

Test Number: IVA-26-0082E

Receipt Date: July 29th, 2026

**Test Report on the Floor Impact Sound Level Reduction Index  
of Dry Double Floor System Supported by Anti-Vibration Rubber Mounts**

September 17th, 2026

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## Test Report on the Floor Impact Sound Level Reduction Index

### Client

NALEXIBLE Co., Ltd. (Address: 237-4, Hatakeda, Bizen-city, Okayama 705-0015, Japan)

UTACJAPAN TRADING Co., Ltd. (Address: 237-4, Hatakeda, Bizen-city, Okayama 705-0015, Japan)

### Test specimen

|                            |                                                                                                                                                                              |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Generic name               | Dry Double Floor System Supported by Anti-vibration Rubber Mounts                                                                                                            |
| Trade name*                | Natural Fiber Board                                                                                                                                                          |
| Date of assembly           | August 18th, 2026                                                                                                                                                            |
| Finished floor height      | H 173.5 mm                                                                                                                                                                   |
| Dimensions                 | W 3670 mm x L 2700 mm                                                                                                                                                        |
| Materials and thicknesses* | Solid wood flooring, t 15 mm<br>Sound insulation panel, t 35.5 mm<br>(Plywood, t 9 mm + Natural fiber core material, t 17.5 mm + Plywood, t 9 mm)<br>Particle board, t 20 mm |
| Skirting board*            | MDF Skirting board (Clearance with the flooring: 2 mm)                                                                                                                       |
| NOTE 1                     | Details of the test specimen are shown in Annexed Drawing 1, and its construction is shown in Photos 1-5.                                                                    |
| NOTE 2                     | An asterisk (*) indicates information provided by the client.                                                                                                                |

### Test method

The test was based on the following standards and guidelines. The testing setup is shown in Fig. 1.

- JIS A 1440-1:2007, “Acoustics—Laboratory measurements of the reduction of transmitted impact sound by floor coverings on a solid standard floor – Part 1: Method using standard light impact source”
- JIS A 1440-2:2007, “Acoustics—Laboratory measurements of the reduction of transmitted impact sound by floor coverings on a solid standard floor – Part 2: Method using standard heavy impact sources”
- General Building Research Corporation of Japan, “Guidelines for rating floor impact sound reduction performance grades of flooring materials” (March, 2008)

### Test results

The test results are shown in Table 1. The floor impact sound reduction performance grades were as follows.

- Standard light impact source (Tapping machine) :  $\Delta LL$  (II)-3S. (The finished floor height exceeds 150 mm.)  
 Standard heavy impact source (1) (Tire impact source):  $\Delta LH$  (II)-3S. (The finished floor height exceeds 150 mm.)

### Note

For reference, displacement measurements for localized concentrated load were conducted. The measurement method and results are presented in Appendix Table 1, while the drawing depicting the load application center points and displacement measurement points is provided in Appendix Drawing 1.

### Test dates

Without test specimen: August 17th, 2026 (Source side : 28°C, 51%RH, Receiving side : 28°C, 80%RH)

With test specimen: August 18th, 2026 (Source side : 25°C, 47%RH, Receiving side : 28°C, 80%RH)

### Testing facility

Floor Impact Sound Laboratory.

General Building Research Corporation of Japan

(Address: 5-8-1, Fujishirodai, Suita, Osaka 565-0873, Japan)

### The person in charge

Person responsible for the test: OCHIAI Taisei

Person in charge of the test: KASAI Yusuke

----- Nothing below this line -----

**Table 1: Test results of floor impact sound reduction index**

| Center frequency [Hz] | Floor impact sound level [dB] |                    |                            |                       |                    |                            |                                       |                    |                            |
|-----------------------|-------------------------------|--------------------|----------------------------|-----------------------|--------------------|----------------------------|---------------------------------------|--------------------|----------------------------|
|                       | Tapping machine               |                    |                            | Tire impact source    |                    |                            | Rubber ball impact source (reference) |                    |                            |
|                       | Without test specimen         | With test specimen | reduction index $\Delta L$ | Without test specimen | With test specimen | reduction index $\Delta L$ | Without test specimen                 | With test specimen | reduction index $\Delta L$ |
| 63                    | 72.7                          | 69.4               | 3.3                        | 88.9                  | 87.4               | 1.5                        |                                       |                    |                            |
| 125                   | 71.0                          | 61.2               | 9.8                        | 68.4                  | 63.8               | 4.6                        |                                       |                    |                            |
| 250                   | 73.5                          | 57.4               | 16.1                       | 57.0                  | 47.3               | 9.7                        |                                       |                    |                            |
| 500                   | 73.6                          | 49.9               | 23.7                       | 47.1                  | 34.0               | 13.1                       |                                       |                    |                            |
| 1000                  | 75.0                          | 37.8               | 37.2                       |                       |                    |                            |                                       |                    |                            |
| 2000                  | 76.2                          | 25.0               | 51.2                       |                       |                    |                            |                                       |                    |                            |
| 4000                  | 76.3                          | 17 or less         | —                          |                       |                    |                            |                                       |                    |                            |

