

# E-isolation User Guide

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- (1) Toward the use of E-isolation
- (2) Flow of using E-isolation
- (3) Application form for use of a E-isolation (Format)
- (4) Use of E-isolation Test Summary Manual (format) filling instructions
- (5) Outline of E-isolation
- (6) Facility usage fees and precautions for use (2023)

Reference: Information of accommodations near E-isolation

\*If there are any discrepancies between this English user guide and the Japanese user guide, the Japanese version shall be regarded as the authoritative source.

Version 3.0  
January 7, 2025

## 1 Toward the Use of E-Isolations

Toward the Use of E-Isolation As part of the Japanese Government's the Cross-ministerial Strategic Innovation Promotion Program (SIP) Phase II, under the theme "Strengthening National Resilience (Disaster Prevention and Mitigation)," a joint team from Kyoto University, Tokyo Institute of Technology, and the Seismic Isolation Research Promotion Organization conducted the project "Development of an Earthquake Behavior Analysis System for Large-Scale Components," with the National Research Institute for Earth Science and Disaster Resilience serving as the managing organization.

E-Isolation was developed through this R&D effort. It is Japan's first test apparatus capable of large-scale dynamic testing of seismic isolation and vibration control members. The test machine was completed in March 2023, followed by commissioning and adjustments, and it has been in operation since June 2023.

This testing device enables high-precision, instantaneous measurements of dynamic behavior and large-deformation characteristics using full-scale products. It supports various seismic isolation bearings—such as laminated rubber bearings and sliding bearings—used in base-isolated structures, as well as dampers employed in seismic isolation and vibration control systems. We hope it will be widely used across applications and contribute to the realization of highly reliable isolation and vibration control structures.

This document is intended to guide users through the process of using E-Isolation and to serve as a reference when preparing test plans. The contents presented here provide a general template; alternative usage and procedures are possible. Please feel free to contact us regarding use of the service.

## 2 Flow of Using E-isolation

### **Submission of application form and test summary**

You will be required to submit the application form and the test summary to the organization secretariat.

If you have any questions, please contact the secretariat.



### **Meetings regarding use (e.g., online meetings via Zoom)**

We will discuss the details of use with the organization secretariat. We will discuss how and when the exam will be conducted, as well as other details. We will contact you at the email address of the test manager listed in the test summary manual.



### **Contacting the Requester for Acceptance of the Exam**

We will contact you by e-mail after considering the acceptance of the test within the organization secretariat.



### **Conclusions of confidentiality agreements**

We will lodge the confidentiality agreement documents related to the conduct of the exam. We will contact you at the office contact information and the email address of the person in charge listed in the exam outline description.



### **Submission and meeting of test implementation plans, and exchange of documents related to test implementation**

Submit the specific matters related to the implementation of the test in the test implementation plan, and we will have a meeting with the requester based on that.

(Test specimens and number, stress content, specific measurement plan, test process, time of delivery of test objects, etc.) It is also possible for the organization secretariat to propose the test implementation method. We will also exchange documents related to usage fees and safety.



### **Conducting the test**

In the presence of the client, we will conduct an afterburner test in accordance with the test implementation plan.



### **Report test results**

We will compile and report the standard report, measurement data, etc. at the organization.

When preparing the test plan, please refer to the overview of the E-isolation and the JSIL brochure ([https://www.jsil.or.jp/002\\_facility/Pamphlet\\_JSIL\\_E\\_241121.pdf](https://www.jsil.or.jp/002_facility/Pamphlet_JSIL_E_241121.pdf)) posted at the end of this document.

#### **【 Inquiries and Documents Submission 】**

Takaaki Miyabara, Secretary

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E-mail: [jsil@jsil.or.jp](mailto:jsil@jsil.or.jp)

Please feel free to contact us with any inquiries!

3 Application Form for Use of E-isolation (format)

YYYY/MM/DD

To: Akira Wada, Representative Director of JSIL

Applicant Name of Organization: \_\_\_\_\_

Representative: \_\_\_\_\_

I apply for the use of E-isolation according to the attachment "Use of a E-isolation Test Summary Manual"

#### 4 Use of E-isolation Test Summary Manual (format) Filling Instructions

<b>Exam Name</b>		The name of the test: "Test of the ○○○○ device", etc.			
<b>Purpose of use</b>		Fill in the certification test, research on ○○ , development of ○○ equipment, etc.			
<b>Test Specimen Type</b>		Fill in the seismic isolation bearing, seismic isolation damper, vibration damper, and other (be specific)			
<b>Principal Examiner</b>	<b>Institution</b>			<b>Name</b>	
	<b>Affiliation and Position</b>				
	<b>Contact</b>	Provide your zip code, address, telephone number, fax number, and e-mail address.			
<b>Joint Implementing Organizations, Personnel and Others</b>		If there are any other organizations that plan to jointly implement it, please fill in			
<b>Administrative Contact</b>	<b>Institution</b>			<b>Name</b>	
	<b>Affiliation and Position</b>				
	<b>Contact</b>	Provide your zip code, address, telephone number, fax number, and e-mail address.			
<b>Requested Period of Use</b>		<b>Period</b>	e.g. From Aug. 2025	<b>Estimated time of occupancy</b>	○○days
<b>Test Size (Size, Weight, Number of Specimens)</b>		Provide the general shape, size, weight, and number of test specimens (if possible, attach drawings separately)			
<b>Request in the use of the facility</b>		<b>Data and results will be released</b>		Indicate whether you plan to publish the exam data and results and how to publish them	
		<b>Scheduled for public experiment</b>		Indicate whether you have plans or not.	
		<b>Other</b>		If you have any questions, please write them in	
<b>Other (questions, etc.)</b>		If you have any questions			

