

Company Profile



1. INTRODUCTION

Team Leaders

Emilio SAPINA, CEO

BS & MS in Electronics Engineer
15 years Critical Environments



Juan Jose MARTIN, CTO

BS in Mechanics Engineer
25 years Seismic & Vibration
Control



Main Critical Environments Clients

FUJITSU



Schneider
Electric

Telefonica



HUAWEI

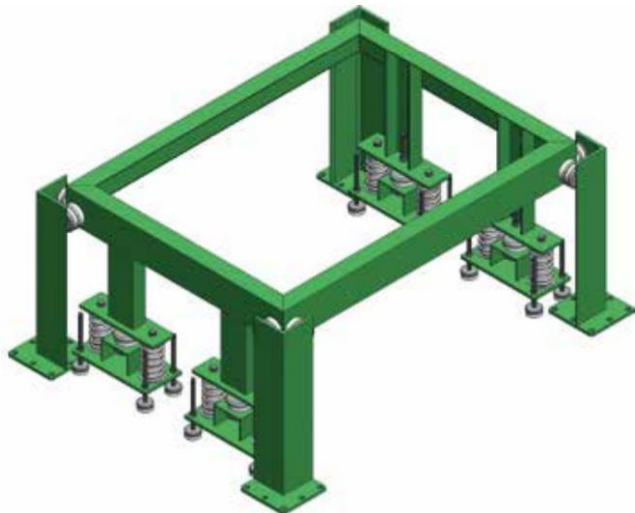


Main Critical Environments Client: Schneider Electric

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UniTR structure
Height 265-1,215 mm