Floor impact sound level reduction index  $\Delta L$  [dB]

| Octave band center frequency [Hz] | Tapping machine $\Delta L$ [dB] | Tire impact source $\Delta L$ [dB] | $\Delta LL$ (II) - 3 [dB] | $\Delta LH$ (II) - 3 [dB] |
|-----------------------------------|---------------------------------|------------------------------------|---------------------------|---------------------------|
| 63                                | 3.3                             | 1.5                                | 0                         | 0                         |
| 125                               | 9.8                             | 4.6                                | -5                        | -5                        |
| 250                               | 16.1                            | 9.7                                | 14                        | -8                        |
| 500                               | 23.7                            | 13.1                               | 20                        | -8                        |
| 1000                              | 37.2                            |                                    | 24                        |                           |
| 2000                              | 51.2                            |                                    | 26                        |                           |

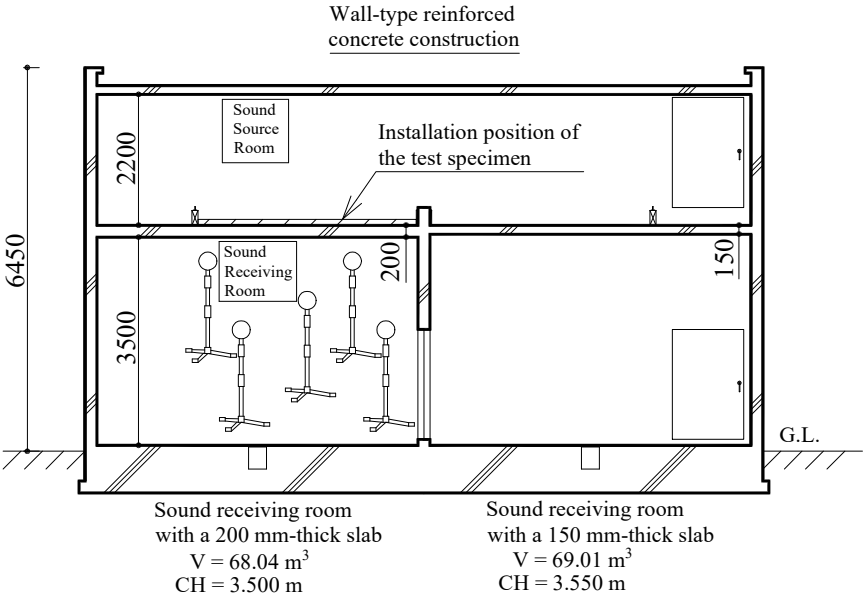
Octave band center frequency [Hz]

Notes

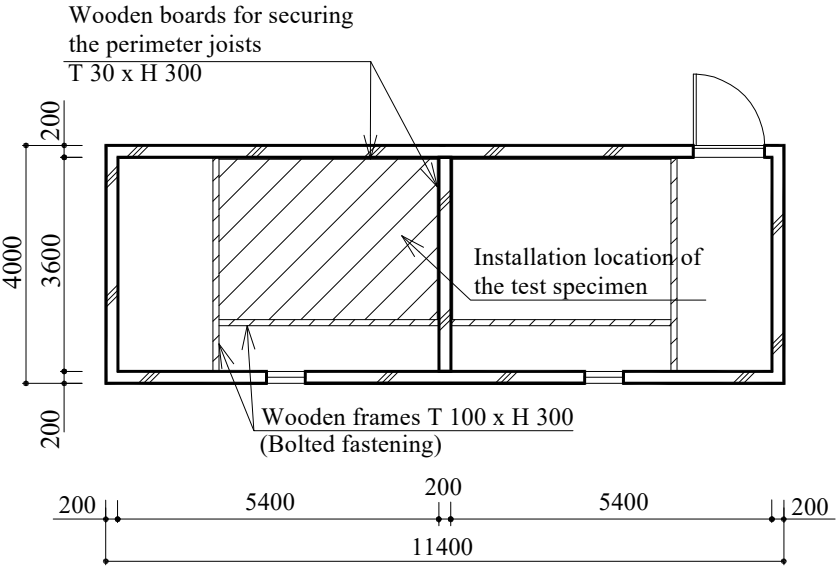
- The tests were conducted on a standard concrete floor with a thickness of 200 mm.
- No damage or other abnormalities were observed in the test specimen upon completion of the test.
- Temperature of the test specimen surface: 24°C

