at the point of manufacture. Depending on the purpose of the test, samples may be collected from storehouses, retail stores or job sites where the products have been delivered.

4.2 Timing for sampling

Samples shall be taken as soon as possible after the normal manufacturing process. Where immediate sampling is impracticable, samples may be taken from products stored in an ordinary storage place such as a storehouse, if within seven days from manufacturing of the product.

NOTE : “As soon as possible after the normal manufacturing process” normally means “at the end of the production process”. However, in the case of products which require curing for moisture adjustment or dimensional stabilization,” as soon as possible as after the normal manufacturing process” is replaced by “as soon as possible after the completion of curing process when they are usable as products”.

4.3 Sampling procedure and quantity of samples taken

Sampling shall be performed following the reasonable sampling plan specified in the individual product standard. The specified quantity of samples shall be taken from the specified position. Where a reasonable sampling plan is not specified, the quantity and position of samples shall be determined by any method that can give information on the quality or production control of the product.

If the product under test is a spray-applied rigid urethane foam heat-insulating material, prepare sample according to the following procedure: prior to preparation, test-spray the material using a foaming device in an indoor environment maintained at the ordinary temperature and ordinary humidity as specified in **JIS Z 8703** after checking the temperature and mix ratio (discharge ratio) of the undiluted solution. Then, on a base material, such as an iron plate ensured to be free from emission of chemical substance which is not less than $300 \text{ mm} \times 300 \text{ mm}$ in size, spray the material to form a