



INNOVATIVE and EFFECTIVE
in HANDLING and TRANSPORT
for
CIVIL AND DEFENCE INDUSTRY

Health Monitoring & Management
Ordine degli Ingegneri della Provincia di Caserta, 08.06.19

VISION ⇒

DESIGN, MANUFACTURE AND QUALIFY INNOVATIVE TURNKEY SOLUTIONS TO SAFELY HANDLE AND TRANSPORT CRITICAL EQUIPMENT IN MOST SEVERE OPERATING SCENARIOS.



1996

START-UP



1998

**PLUG & PLAY
ANTI-VIBRATION FRAME**



1999

**ENVIRONMENTAL LABORATORY
TEST QUALIFICATIONS**



2000

NEW PLANT



2002

**ISO 9001
CERTIFICATION**



2005

**ALUMINIUM
TRANSIT CASE**



2011

**ENVIRONMENTAL
CONTROL MANAGEMENT UNIT**



2012

**ACTIVE AIR-
COOLED 19"
CASE**



2014

**ONU QUALIFICATION FOR
ALUMINIUM LARGE
PACKAGING**



2015

**GRP CASES &
CONTAINERS**



2017

19" RACK



2018

**ELECTRONIC DEPT
START-UP**



CERTIFICATIONS & SOCIAL RESPONSIBILITY

POWERFLEX IS 9001:2015, 18001:2007, 14001:2015 CERTIFIED. THE ISO 9100:2017 CERTIFICATION WILL BE ACHIEVED BY DEC 2019.



KNOW-HOW

**TO MAINTAIN AND IMPROVE ITS EXCELLENCE, POWERFLEX ENGINEERING DEPARTMENT COOPERATES WITH THE MOST IMPORTANT ITALIAN ENGINEERING UNIVERSITIES AND RESEARCH CENTRES.
CURRENT PROJECTS: HORIZON2020 / CLEAN SKY 2 / CASTLE, POR GRP/EMI SHIELDING, PCTO WITH GIORDANI INSTITUTE & CO**

ORGANIZATION

POWERFLEX CURRENTLY EMPLOYS 40 PEOPLE, WITH 10 ENGINEERS IN THE DESIGN-MANUFACTURING-QUALITY-TESTS-MANAGEMENT AREAS

TURNOVER

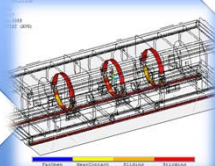
POWERFLEX 2018 TURNOVER WAS ABOUT 2.5M€. THE ONE @ JUNE 2019 IS ABOUT 2.0M€

R&D

POWERFLEX INVESTS ABOUT 3% OF TURNOVER IN R&D



ANALYSIS OF
DESIGN REQS (TS,
SOW) & PROJECT
PLANNING



**ANALYSIS OF
VIRTUAL
PROTOTYPE**



DESIGN BY
3D CAD MODEL



**PROTOTYPE
QUALIFICATION**



**SERIES
MANUFACTURING**

STANDARD PRODUCTS

- Stainless Steel Wire Rope Isolators
- Vibration and Shock Proof Mechanical Frames
- Aluminium Cases & Containers
- GRP Cases & Containers
- Aluminium 19" Rack
- Light, Medium and Heavy Weight Missile/Torpedo Containers
- Environmental CMU



MBDA
ASTER 15 FUZE



NORTHROP GRUMMAN
EUROFIGHTER GYRO



AERONAUTICA MILITARE
FIRST AID CASE



ENVIRONMENTAL
CONTROL MANAGEMENT UNIT



LEONARDO
PZH 2000 TOOLS



LEONARDO
A184 TORPEDO



LEONARDO
BSA TORPEDO MMI



TERNA
BASE VIBRATION ISOLATION FOR
HIGH VOLTAGE SWITCH



ELT - ALUMINIUM
RACKS STD 19"

CUSTOM PRODUCTS

- Custom Racks and Containers
- Electronics Equipment
- Avionics Mounting Trays
- Handling and Transport Tools
- Composite Wood-GRP Container