## 5 Outline of E-isolation

### ■ Testing machine load capacity:

#### Vertical Loading Capacity

Load: 36,000kN (static) , 30,000kN (dynamic)

Displacement: 25cm

Speed: 7cm/s

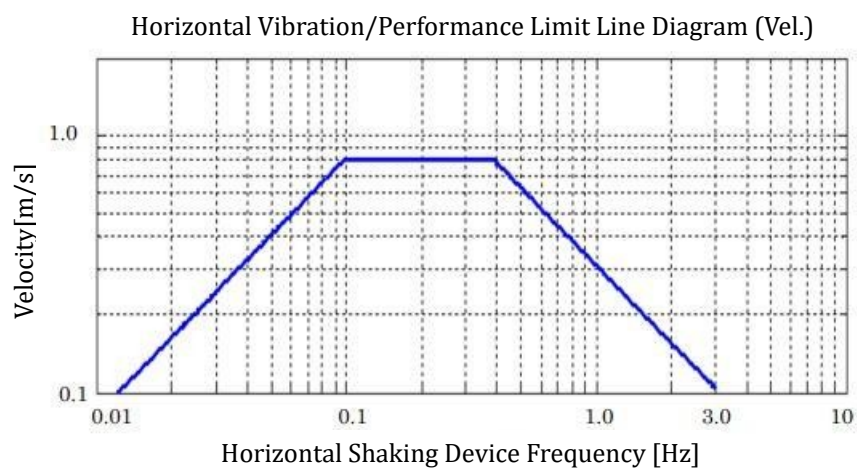
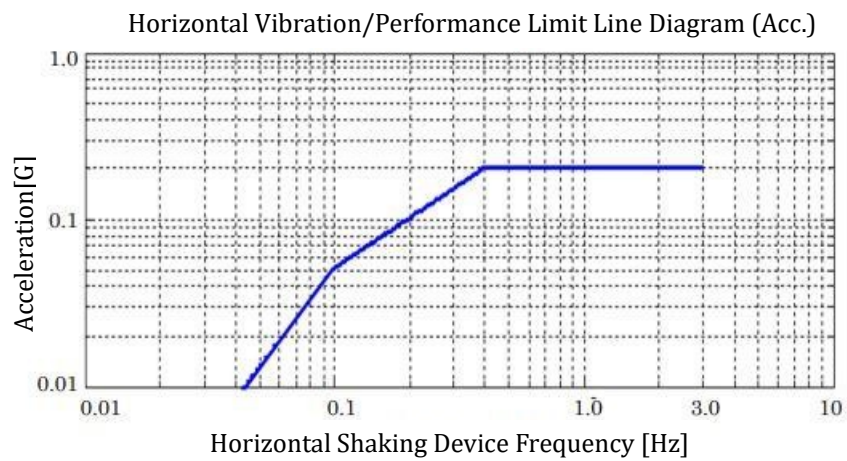
#### Horizontal Loading Capacity

Load: 6,500kN (static) , 5,100kN (dynamic)

Displacement: ± 130cm

Speed: 80cm/s

### ■ Horizontal Shaking Device Performance Limit Line Diagram



## 6 Facility Usage Fee List and Precautions for Use (2023)

### ■ Facility usage fee list

The usage fee for E-Isolation is determined based on the number of days the testing device is occupied.

(Occupancy period: the period during which the test specimen is mounted on the shaker device.)

Facility Usage Fee List (2023)

User Classification	Basic usage fee	Electricity bills	sum
Individual Dynamic Performance Certification	1,300,000 yen/day	200,000 yen/day	1,500,000 yen/day (excluding TAX)

Note: The basic usage fee above covers operation of the E-Isolation, recording and reporting of routine measurement data, and preparation and submission of the routine report. Shipping and transportation costs are not included.

When applying to use the facility, please factor into your schedule the time required for device shipment, customs clearance, transport from the port, and unloading.

### ■ Precautions for facility use

- In principle, the test requester must be present for delivery of the test specimen, as well as for installation of the test specimen and any reinforcement fixtures.
- If external labor is required for installing or removing test specimens and reinforcement fixtures, you may request support from a nearby construction company. Please note that additional fees will apply.
- Preparation of the test implementation plan and the preparation/installation of measuring equipment (sensors, cables, etc.) and measurement fixtures are important responsibilities of the test requester. The test requester and the institute's project lead will cooperate to carry out the test. If you plan to conduct special measurements, additional charges may apply—please contact us in advance.
- After the test is completed, please remove and dispose of the test specimen and any loading jigs/fixtures provided by the test requester.
- Please make use of the available rental measuring equipment, loading jigs, and measurement fixtures.
- The institute can provide support from the experimental planning stage as needed. For details, please consult the institute's project lead.

### Information of accommodations near E-isolation

While Kobe City has many hotels, traveling by car typically takes more than 40 minutes one way. A convenient alternative is the Hyogo Prefectural Disaster Prevention Center Training Accommodation, located about a 15-minute walk from E-Isolation. It offers new, comfortable, fully private rooms at an inexpensive special rate for users of nearby facilities (3,000 yen per night).

If you would like to use this accommodation, please contact JSIL and provide a list of the guests' names along with each person's affiliation, check-in date, and check-out date.

The accommodation is part of the Hyogo Prefectural Disaster Prevention Center and the Hyogo Prefectural Fire Academy. Although there are many rooms, availability can be limited and reservations may not be possible during busy periods. Please contact us as early as possible.