



JAPAN MARINE SCIENCE INC.

SOLID SQUARE EAST TOWER 3F, 580, Horikawa-cho, Saiwai-ku, Kawasaki-city, Kanagawa, 212-0013, JAPAN
TEL: +81-44-548-9130, FAX: +81-44-548-9134

Dear Sirs,

Guide to Tests with JMS's Large 3-Dimensional Vibration Test Table

1) Vibration Wave Pattern

a) Test for Vibration Characteristics:

Test for a specimen's vibration characteristics are first conducted at random frequencies.

The frequency-analysis method is then used to calculate the transfer function and determine the specimen's characteristic frequency.

b) Earthquake waves, etc.:

Wave patterns in the laboratory's stock: Great East Japan, Hanshin-Awaji, Niigata-Chuetsu, El Centro, Tuft, Off-Kushiro, etc.

Wave patterns supplied by the customer, in ASCII Film form

Wave patterns supplied by the customer must be in ASCII file form, within the vibration table's vibrator characteristics, and available two weeks or more before testing.

c) Vibration Test for IBCs:

UN approval by the Ship Equipment Inspection Society of Japan.

The shapes, types, conditions of vibration characteristics, and measuring points of specimen have to be submitted with a written test plan in advance.

2) Test

Place: Oscillation Testing Group YOKOHAMA LAB

5-32-84, Sugita, Isogo-ku, Yokohama-shi, Kanagawa-ken 235-0033, Japan.

Testing time: 09:00 – 17:00 (noon recess: 12:00 – 13:00)

The customer is responsible for setting the specimen on the vibration table, removing the specimen from the table and confirming any damage to the specimen.

The customer is responsible for preparing any fixtures or jigs for installing the specimen on the vibration table.

Installation of a specimen is done by an overhead traveling crane. Please bring-in a specimen by a pick-up truck instead of a wing body truck. If a wing body truck has to be used, please let us know.

It is necessary for us to prepare a forklift for your operation.

3) Price

[Basic Price]

JPY2,200,000/day for the 1st day and JPY1,800,000/day for the 2nd day and any subsequent days.

Basic Price includes the following a) – c)



JAPAN MARINE SCIENCE INC.

SOLID SQUARE EAST TOWER 3F, 580, Horikawa-cho, Saiwai-ku, Kawasaki-city, Kanagawa, 212-0013, JAPAN
TEL: +81-44-548-9130, FAX: +81-44-548-9134

- a) Total of 39 channels of acceleration sensor measurements:
- b) Report: 1 set (in Japanese)
- c) Work contents:
 - Performance of tests, measurements, data analysis, and a report are included in the basic price.
 - Bring-in, installation, clean-up, and removal of specimen should be organized by customers' responsibility. We are able to support customers for above operation including a handling of overhead traveling crane.

[Additional price]

- a) Overtime testing: JPY300,000/hour
 - Overtime work: JPY200,000/hour
- b) Additional Reports: JPY100,000/set
 - (Reports in English are available at an additional JPY200,000/set)
- c) Acceptance and/or setting in the afternoon before the test date: additional JPY600,000
 - Dismounting and/or removal in the morning after the test date: additional JPY600,000
 - If a full day is needed for the above: JPY1,200,000/day
- d) Additional Acceleration measurement: JPY15,000/ch
 - (If it exceed more than 39ch, another acceleration sensor can be rented.)
- e) Calibration certificates for traceability: JPY10,000/ch
- f) Strain measurement:
 - Strain measurement can be arranged by JPY5,000/measuring point.
 - Strain gauge installation on the specimen: JPY5,000/measuring point.
 - (Biaxial-gauge to be considered as two measurement points, and triaxial-gauge to be considered as three measurement points.)
 - We will be able to prepare strain gauges on actual expense.
- g) Weight/Center of Gravity Measurement: JPY50,000/specimen
- h) Displacement measurement (Laser Displacement meter): JPY150,000/specimen
- i) Displacement measurement (Motion Capture System): Basic measurement (3 channels x, y, z per measurement point) JPY 200,000. If measuring two or more points, an additional measurement is JPY 30,000 per measurement point.
 - ※Please contact us separately for details.
- j) If needed, a forklift can be rented.
- k) Video recording, DVD or BR-D burning as tetrameric view:
 - JPY100,000/day for the 1st day and JPY50,000/day for the 2nd day and any subsequent days.
- l) Seismic intensity meter: JPY150,000/day for the 1st day and JPY100,000/day for the 2nd day and any subsequent days.
- m) If need the trial vibration test, a fee may be charged depending on the volume of work.



JAPAN MARINE SCIENCE INC.

SOLID SQUARE EAST TOWER 3F, 580, Horikawa-cho, Saiwai-ku, Kawasaki-city, Kanagawa, 212-0013, JAPAN
TEL: +81-44-548-9130, FAX: +81-44-548-9134

4) Fixed Date of Test

After receipt of a firm order, we will officially fix the test date.

5) Cancellation Fee

If you would like to cancel the test or change the date after the test date has been fixed, we will charge a cancellation fee as shown in the following percentages of the total amount of our quotation.

① For cancellations two months to one month prior to the fixed test date: 50%

② For cancellations one month prior to the fixed test date: 100%

6) Payment terms

After receipt of our invoice, **payment in cash** must be made by the end of the next month.

A half or full amount of the test fee might be required as advanced payment for first customers.

7) Contact address

Please place your inquiry/request directly by a mail form at our homepage or directly contact with person in charge as shown below. (URL: <https://www.jms-inc.jp/products/oscillation/en>)

<General Inquiries and Applications>

Please contact Mr. Makoto Okumura in YOKOHAMA LAB

Phone: +81-45-772-1324

FAX: +81-45-772-1475

E-mail: makoto.okumura@jms-inc.jp

<Technical Inquiries >

Please contact Mr. Toshikazu Takahashi in YOKOHAMA LAB

Phone: +81-45-772-1324

FAX: +81-45-772-1475

E-mail: toshikazu.takahashi@jms-inc.jp