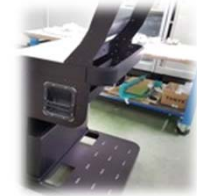
ELT
ARINC 400 MOUNTING TRAY



LEONARDO/IVECO
MINE BLAST SEAT



RFI
RAILWAY SEGNALING



MARTEC/MMI
CONSOLE CDG



LEONARDO
ASTER MISSILE KLM/ELM



MBDA
TROLLEY TEST EQUIPMENT



LEONARDO
AIR COOLED CASES



ELT
AIR CONDITIONED
19" RACK



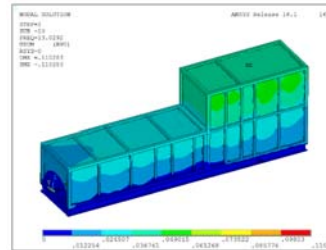
LEONARDO
RUGGED ALSD 85"

ENGINEERING SERVICES

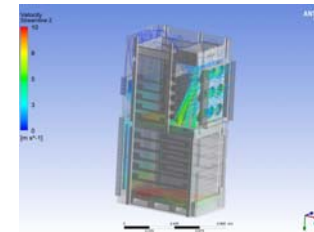
- Structural FEA
- Thermal FEA
- CFD Analyses
- Environmental Tests and Docs
- On site Noise and Vibration measurements