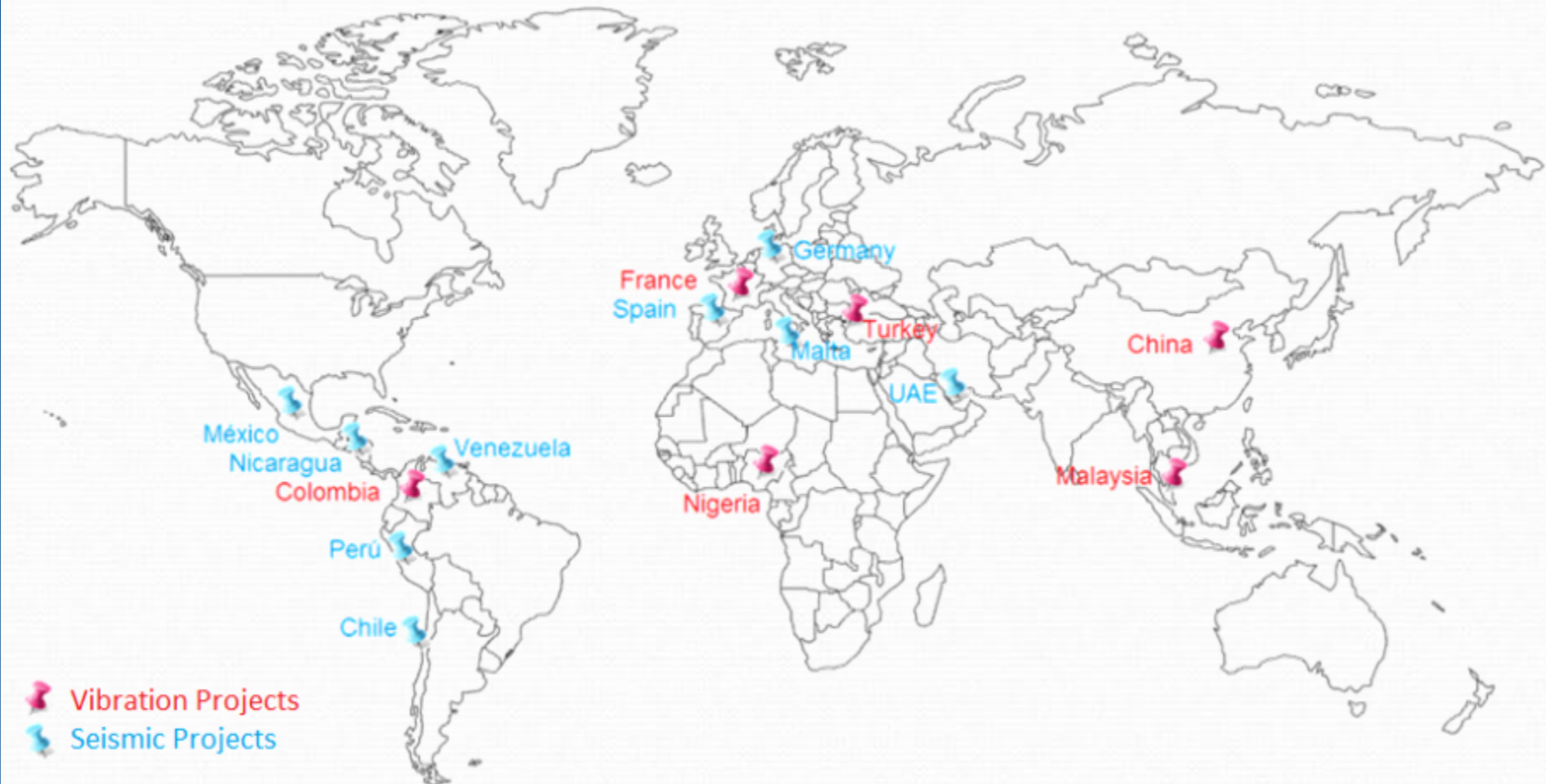


Abrir en Acrobat

Solution for seismic risk areas

To increase the data centre floor safety in case of seismic events, the supporting structure may be further reinforced. It is also possible to install Anti-vibration frames that protect computer equipment from vibrations transmitted through the floor slab.

Worldwide Projects



2. Vibration Control

Different Markets we are present



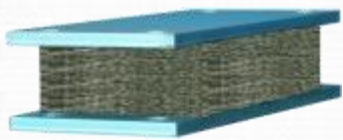
← Aeronautics Electronics Rack Mounting (**Eurofighter**)

40 Slabs (**Alba Synchrotron**) →



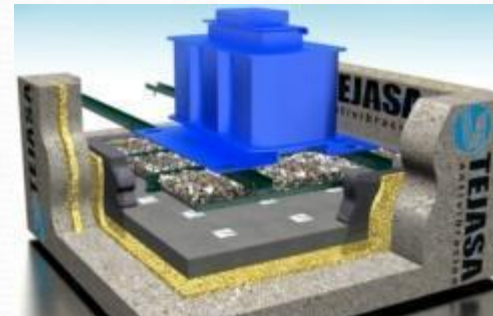
← Wire Rope in Military Ships Racks (**Spanish & French Navy**)

Data Center seismic mounting → (**European Trade Mark Office**)



← High Speed Trains Sandwich Floor (**Bombardier**)

300 Slabs (**Endesa Spanish → Electrical Company**)



Sample of Different Markets

Wire Rope in Military Ships Racks (**Spanish & French Navy**)



Slamming!



Problem: Vibrations & Earthquakes in Critical Rooms



- External Vibrations are accelerations at high frequency
- Earthquakes are accelerations at low frequency
- Both have same negative effect in TI devices

Problem: Vibrations & Earthquakes in IT Devices



Problem: Vibrations in Critical Rooms

- Vibrations **corrupt the Data!**
- Data corruption costs several \$ M



- Nearby Constructions
- Railways, Heavy Traffic
- Generators Start
- Fans of Cooling Units
- Earthquakes
- Accidents or Terrorist Attacks



