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Test methods of bending and
impact for building boards

ICS 91.100.01

Descriptors : wallboard, boards, gypsum plaster, asbestos cement, bend testing

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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, as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Testing Center for Construction Materials (JTCCM)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law. Consequently **JIS A 1408 : 1995** is replaced with this Standard.

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Test methods of bending and impact for building boards

1 Scope This Japanese Industrial Standard specifies the test methods of bending and impact for building boards. The boards shall be a flat plate, and a plate having a convexo-concave shape such as a corrugated plate shall be excluded.

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

JIS B 1501 *Steel balls for ball bearings*

JIS B 7503 *Dial gauges*

JIS G 3101 *Rolled steels for general structure*

JIS R 5201 *Physical testing methods for cement*

JIS Z 8401 *Guide to the rounding of numbers*

3 Definitions For the purposes of this Standard, the following definitions shall apply.

- a) **airdried state** The state is such that the specimen is placed still in a ventilated room for seven days or more.
- b) **dried state** The state is such that the specimen is placed still in a drier at a temperature not exerting a bad influence on the specimen until being to approximately constant mass.
- c) **wetted state** The state is such that the specimen is placed still in a room or vessel at a temperature of 20 °C to 40 °C and at a relative humidity of 90 % or more and reaches an approximately constant mass.
- d) **water-saturated state** The state is such that the specimen is immersed in clean water for 24 h or more.
- e) **amount of deflection** The value obtained by subtracting the mean value of the displacements at the both parts supporting the test specimen from the displacement at the middle of the span.

4 Test specimen

4.1 Shape and dimensions of test specimen The shape shall be a rectangle or a strip, and the dimensions shall be as given in Table 1.

In addition, the test specimen for bending test shall be cut off in both length and width directions of the product when the directionality due to material exists.

Table 1 Shape and dimensions of test specimen

Unit: mm

Shape	For bending test			For impact test		
	Symbol	Length	Width	Symbol	Length	Width
Rectangle	No. 1	1 200	1 000	No. 1	1 000	900
	No. 2	700	600	No. 2	550	450
	No. 3	500	400	No. 3	500	400
	No. 3b	400	300	No. 4	400	300
	No. 4	300	250	No. 5	300	300
	No. 5	200	150	—		
Strip	—	$15 t + 50^{(1)}$	50			

Note (1) t indicates the thickness of product.

4.2 Ageing of test specimen The ageing of the test specimen shall be carried out in one of airdried, dried, wetted, or water-saturated state according to the standard of the respective board products.

5 Test methods

5.1 Bending test

5.1.1 Testing apparatus The testing apparatus shall consist of a bending tester, a support rod, a loading rod and a support plate, and they shall respectively be specified as follows.

- Bending tester** The bending tester shall be based on the bisection point one-line load system and shall be capable of loading at a speed specified in **5.1.2 b)** and shall be equipped with the support rod, loading rod and support plate specified in the following **b)** and **c)**.
- Support rod and loading rod** The support rod and loading rod shall be made of steel and the end of rod which is in contact with the test specimen shall be a semi-circle of 3 mm to 25 mm in radius as shown in Fig. 1. The support rod and the loading rod shall be identical in radius, and the length shall be larger than the width of test specimen.
- Support plate** The support plate shall be made of steel and the shape and dimension shall be as shown in Fig. 1. The support plate shall be used if necessary. The length shall be larger than the width of test specimen.