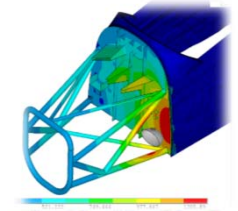
CONSOLE
STRUCTURAL FEA



UTA STRUCTURAL
SEISMIC ANALYSIS



19" RACK
CFD ANALYSES



VLA
THERMAL FEA



CSSN
MEDIUM WEIGHT
SHOCK MACHINE



VIBRATION & SHOCK



VIBRATION & SHOCK



VARIABLE SOLAR RADATION
TO MEET MIL STD 810



CLIMATIC
CHAMBERS

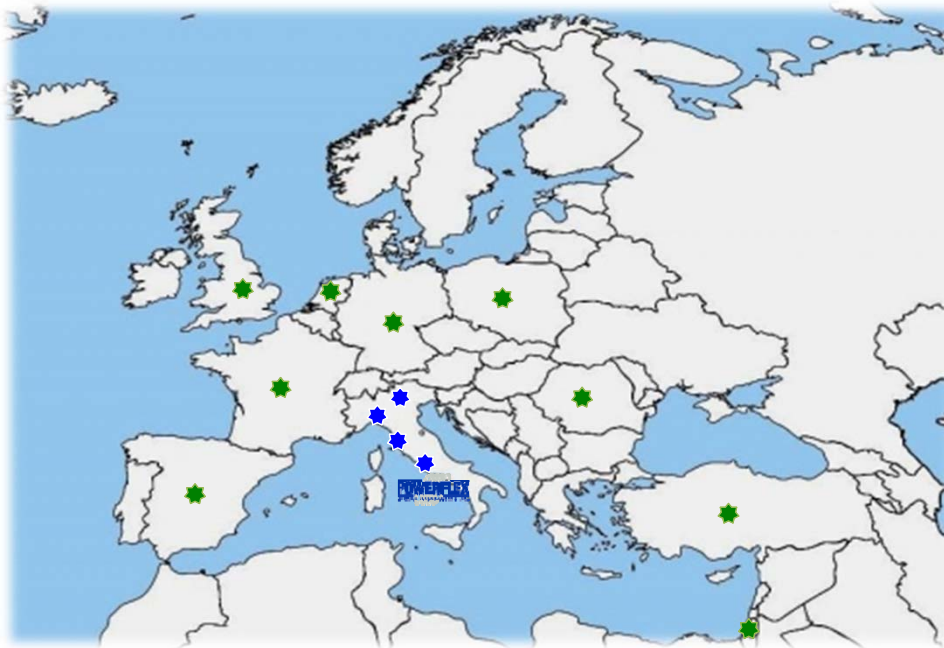
TEST FACILITIES

- Climatic Chamber Hygros 250
- Climatic Chamber TY 1000 C/D, Altitude test
- Climatic Chamber Challenge 1200
- Climatic Chamber 9m³ with Variable Solar Radiation
- Climatic Chamber 50m³ with Variable Solar Radiation
- 20 Channels Agilent Digital Multi metre 24 BIT
- DL Shaker 6kN, with slip table 40x40cm
- LDS V824 Shaker 20kN
- LDS V825 Shaker 26kN, with slip table 60x60cm
- LDS V854 Shaker 40kN, with slip table 90x90cm
- LDS V964 Shaker 90kN, with slip table 150x150cm
- 40 PCB Tri-Axial Accelerometers
- LMS SCADAS III 32 Channels Data Acquisition System and Controller
- LMS SCADAS III 8 Channels Data Acquisition System and Controller
- PUMA 8 Channels Data Acquisition System and Controller
- LMS SCADAS Mobile 20 Channels Mobile Data Acquisition System
- Vibration Research VR 8500 4 Channels Data Acquisition System and Controller
- Larson & Davis LxT 831. Class 1 Integrator Sound Level Meter



