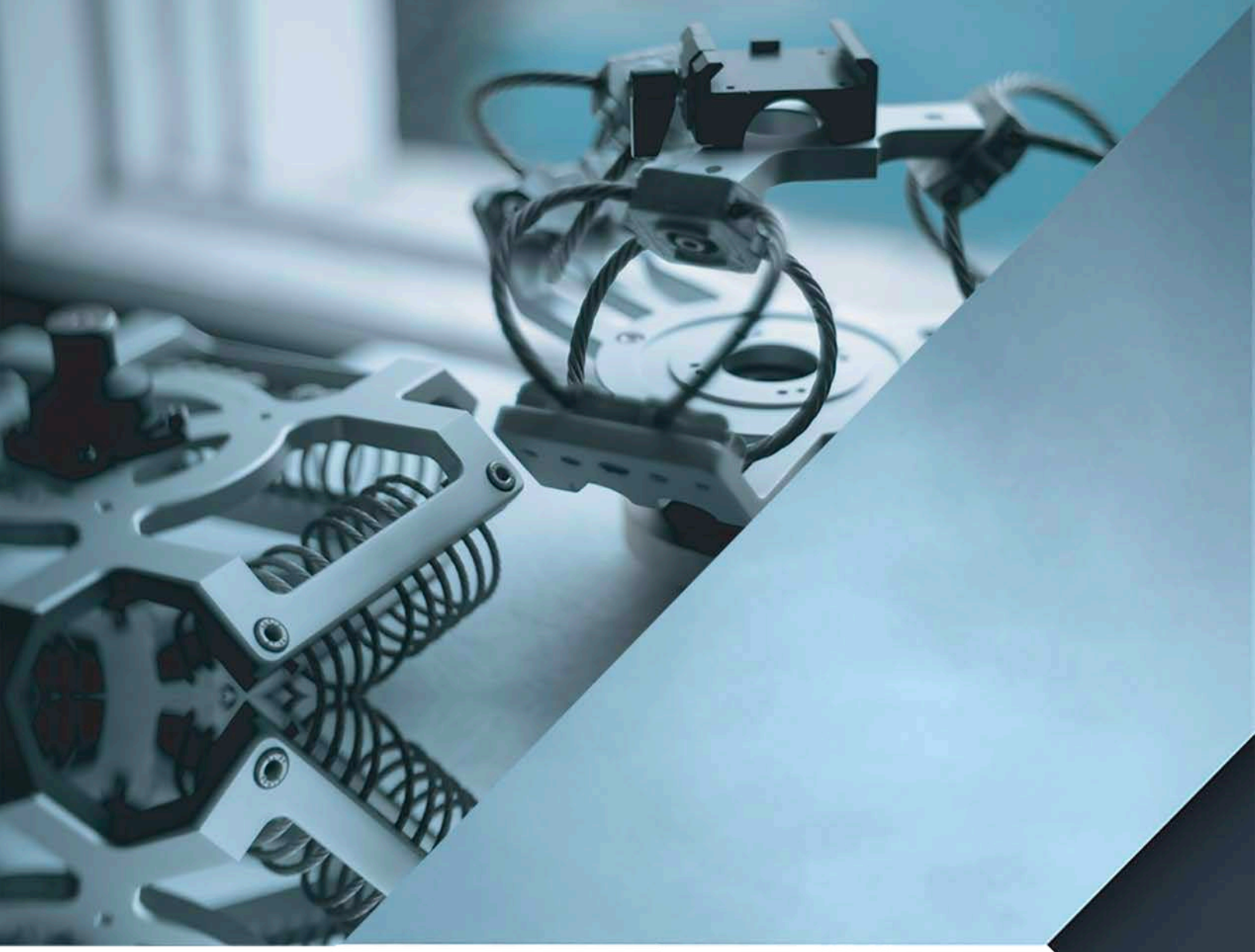


VIBRO DYNAMICS
a Socitec company

EXPERTISE, INNOVATION AND SOLUTIONS
SHOCK AND VIBRATION

www.vibrodynamics.com

FROM ANALYSIS TO DEVELOPMENT
FROM DESIGN TO VALIDATION

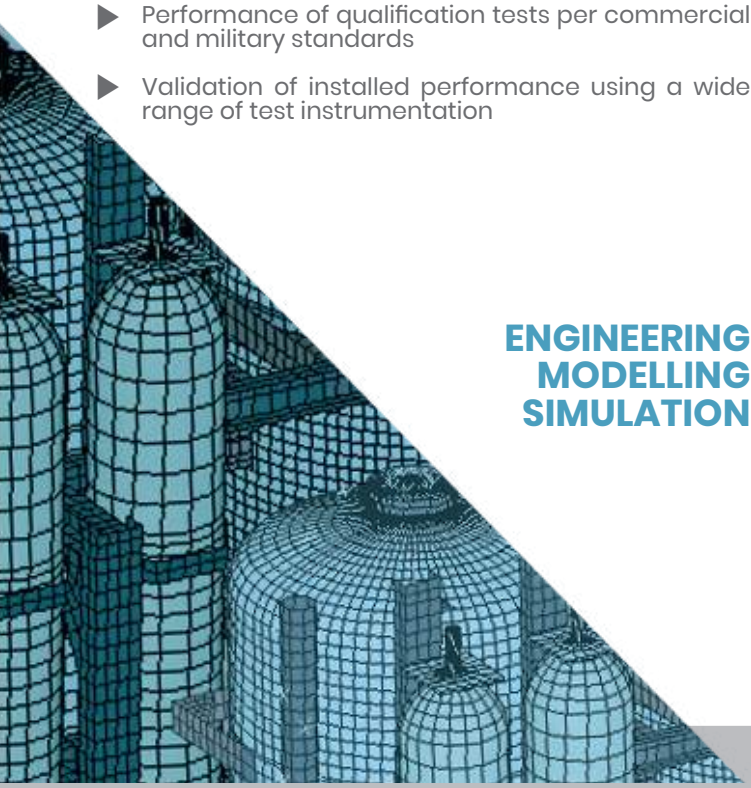
Solving a shock and vibration problem requires an analysis of the behavior of the entire dynamic system, as well as an understanding of all inputs and reactions of the system to reach the optimal solution.

A GLOBAL
APPROACH

This global approach, from the beginning of the Socitec Group, has developed into an advanced process using modern design tools on both a technical level (numerical simulations validated experimentally) and quality level (ISO 9001 procedures).

The process is carried out in the following stages :

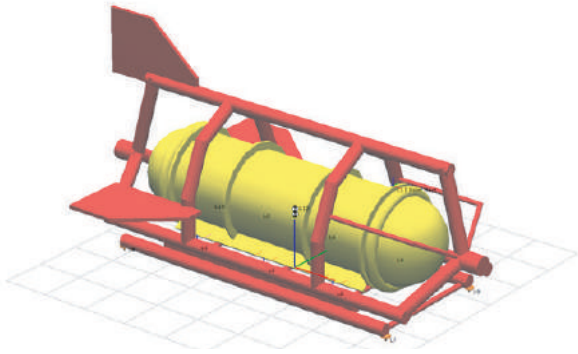
- Extensive analysis and simulation of the structural behavior
- Establishment of the shock and vibration requirements specifications
- Completion of a feasibility study
- Selection of the most suitable technology, mounting attitude, and a standard or custom model
- Final simulation of the proposed solution
- Verification of simulations with prototype testing
- Performance of qualification tests per commercial and military standards
- Validation of installed performance using a wide range of test instrumentation