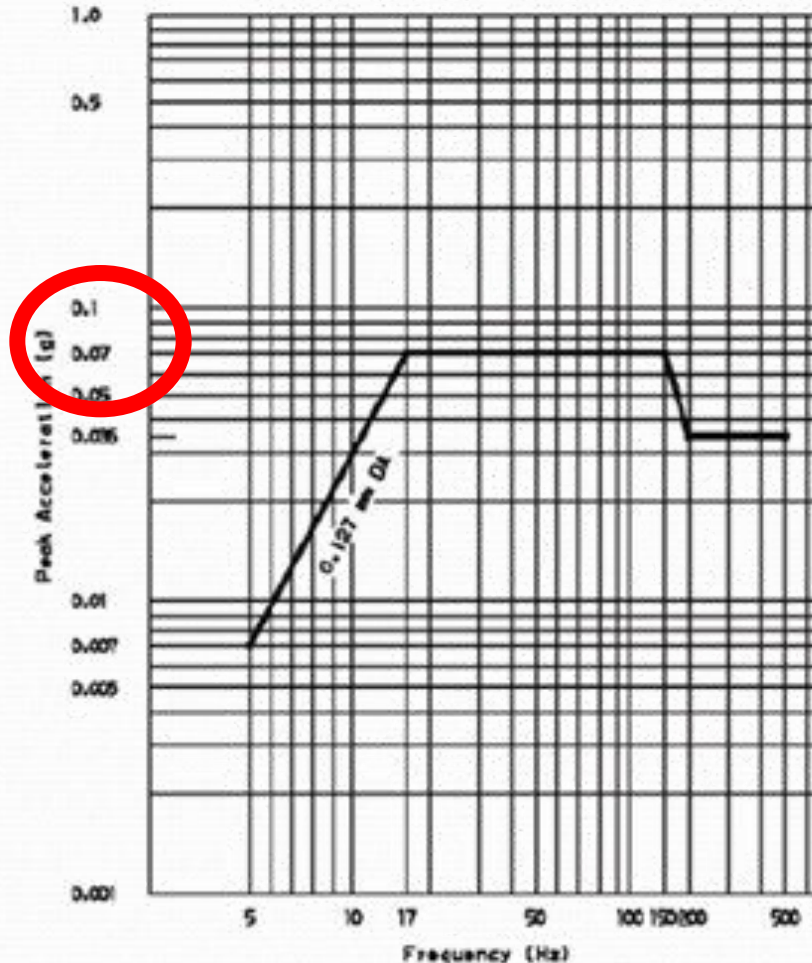
Problem: Effects of vibration in Disk Drives

Peak accelerations greater than $0.5 \text{ g} = 5 \text{ m/s}^2$ in servers could cause permanent damage and loss of data readable.

Manufacturer's Model #	Max. g / Operating	Max. g / Non-Operating	Frequency Range
DEC - Alpha Server - #8200	-0.5 g (f@0.01)	0.5 g - 1.0 g	2-22 hz / 22-500 hz
DEC - Alpha Server - #4100	1.0 g	N / A	10-500 hz
DEC - RZ 26 Drive Unit	0.2 g	N / A	5 hz / 5-22 hz
DEC - RZ 28 Drive Unit	0.5 g (f@0.01)	0.5 g	5-22 hz
DEC - RZ 29 Drive Unit	0.5 g (f@0.04)	0.5 g	58-22 hz / 5-400 hz
HP - Model 20 Drive Unit	0.25g	N / A	5-2000 hz
HP - Enterprise 9000	0.2-0.5 g	0.5 g - 1.0 g	5-500 hz
SGI - Origin Fibre Vault	0.25 g	N / A	5-2000 hz
SUN - Class III Drive	0.25 g (all axis)	1.0 g (all axis)	5-500 hz

Forces generated by low frequency seismic waves are more destructive than higher frequency vibrations because of their longer periods generated with larger amplitudes.