METROLOGY

- 10T Hydraulic Press
- 200kg, 1T, 3T Compression-Tension load cells
- Linear Displacement Transducers 250mm
- 8 Channels PCI Data Acquisition 16 BIT



★
ITALIAN
REPRESENTATIVES

★
DEALERS &
INTERNATIONAL
REPRESENTATIVES
France
Germany
Israel
South Korea
Nederland
Poland
Romania
Singapore
Spain
Turkey
UK
USA

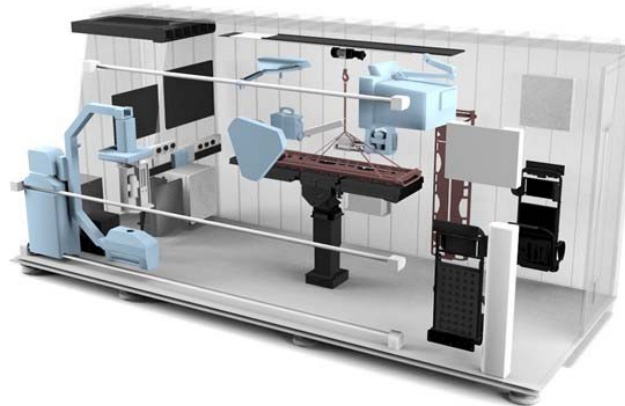
AMOR (ADVANCED MOBILE OPERATING ROOM)

- AMOR** è un Progetto finanziato dal Ministero della Difesa, nell'ambito del Piano Nazionale di Ricerca Militare, per lo sviluppo di un **Advanced Mobile Operating Room**.
- OBIETTIVO:** Effettuare interventi chirurgici di emergenza per il successivo trasferimento sicuro del ferito presso il più vicino presidio ospedaliero.
- AMBITO FORNITURA PWF:** Verifica strutturale del Modulo, progetto del sistema di isolamento del Tavolo Operatorio, dimensionamento del sistema di isolamento del sedile, realizzazione del dimostratore da sottoporre a test vibrazionale di validazione.

AMOR integrato in veicolo tattico



AMOR



AMOR integrato in mezzo da trasporto

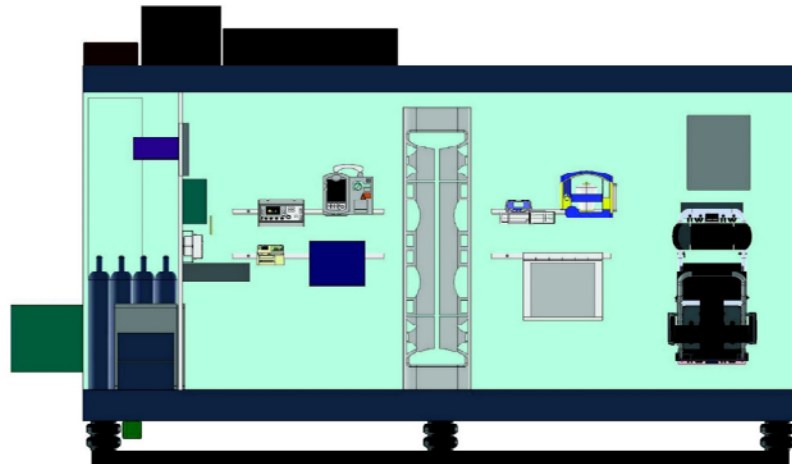


AMOR (ADVANCED MOBILE OPERATING ROOM)

Modulo progettato per poter effettuare un intervento chirurgico completo..