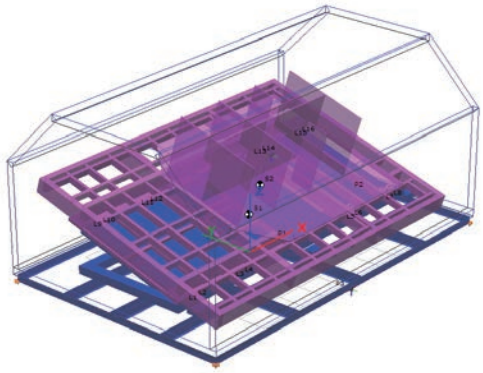


ENGINEERING
MODELLING
SIMULATION

KNOW-HOW
MAKES ALL THE DIFFERENCE

- **SOLIDWORKS :** Mechanical design (custom products, equipment racks, elastic flooring, etc.)
- **ANSYS :** Static and dynamic finite element analysis of structures (Containers, cabinets, shelters, etc.)
- **SYMOS :** Numerical simulation of non-linear mechanical systems submitted to shock and vibration inputs.
- **TESTS :** Drop/Shock tests, vibration tests, experimental modal analysis, fatigue testing, etc.





RELIABLE AND INNOVATIVE **SOLUTIONS**

50 years of control at the highest level

EXPERTISE **EXPERIENCE**

By virtue of the expertise and experience of our team of engineers, plus the compiled database of thousands of successful cases, SOCITEC proposes and delivers the best suited product for the job, meeting the environmental requirements. (Shock, Vibration, Noise).

MULTIPLES **SOLUTIONS**

- Heavy-duty steel, stainless steel, and enhanced damping cable options
- Treated aluminum alloy, passivated stainless steel, and non-magnetic retainer bar options
- Optimized shape, number, and size of cable loops Elastomeric solutions with various compounds and geometry
- Hybrid solutions incorporating cable and elastomers, or even cable and coil steel springs

  Design and delivery of interfacing for integration in assemblies such as racks, cabinets, etc.

ENERGY
SPACE
TRANSPORT
NUCLEAR
DEFENSE
RAILWAYS
SHIPBUILDING
OIL RESEARCH
AEROSPACE

APPLICATIONS **EXAMPLES**

- Sensitive equipment such as electronics onboard ships and vehicles, as well as protection of mobile shelters from explosive blasts
- Seismic protection of a storage pool of nuclear fuel rods
- Protection of mobile ground support equipment for transporting and handling jet engines, satellites, and spacecraft
- Shipping containers for missiles and torpedoes
- Generator, pump, and compressor isolation

  Chimneys using tuned mass damper to avoid wind-induced resonance
- Air conditioning unit isolation in the international space station
- Large electric transformers structural vibration and noise isolation
- Seismic protection of surge arresters, circuit breakers, and other substation equipment

