

INDUSTRIAL STANDARD

Translated and Published by Japanese Standards Association

JIS A 1488: 2020

Test method for long term change in apparent thermal conductivity of vacuum insulation panels for buildings

**ICS** 91.100.60; 91.100.99

Reference number: JIS A 1488: 2020 (E)

A 1488: 2020

Date of Establishment: 2020-02-20

Date of Public Notice in Official Gazette: 2020-02-20

Investigated by: Japanese Industrial Standards Committee

Standards Board for ISO area

Technical Committee on Architecture

JIS A 1488: 2020, First English edition published in 2021-09

Translated and published by: Japanese Standards Association Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

In the event of any doubts arising as to the contents, the original JIS is to be the final authority.

© JSA 2021

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan KK/AT

# Contents

			Page
1	Scope		·· 1
2	Normative refer	rences	·· 1
3 3.1 3.2	Terms and defin	nitions, and symbols and units nitions nits	·· 1
4 4.1 4.2 4.3 4.4	General	mbers	·· 3 ·· 3 ·· 4
5 5.1 5.2 5.3	General ······· Specimen ······	ormance of glass wool core VIPs	·· 4 ·· 4
6 6.1 6.2 6.3	General ······· Specimen ······	ormance of silica core VIP	·12 ·12
7	Test report ·····		·15
Annex	x A (normative)	Flow chart of long term performance measurement of glass wool core VIPs · · · · · · · · · · · · · · · · · · ·	·17
Annex	B (normative)	Flow chart of long term performance measurement of silica core VIPs	·18
Annex	C (normative)	Calculation of coefficient showing the relation between the internal pressure and apparent thermal conductivity at the COP	·19
Annex	D (normative)	Determination of gas permeability and acceleration factor of envelope	·21
Annex	E (normative)	Verification of adsorption properties of adsorbent	26

A 1488: 2020

# Foreword

This Japanese Industrial Standard has been established by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Act.

This **JIS** document is protected by the Copyright Act.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, published patent application or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, published patent application or utility model rights.

# Test method for long term change in apparent thermal conductivity of vacuum insulation panels for buildings

JIS A 1488: 2020

## 1 Scope

This Japanese Industrial Standard specifies the method for testing in a laboratory the long term change in apparent thermal conductivity of the vacuum insulation panels (VIPs) for buildings comprising silica particles and glass wool cores.

The method covered by this Standard considers only the permeation of water vapour and dry air from surroundings as parameters affecting the long term change in apparent thermal conductivity, and no other parameters.

#### 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 0202 Thermal insulation — Vocabulary

JIS A 1487 Test method of thermal transmission properties for vacuum insulated building components

JIS A 9529 Vacuum insulation panels for buildings

 ${\it JIS~Z~8126-1} \quad \textit{Vacuum technology} - \textit{Vocabulary} - \textit{Part~1} : \textit{General terms}$ 

JIS Z 8126-2 Vacuum technology — Vocabulary — Part 2: Vacuum pumps and related terms

JIS Z 8126-3 Vacuum technology — Vocabulary — Part 3: Vacuum gauges and related terms

# 3 Terms and definitions, and symbols and units

For the purpose of this Standard, the terms and definitions given in **JIS A 0202**, **JIS A 1487**, **JIS A 9529** and **JIS Z 8126-1** to **JIS Z 8126-3** and the following apply.

#### 3.1 Terms and definitions

### 3.1.1

# long term performance

predicted thermal performance values of VIP when it is integrated into a building component and continuously used under given external and internal conditions

NOTE In this Standard, external and internal conditions are set to be 25 years of continuous use in an environment at a temperature of 23 °C and a relative humidity of 50 % (standard condition), and the average of the apparent thermal conductivity during this period is calculated as the long