Dimensioni: 2.2m x 4.5m x 2m (H), peso 3T.

E' ancorato al pianale del veicolo attraverso isolatori pneumatici.



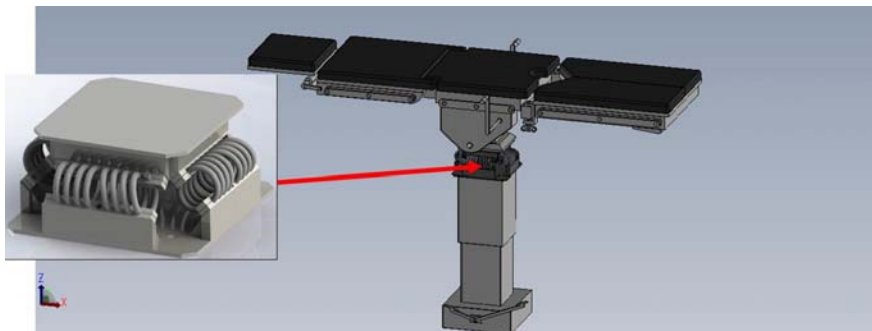
La sala ha una capacità massima di tre operatori.

Durante il trasporto due operatori si trovano nella sala chirurgica ed il terzo affianco al guidatore.

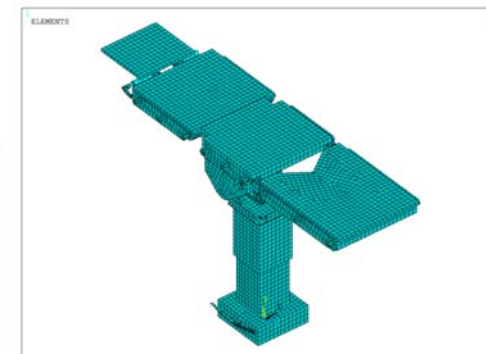
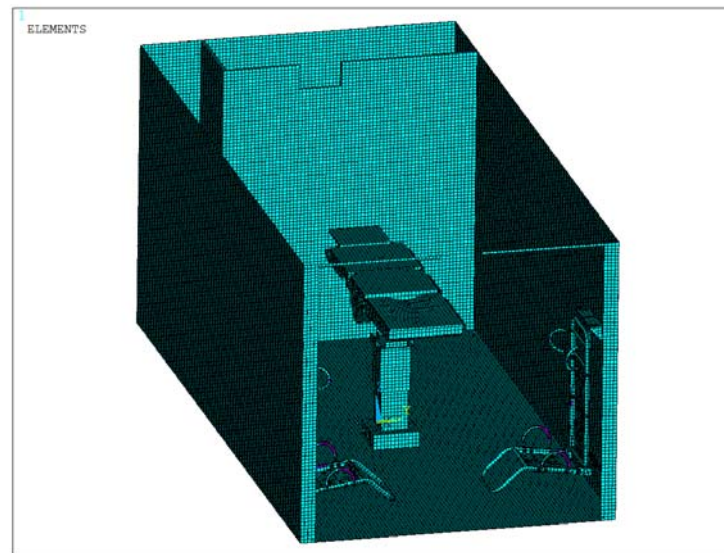


AMOR (ADVANCED MOBILE OPERATING ROOM)

Modello CAD di Tavolo Operatorio e Sedile.