Legends

- Tapping machine
- $\Delta LL$  (II) - 3
- Tire impact source
- · -  $\Delta LH$  (II) - 3



[Section of Laboratory of Floor Impact Sound]



[Plan of Sound Source Room]

[Sound Source Equipment]

|                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------|
| Standard Light Impact Source (Tapping Machine)<br>B&K3207, Mass: 11.2 kg                                                          |
| Standard Heavy Impact Source<br>(Impact Force Characteristics (1) Tire Impact Source)<br>Satsuki Seisakusho Type T, Mass: 40.2 kg |

[Sound Receiving Equipment]

|                                                    |
|----------------------------------------------------|
| Microphone: ONOSOKKI MI-1233<br>MI-1235            |
| ↓                                                  |
| Preamplifier: ONOSOKKI MI-3110<br>MI-3111          |
| ↓                                                  |
| Multi-channel Signal Analyzer:<br>ONOSOKKI DS-3200 |

Fig. 1: Testing Setup (unit : mm)



(a) Appearance of the test specimen

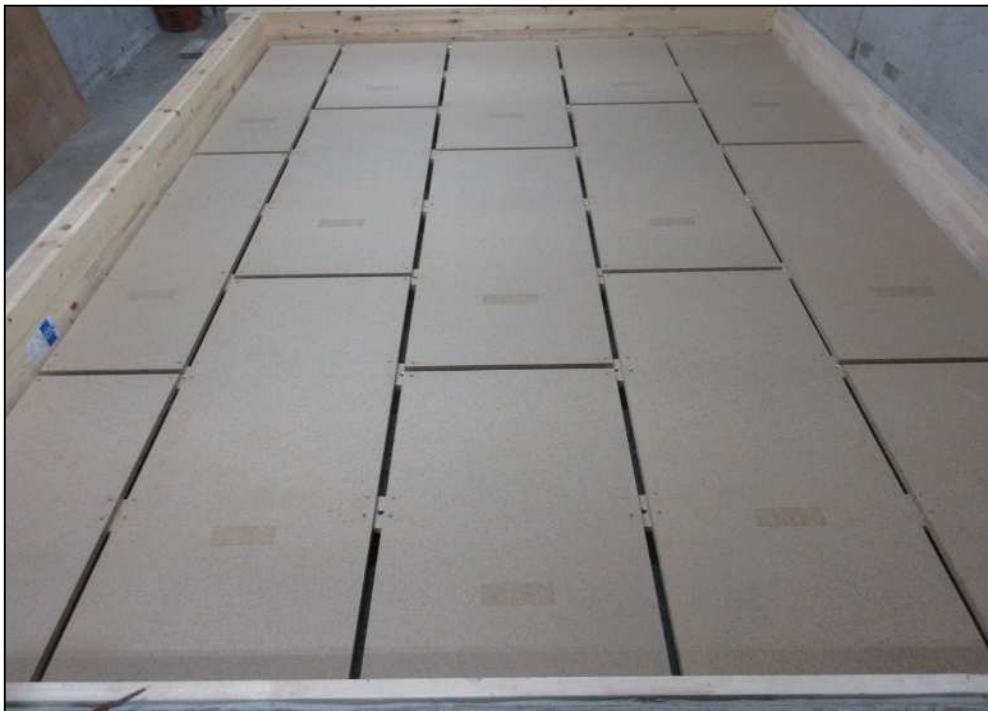


(b) Cross-section at the center of the floor

Photo 1: Construction of the test specimen; Appearance and Cross-section



(a) Layout of wooden perimeter joists



(b) Layout of the particle boards

Photo 2: Construction of the test specimen; Layout



(c) Layout of the sound insulation panels



(d) Layout of the solid wood floorings

Photo 2: Construction of the test specimen; Layout



(a) Clearance of particle boards



(b) Clearance of sound insulation panels

Photo 3: Construction of the test specimen; Clearance between sheathing boards

