

Compact Seismic Isolation Solution for
Sensitive Equipment and Critical Areas

TIS Seismic[®] Protection Deck: T-SPD



tis[®]
Earthquake Technologies

What is T-SPD?

T-SPD (TIS Seismic Protection Deck) floor and equipment isolation systems are designed to protect non-structural elements, such as critical equipment or valuable objects, within a building from the destructive effects of earthquakes.



Unlike seismic isolation systems, these systems are installed directly on the area or equipment to be protected rather than on the entire structure; they stand out for their compact design and application flexibility.

Depending on the application type, this solution can also be configured as a raised floor system focused on seismic performance, providing advantages in both vibration control and infrastructure organization, particularly in technical spaces.

Equipment Safety[■] in Critical Areas

Data Centers

Museum and Exhibition Objects

Server Cabinets

Hospital Equipment

Laboratory Equipment

Electrical Equipment

Archive Systems





A comprehensive engineering approach developed for the safety of critical devices, and valuable objects.



T-SPD R&D Process



T-SPD – Seismic Protection Deck

- **Period:** 2024-2025
- **Program:** TÜBİTAK Industrial R&D Support Program
- **Objective:** To protect sensitive equipment and/or a specific area within a building from the effects of earthquakes in cases where seismic isolation cannot be applied to the entire structure.

Thesis: METU Department of Civil Engineering Master's Thesis (Thesis No.: 995419)

Sensitive equipment safety,
from scientific research
to field application.



T-SPD Performance Test

Laboratory

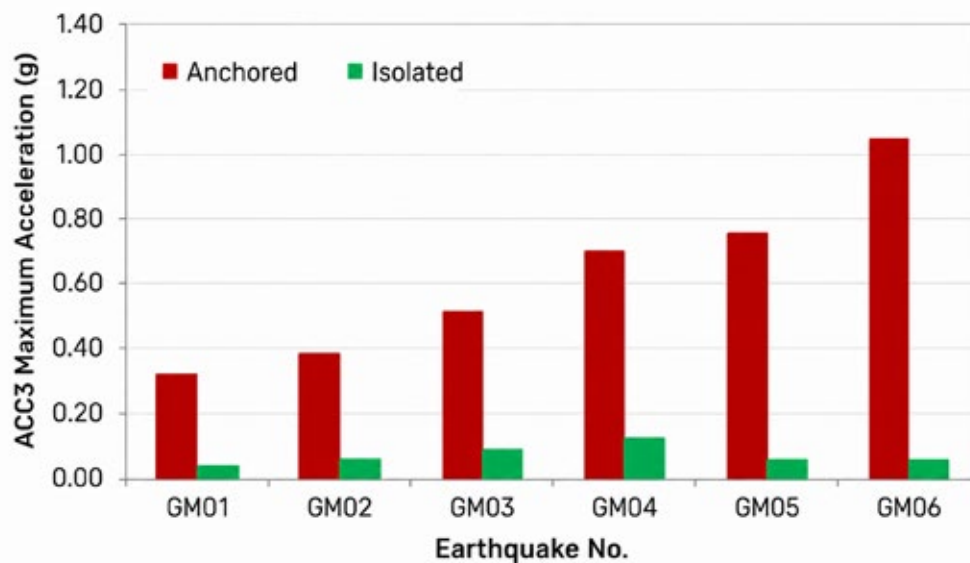
METU Department of Civil Engineering Structural Mechanics Laboratory

Configuration

The performance of T-SPD was evaluated under actual earthquake records applied using a shake table. Its effectiveness was verified based on measurements taken from the electrical cabinet placed on the T-SPD.

Results

The acceleration values transmitted to the electrical panel were significantly reduced by T-SPD, and the seismic demands on the equipment were reduced to one-eighteenth of those experienced by the panel without T-SPD.