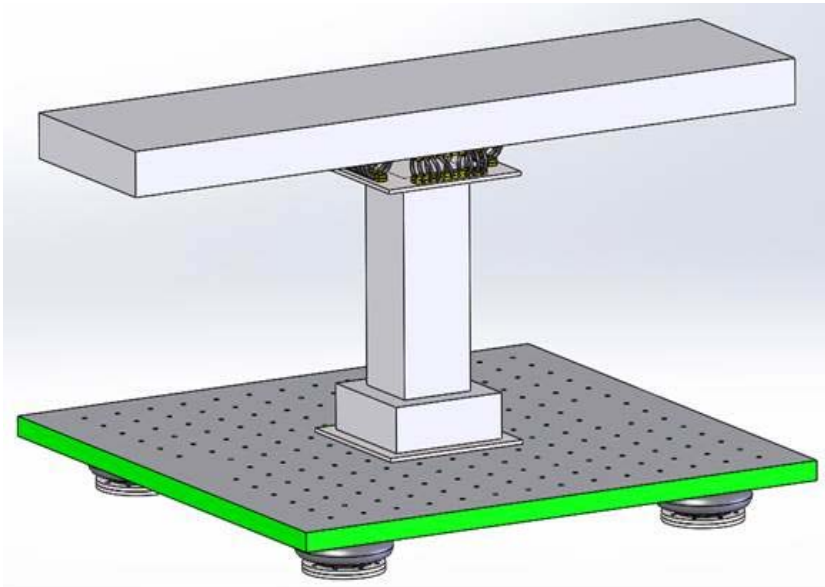


Modello FE di Modulo, Tavolo Operatorio e Sedile.



AMOR (ADVANCED MOBILE OPERATING ROOM)

Modello CAD Dimostratore (Dinamica strutturale simile al modulo reale).

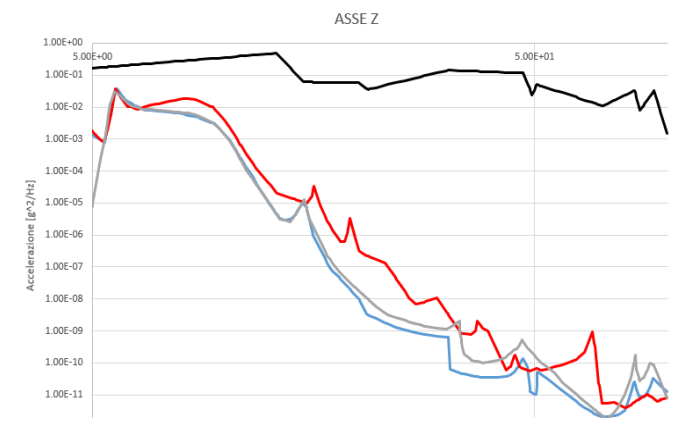
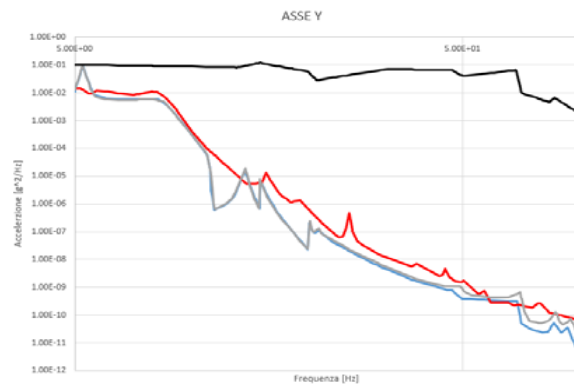
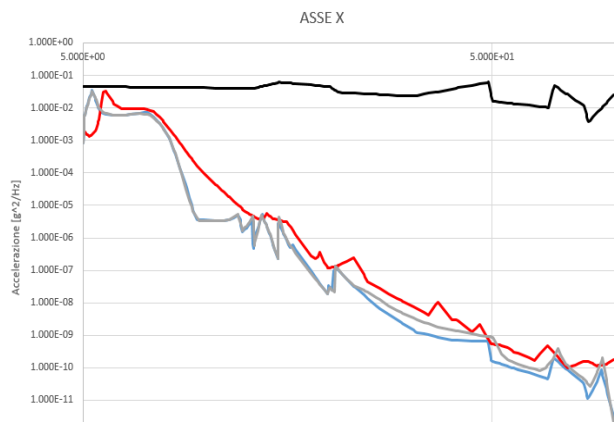


Dimostratore con simulacro tavolo operatorio sottoposto a test vibrazionale.