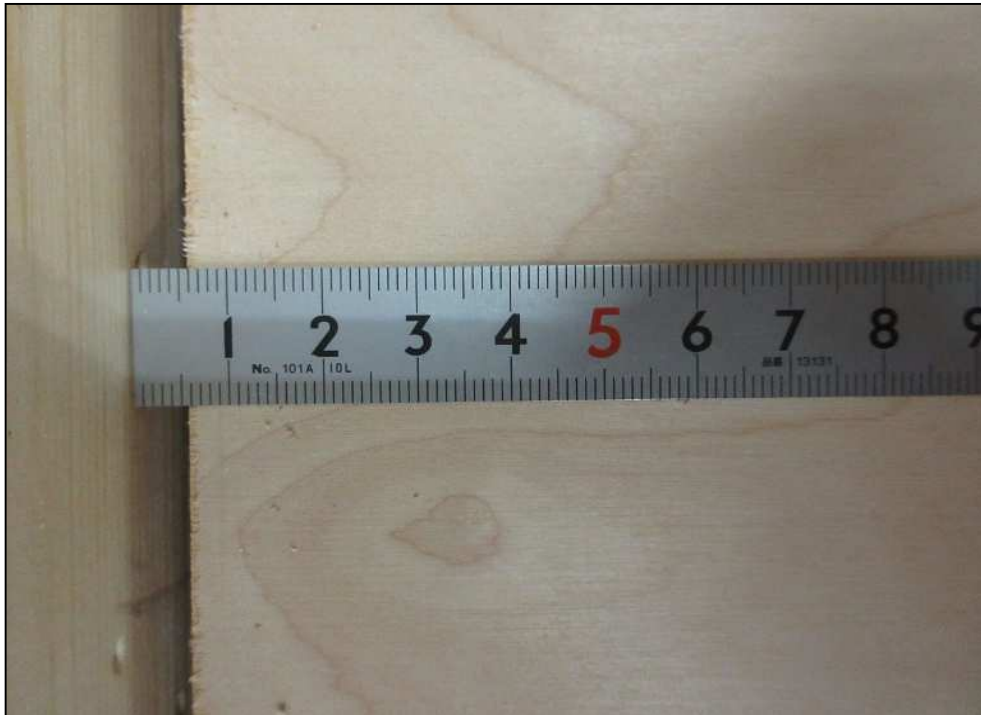


(a) Clearance of wooden perimeter joists



(b) Clearance of particle boards

Photo 4: Construction of the test specimen; Clearance along the perimeter walls



(c) Clearance of sound insulation panels



(d) Clearance of solid wood floorings

Photo 4: Construction of the test specimen; Clearance along the perimeter walls



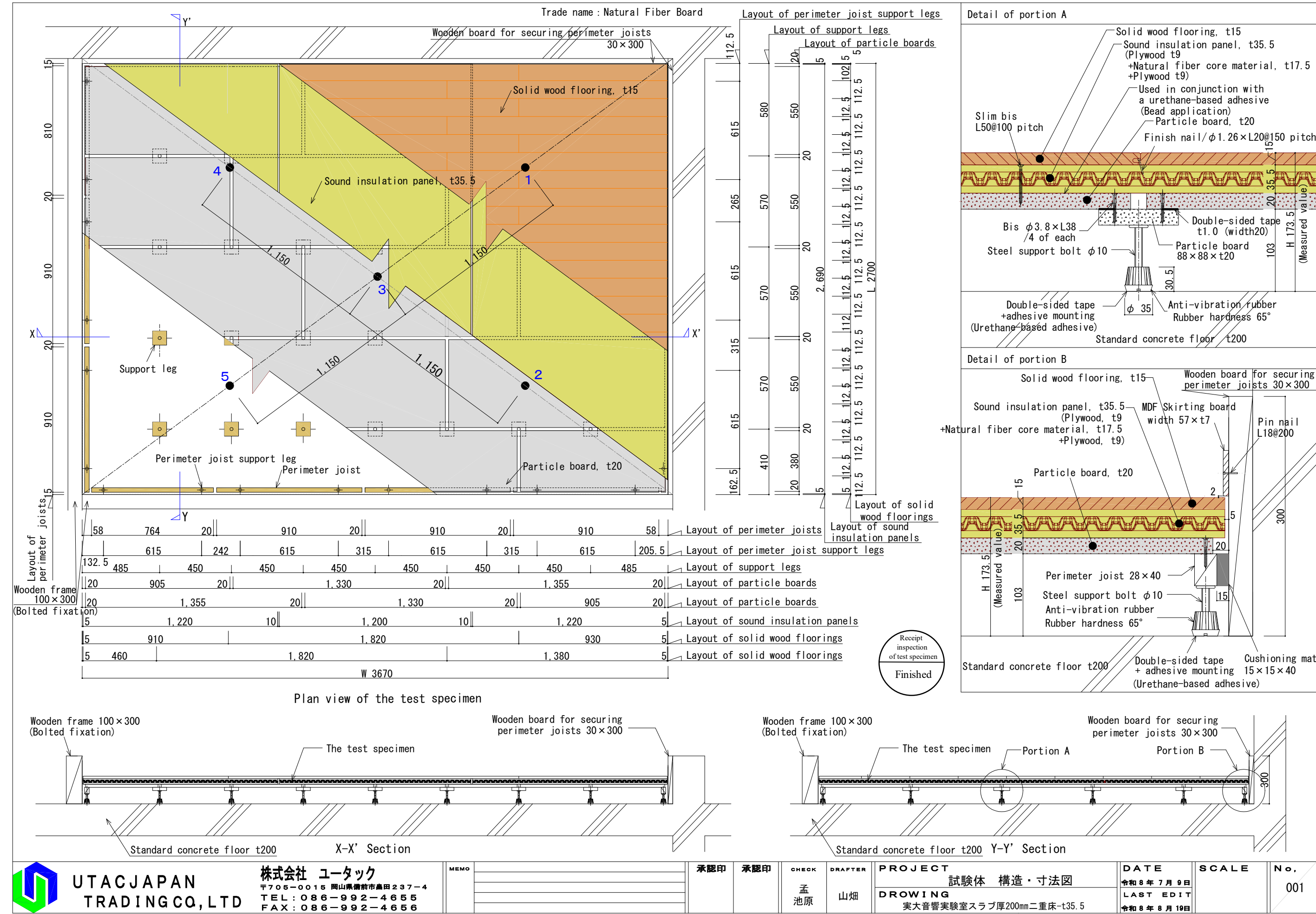
(a) Clearance of solid wood flooring

Photo 5: Construction of the test specimen; Skirting boards

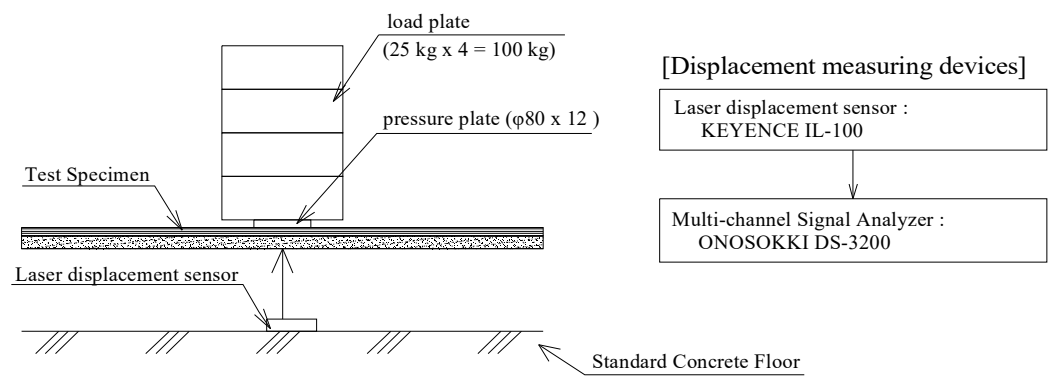
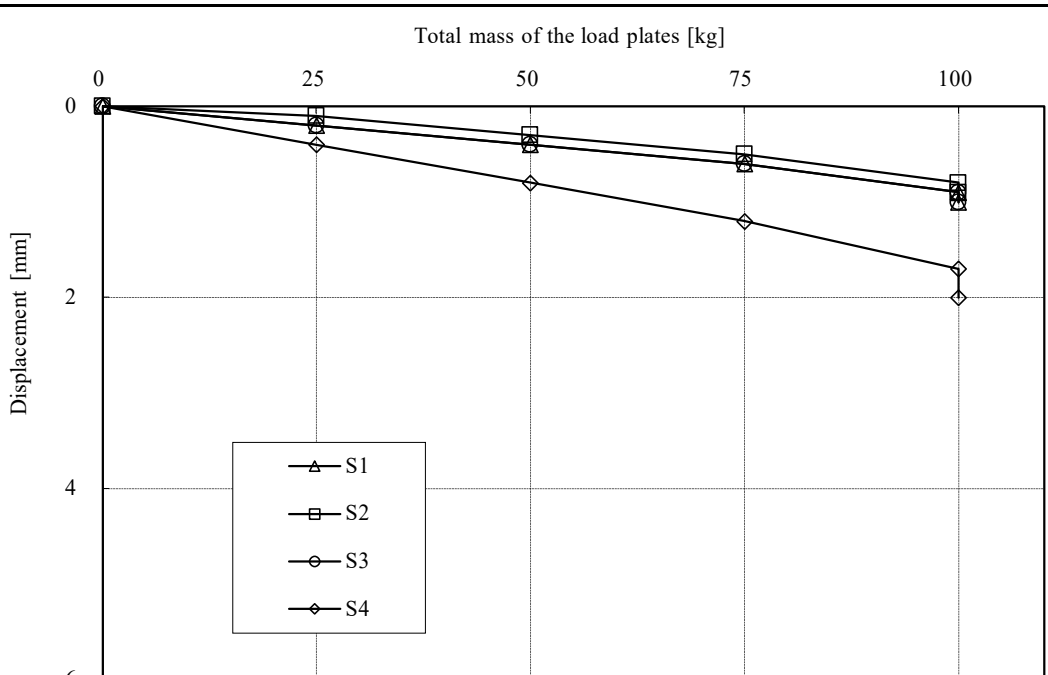
Annexed Drawing 1: Structure and size of the test specimen Unit:mm

Note: The symbols ● 1 ~ ● 5 in the drawing indicate the impact positions.

This drawing was presented by the client.