Vibration Standards: ASHRAE 0.07 g = 0.7 m/s²



TC 9.9 Structural and Vibration Guidelines for Datacom Equipment Centers

Solution: Metallic Energy Absorbers Technology

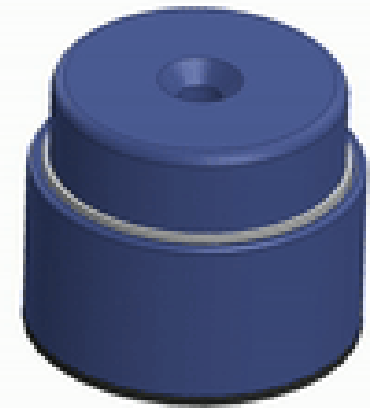
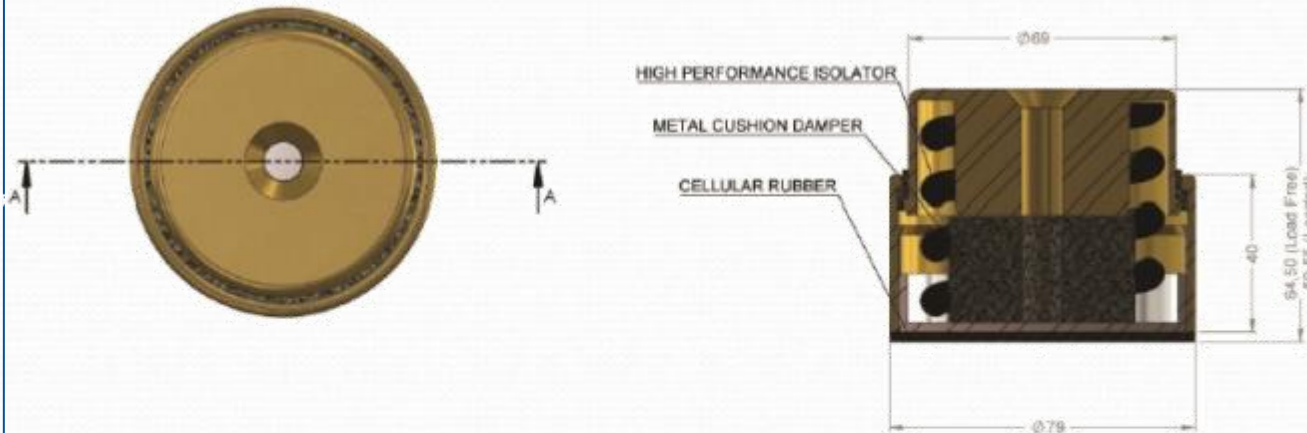
Military Technology ABSORBS 99.99% vibrations very fast
Totally Metallic for accomplish FIRE standards, no rubber
NON CONDUCTIVE to avoid current Leakage



4 Patents in EU and US

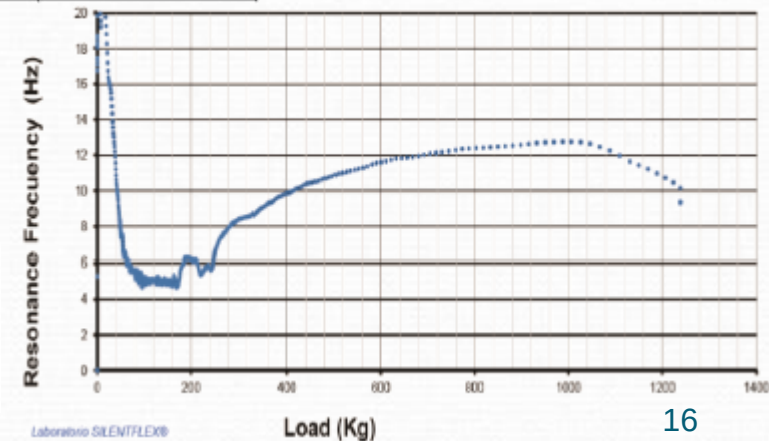


Solution: Metallic Energy Absorbers Technology



Reference	Nominal Load (Kg)	Natural Frequency (Hz)	Free height H (mm)	Metric Thread	Height under max. load H' (mm)
954900 - S1	250 kg 1,000 Kg/rack	4-6	64.5	M10 a M20*	50

* customized manufacture available UNC and BSW upon request



Solution: Metallic Energy Absorbers Technology



Thank You



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