AMOR (ADVANCED MOBILE OPERATING ROOM)

Risposta dinamica dei sistemi di isolamento meccanico del dimostratore alle vibrazioni random MIL STD 810



AMOR (ADVANCED MOBILE OPERATING ROOM)

07.05.19, Pratica di Mare: Impiego Innovativo delle Forze Armate al Servizio del Paese



SEDILE ANTIMINA PER VEICOLO LINCE, COMMISSIONATO DAL CONSORZIO IVECO-LEONARDO

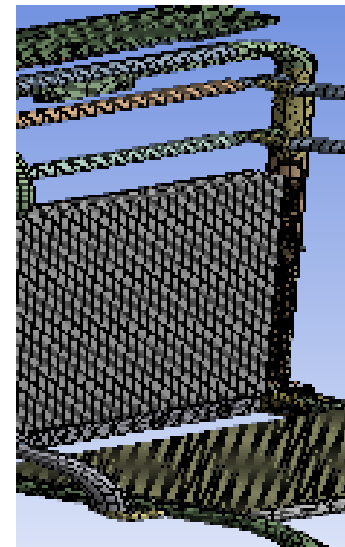
Lince colpito da mina nel Febbraio 2011 in Afghanistan



Modello CAD



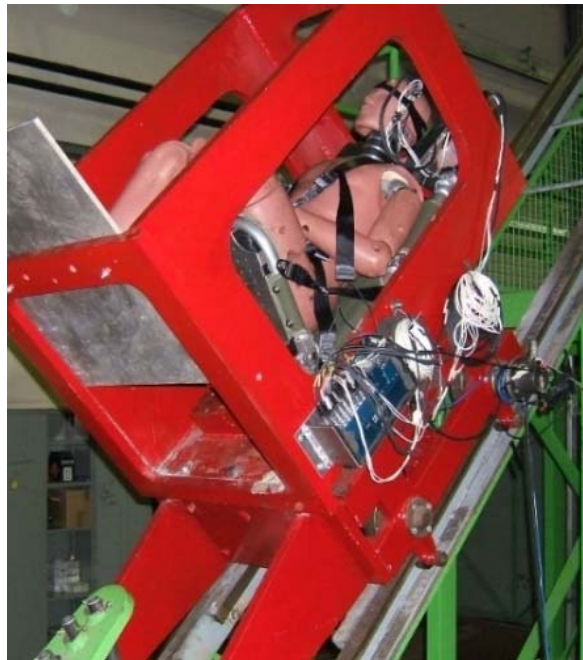
Modello FE



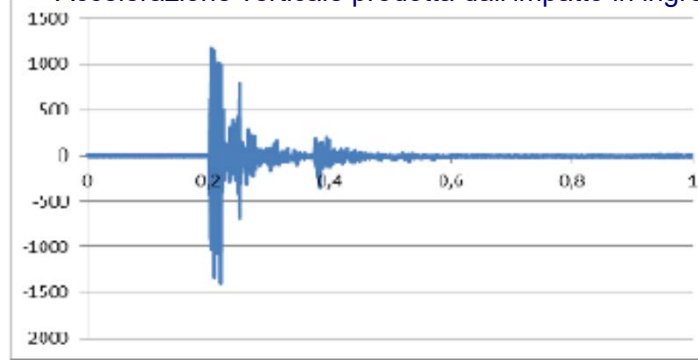
S/N 001 installato nel veicolo



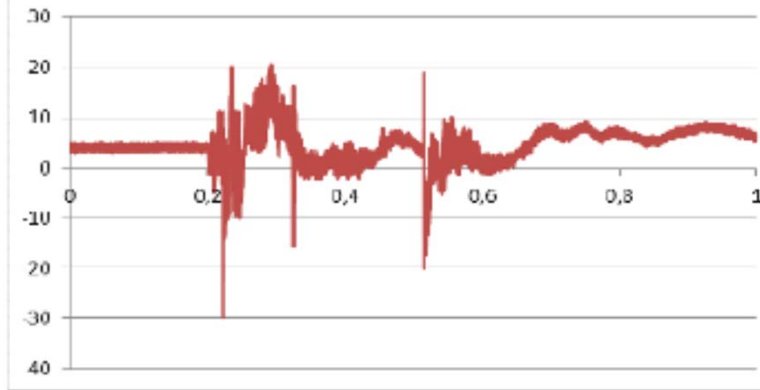
SEDILE ANTIMINA PER VEICOLO LINCE, TESTS DI OMOLOGAZIONE C/O LEONARDO LA SPEZIA



Accelerazione verticale prodotta dall'impatto in ingresso agli ammortizzatori a cavo



Accelerazione verticale misurata da un accelerometro del ATD HYBRID III 95th, 100kg



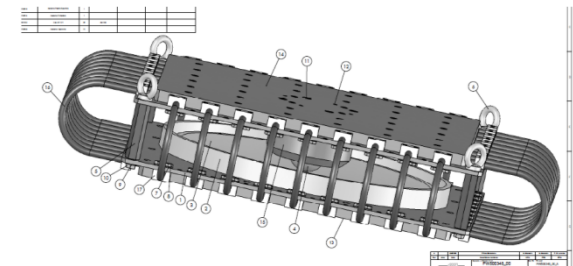
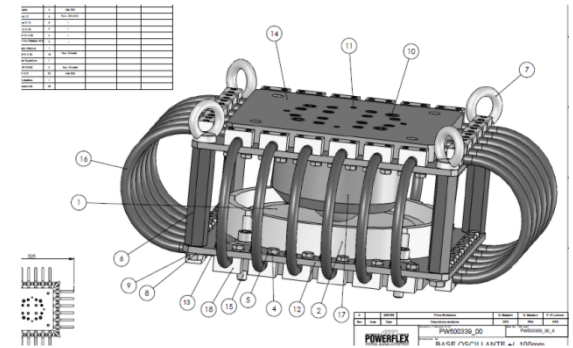
ISOLAMENTO SISMICO QUADRO ELETTRICO PER U.O. MERCATO USA, SECONDO IEEE 693:2005

Dimensioni di ingombro sulla tavola vibrante:

Lunghezza L = 1961 mm
 Profondità H_L = 1500 mm
 Altezza totale H = 2775 mm
 Peso totale W = 27 KN