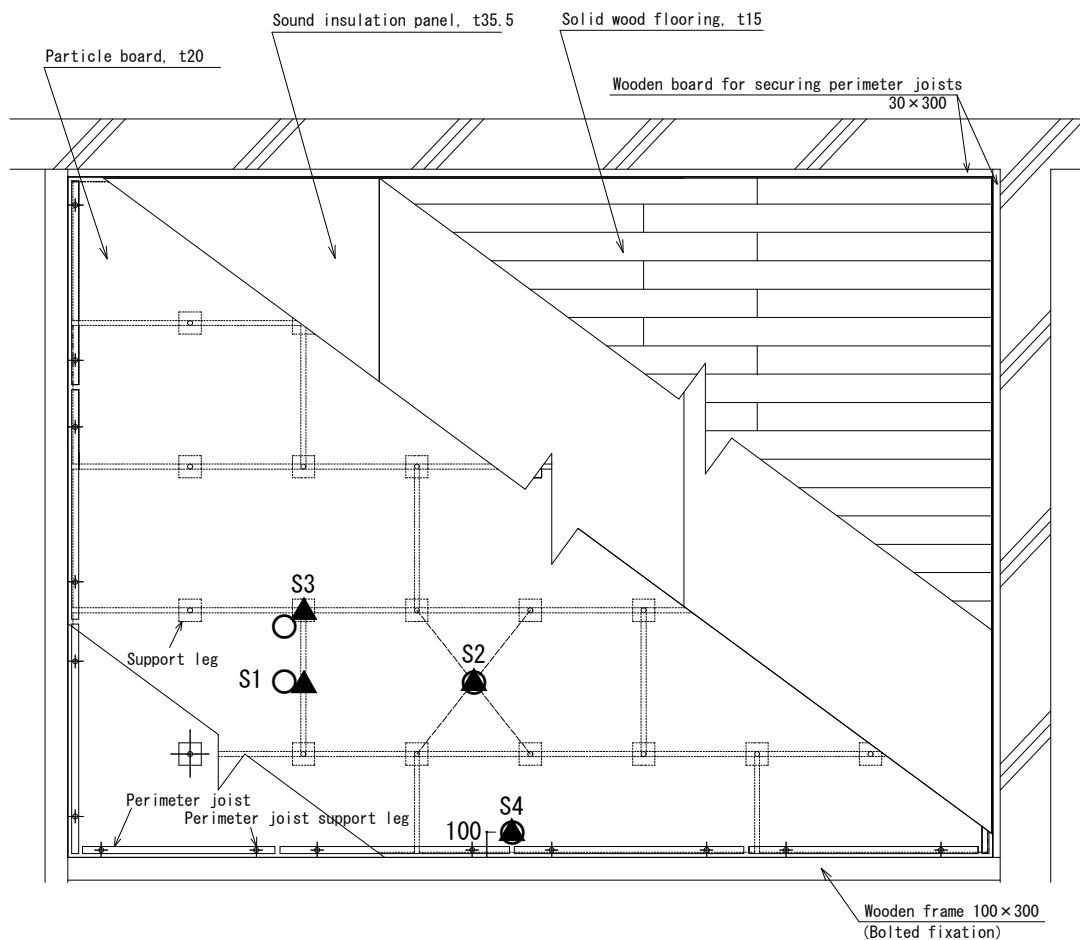


**Appendix Table 1: Measurement method and results for displacement due to load (Localized concentrated load)**

|                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                              |                                    |                   |     |     |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-------------------|-----|-----|-----|
| T<br>e<br>s<br>t<br><br>m<br>e<br>t<br>h<br>o<br>d                                                                                                                                                                                                                                                                                                                                    | <p>A pressure plate 80 mm diameter was placed at the measurement position on the upper surface of the test specimen. Displacements were measured at each of 25, 50, 75, and 100 kg. An outline of the measurement setup is shown in the figure below.</p>  |                                    |                   |     |     |     |
|                                                                                                                                                                                                                                                                                                                                                                                       | Measured value                                                                                                                                                                                                                                                                                                                               | Total mass of the load plates [kg] | Displacement [mm] |     |     |     |
| T<br>e<br>s<br>t<br><br>r<br>e<br>s<br>u<br>l<br>t<br>s                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                              |                                    | S1                | S2  | S3  | S4  |
|                                                                                                                                                                                                                                                                                                                                                                                       | $d_0$                                                                                                                                                                                                                                                                                                                                        | 0                                  | 0.0               | 0.0 | 0.0 | 0.0 |
|                                                                                                                                                                                                                                                                                                                                                                                       | $d_{25}$                                                                                                                                                                                                                                                                                                                                     | 25                                 | 0.2               | 0.1 | 0.2 | 0.4 |
|                                                                                                                                                                                                                                                                                                                                                                                       | $d_{50}$                                                                                                                                                                                                                                                                                                                                     | 50                                 | 0.4               | 0.3 | 0.4 | 0.8 |