T-SPD

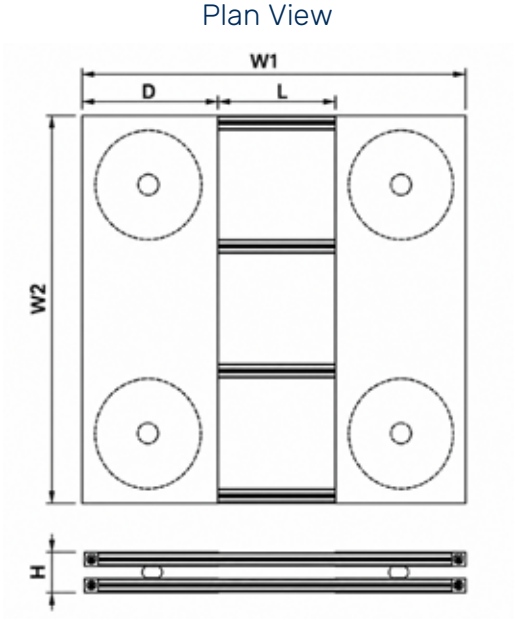
Product Tables

Model	T-SPD-L	T-SPD-M	T-SPD-H
Dimensions (mm)	Plan View Front View	Plan View Front View	Plan View Front View
Seismicity Level	$S_{ae}(T_3) \leq 0.06 \text{ g}$ Low Seismicity	$0.06 \text{ g} < S_{ae}(T_3) \leq 0.10 \text{ g}$ Medium Seismicity	$0.10 \text{ g} < S_{ae}(T_3) \leq 0.14 \text{ g}$ High Seismicity
Maximum Displacement Capacity	$\pm 150 \text{ mm}$ (Omnidirectional)	$\pm 250 \text{ mm}$ (Omnidirectional)	$\pm 350 \text{ mm}$ (Omnidirectional)
Maximum Payload Capacity	2000 kg	2000 kg	2000 kg
Deck Weight	70 – 190 kg	90 – 220 kg	120 – 250 kg
Method of Fixing	High-Friction Sheet	High-Friction Sheet	High-Friction Sheet

** $S_{ae}(T_3)$: Spectral acceleration at a period of 3 seconds.

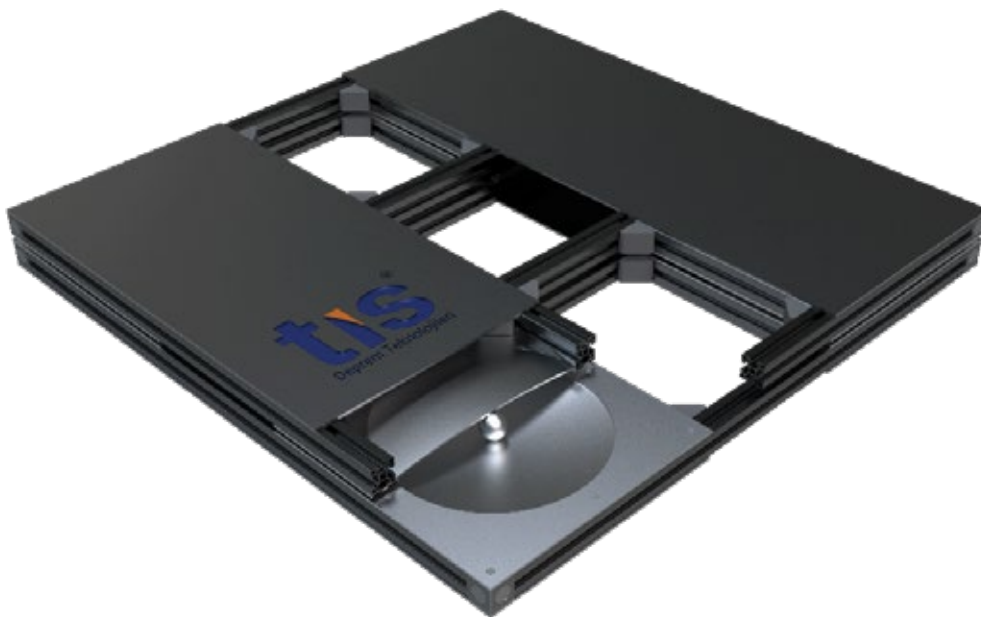
T-SPD

Product Tables

Model	Custom Design
Dimensions (mm)	Plan View  Front View Dimensions W1, W2, D, L, and H can be customized based on project requirements.
Seismicity Level	$S_{ae}(T_3) > 0.14\text{ g}$ – Very High Seismicity
Maximum Displacement Capacity	>350 mm (Omnidirectional)
Maximum Payload Capacity	>2000 kg
Method of Fixing	Custom (high friction sheet, bolts, etc.)

Why T-SPD?

**Strong technical infrastructure in design,
analysis, and manufacturing processes**
More predictable and controlled behavior
Low cost compared to the value it protects
Ease of Manufacturing
Ease of Installation



T-SPD has been developed based on our expertise in earthquake engineering, field experience, and R&D-oriented approach. Through the comprehensive evaluation of project-specific requirements, it provides a sustainable and reliable system alternative that supports structural safety.

Our Quality, Environmental and Occupational Health and Safety Policy

As TiS, we adopt a sustainable management approach in the areas of quality, environment, and occupational health and safety, and commit to:

Continuously improving our management system by ensuring full compliance with the ISO 9001 Quality, ISO 14001 Environmental, and ISO 45001 Occupational Health and Safety Management System standards,

Prioritizing customer satisfaction by manufacturing products in compliance with quality, environmental, and safety standards and delivering them on time,

Maintaining our leadership in the industry by improving our production and project management processes while optimizing costs,

Investing in the training of all our employees, enhancing their competencies, and encouraging active participation in training programs in order to provide advanced engineering solutions,

Developing our production processes to minimize waste and energy consumption by reducing the use of natural resources with an awareness of environmental protection,

Prioritizing occupational health and safety by identifying and minimizing risks with the participation of our employees, stakeholders, and employee representatives, and preventing occupational diseases and workplace accidents,

Conducting our activities in full compliance with international standards and legal requirements,

Protecting the information security and personal data of our customers, suppliers, stakeholders, and employees, and ensuring uninterrupted business continuity by responding to potential breaches as quickly as possible.

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One Vision Against All Hazards: **Integrated Earthquake Technologies**



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