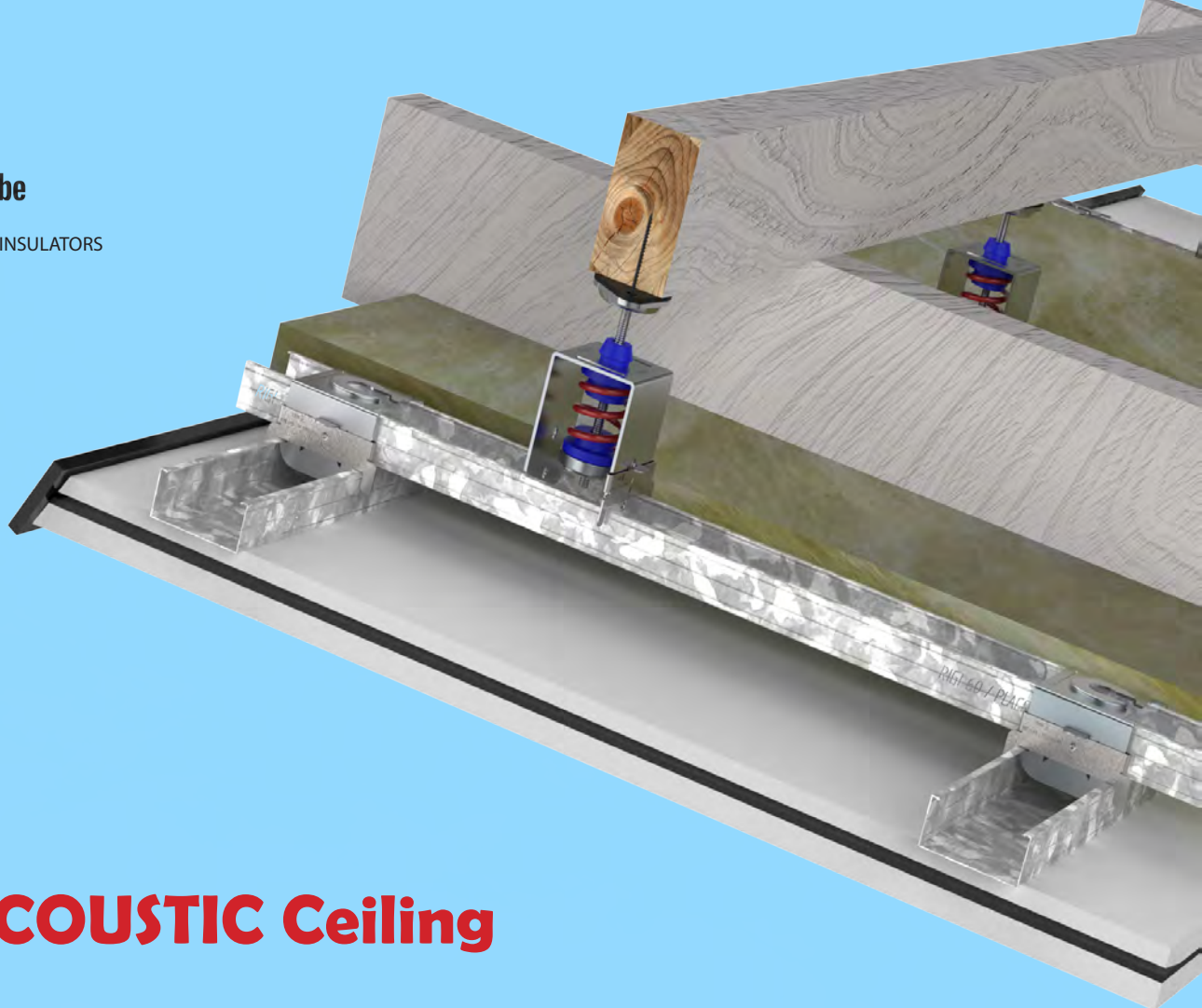




*SENOR ACOUSTIC INSULATORS



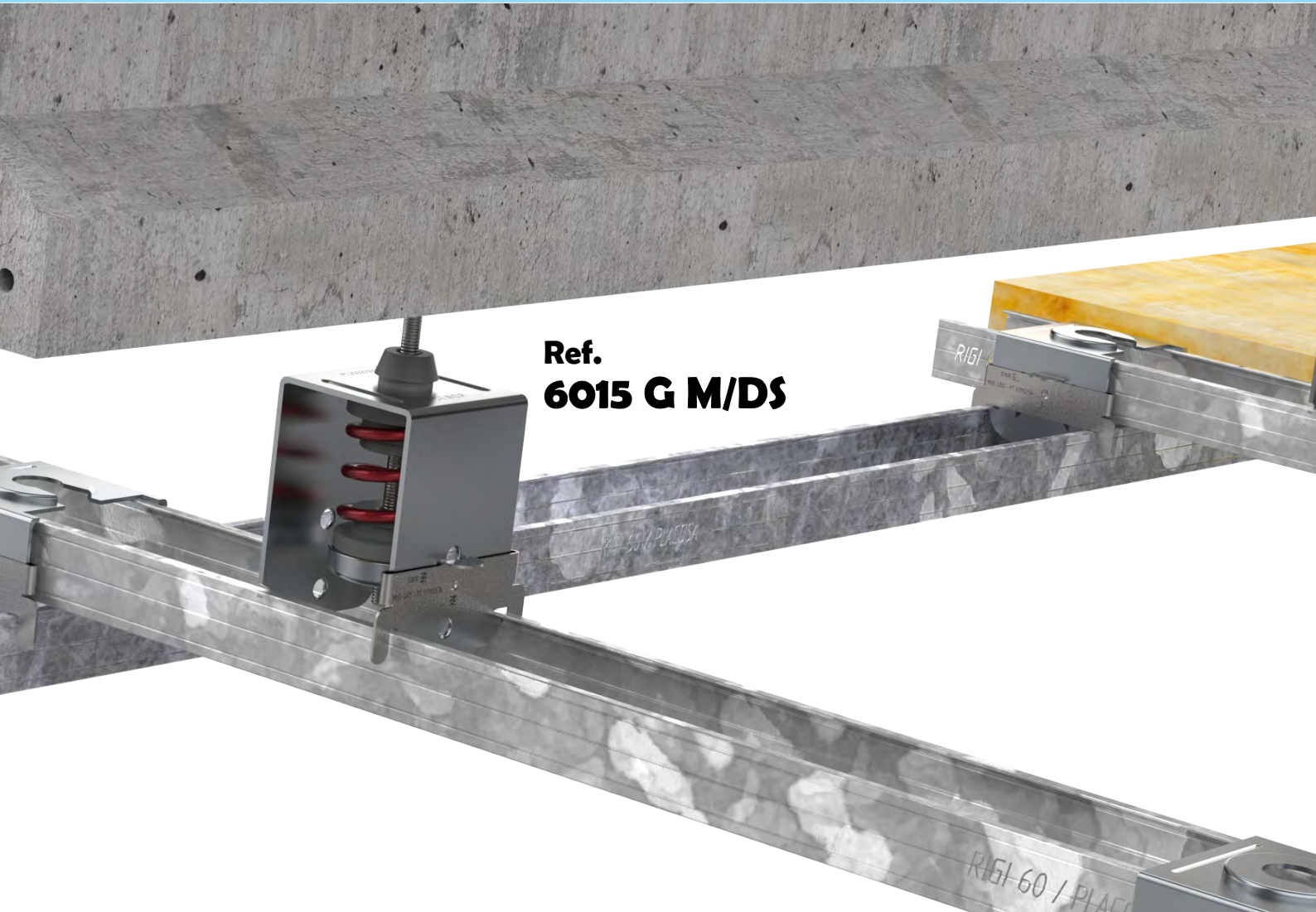
ACOUSTIC Ceiling

Mod.60M/DS - HYBRID



SENOR

MANUFACTURER OF ANTI-VIBRATION SYSTEMS.