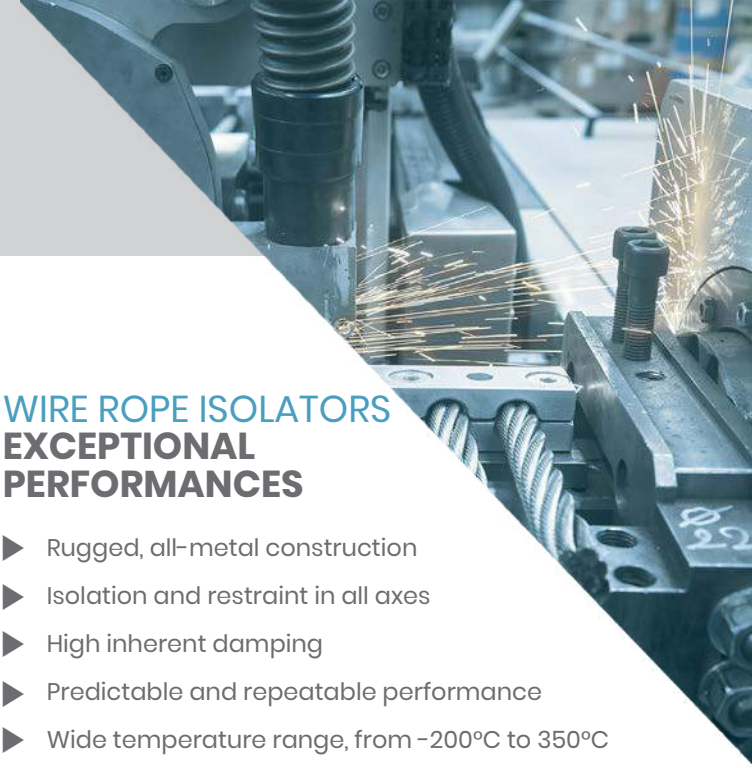
FROM EXPERIENCE **TO CONFIDENCE**

OUR CUSTOMERS

Over fifty years of experience in protection against shock and vibration, with solutions in multiple fields proven by the world's largest contractors.

ABB
AIRBUS
ALSTOM
AREVA
ARIANEGROUP
ASELSAN
ASML
BHARAT
BLOHM & VOSS
BOMBARDIER
CEGELEC
CGG
DAHER
DASSAULT
DENEL
EDF
ELBIT SYSTEMS
ESTERLINE
FINCANTIERI
GENERAL ELECTRIC
HITACHI RAIL
HYUNDAI
IAI
KNORR-BREMSE
LOCKHEED MARTIN
MAN
MBDA
MOTOROLA
MTU
NAVAL GROUP
NAVANTIA
NEXTER
PHILIPS
RAFAEL
RAYTHEON
RHEINMETALL
ROLLS-ROYCE
SAAB
SAFRAN
SCHNEIDER ELECTRIC
SIEMENS
SINGAPORE TECHNOLOGIES
SNCF
TECHNIP
THALES
WARTSILA
ZODIAC AEROSPACE

EXPERTISE AND AUTHORITY
WIRE ROPE AND ELASTOMER



A PRODUCT LINE
FROM STANDARD TO CUSTOM

The wire rope isolator spring function is created by flexing of the cable that is wound and clamped into a loop. The damping function is the result of friction between the cable wires as the cable flexes.
The wire rope isolator is preferred for combined isolation against shock and vibration, as well as exposure to extreme temperatures or harsh chemicals. Elastomeric isolators are preferred whenever vibration and noise are the primary concern.
SOCITEC offers a wide range of isolators utilizing wire rope and elastomeric compounds, which are tested and validated in our laboratory, meeting international standards.

WIRE ROPE ISOLATORS
EXCEPTIONAL PERFORMANCES

- Rugged, all-metal construction
- Isolation and restraint in all axes
- High inherent damping
- Predictable and repeatable performance
- Wide temperature range, from -200°C to 350°C
- Long product lifetime with no maintenance
- No creeping or aging
- Excellent resistance to chemicals, seawater, ozone, radioactivity, and UV light
- Unique mounting versatility, plus fast and inexpensive prototyping
- Socitec has the widest range in the industry, from 0.04" to 2" diameter cable

CABLE OR ELASTOMER
CHOOSING THE OPTIMUM SOLUTION

SOCITEC is in the position of selecting the best of these complementary technologies for any application by using a virtually unlimited combination of materials, arrangements, and interfacing.

STANDARDS
CERTIFICATION

ISO 9001
BUREAU VERITAS
Certification

GAM EG13A
SEFT001
AIR7306
MIL-E-5400
MIL-C-172
MIL-STD-810
GAM EG13C
FINABEL2C
GAM EMBT4
MIL-S-167
MIL-S-901
STANAG042
BV043.73
BV044
GAM EMB1
DEF STAN 07-55 IEC571
MIL-STD-810VG95332
IT25-21/96-31/15-86

OTHER PRODUCTS
MANUFACTURED BY VIBRODYNAMICS

- Elastomeric Isolators
- Wedge-Style Mounts
- Coil Spring Isolators

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