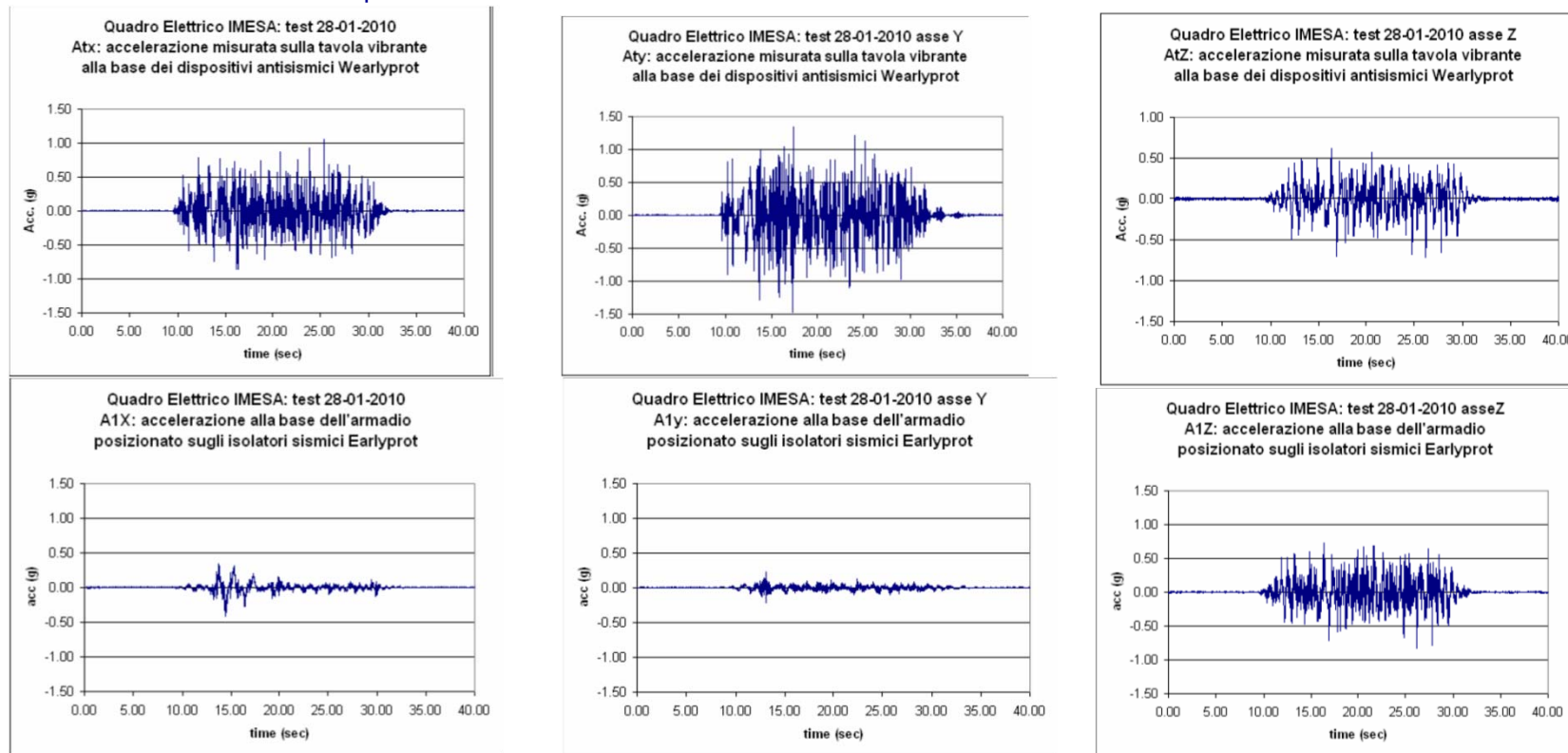


Isolatori sismici a pendolo con trefoli di acciaio
 Portate individuali di 400kg, 700kg e 1000kg
 Frequenze ≤ 2Hz

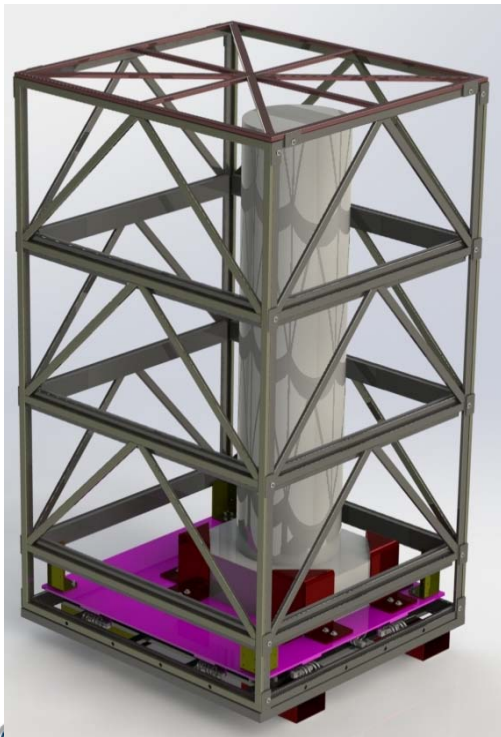


ISOLAMENTO SISMICO QUADRO ELETTRICO PER U.O. MERCATO USA, SECONDO IEEE 693:2005

Risposta dinamica degli isolatori sismici alle sollecitazioni di progetto, misurate presso laboratorio sismico di ENEA Casaccia (RM).
Grado di isolamento nel piano $\geq 60\%$.



ATTREZZATURA PER TRASPORTO AUGUSTO DI PRIMA PORTA DA MUSEI VATICANI A SCUDERIE DEL QUIRINALE, COMMISSIONATA DA ENEA



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