|                                                                                                                                                                                                                                                                                                                                                                                       | $d_{75}$                                                                                                                                                                                                                                                                                                                                     | 75                                 | 0.6               | 0.5 | 0.6 | 1.2 |
|                                                                                                                                                                                                                                                                                                                                                                                       | $d_{100}$                                                                                                                                                                                                                                                                                                                                    | 100                                | 0.9               | 0.8 | 0.9 | 1.7 |
|                                                                                                                                                                                                                                                                                                                                                                                       | $d_{100,5min}$                                                                                                                                                                                                                                                                                                                               | 100                                | 1.0               | 0.9 | 1.0 | 2.0 |
|                                                                                                                                                                                                                                                                                                                                                                                       | $d_{resid,5min}$                                                                                                                                                                                                                                                                                                                             | 0                                  | 0.0               | 0.0 | 0.0 | 0.1 |
| <p>* In the table above, the measured value <math>d_{xx}</math> indicates the displacement immediately after applying the xx kg load plates. The values <math>d_{100, 5min}</math> and <math>d_{resid, 5min}</math> indicate the displacement after holding the 100 kg load plates in place for 5 minutes, and the residual displacement 5 minutes after unloading, respectively.</p> |                                                                                                                                                                                                                                                                                                                                              |                                    |                   |     |     |     |
|                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                              |                                    |                   |     |     |     |

Appendix Drawing 1: Drawing depicting the load application center points and displacement measurement points. (Unit : mm)

Note: The symbols ▲S1~▲S4 indicate the load application center points.  
The symbols ○S1~○S4 indicate the displacement measurement points.



Plan view of the test specimen

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