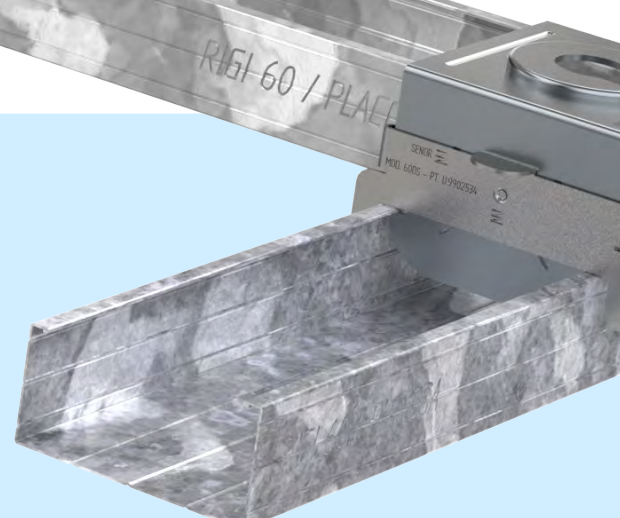


Ref.
6015 G M/DS

ACOUSTIC Ceiling.

Mod. 60M/DS HYBRID

From our very beginnings, we wanted to launch a shock absorber different from the rest by adding **Security**, **Innovation** y **Simplicity** to this product. After several years of research and development, we have reinvented this item from top to bottom. Now **SEÑOR** is able to offer a technological upgrade combining upgrade incorporating to the hybrid system an improved, renewed and original polymer "TC / GPN". Resulting in a new improved polymer that enhances its internal mechanical properties and provides a >10% increase in the field of acoustic isolation.



"Patented"
P.T. 200201413



Introduction **60M/DS HYBRID.**

A different damper with constant **EVOLUTION** for the suspension of acoustic false ceilings.

Latest generation Hybrid system, manufactured with a single metal spring according to **DIN 2095 -UNE EN 10270**, with EPOXI treatment colored red.

Combined at its ends with a renewed polymer "TC / GPN", provides a greater shock-absorbing performance.

The steel coil provides a high degree of insulation to vibrations in the low / medium frequency range. The renewed polymers at their ends absorb more sound and provide a high degree of acoustic insulation to vibrations in the mid / high frequency range. In addition to this, they provide an improvement in the settlement of the spring.

Ref. 6050 A M/DS

The combination of these two elements makes it possible to launch the best acoustic isolator of the moment, the only one that is able to reduce the vibration across the entire exciter **frequency range**.



Ref. 6025 V M/DS



Ref.
6075 R M/DS

MAIN Features.

It is a shock absorber that stands out for its simplicity and performance. The direct fixation to the **60 mm** ceiling profiles (Type **TC-60 PLADUR**, **RIGI-60 PLACO** and **MAESTRA 6027 KNAUF** or similar) makes it unique. This type of acoustic isolator is designed to eradicate and attenuate transmission of vibrations produced by equipment with rotating and repetitive shocks above **6 Hz**. In addition, it incorporates the most advanced blocking device of the moment (**DS**).

First acoustic shock absorber in the market rated **fire-resistance EI120** (**guaranteed to be fire-resistant for 120 minutes**).





"Patented"
P.T. 200201413



FIRE classification.

Report number: **080645-001-2 M1**. This ranking report defines the fire resistance rating assigned to a division non-bearing referenced as «Acoustic ceiling (**SENOR + CHOVA**) **EI120**» in accordance with the procedures established in [C].

[A] EN 1363-1:2012 "Fire resistance tests - Part 1: General Requirements"

[B] EN 1364-2:2018 "Fire resistance for tests for non-loadbearing elements - Part 2: Ceilings"

[C] EN 13501-2:2016 "Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance



DYNAMIC load capacity.

In the acoustic sector, there is a very wide diversity of construction solutions, where the distribution of the weight per fixing unit, will depend on different variables, **such as: the mass m^2 , the inter-axis distance of the roof profiles, the arrangement of the shock absorbers on the framing,** etc... The **60M/DS** range has the advantage of combining **4 colors** to differentiate the load per unit (kg): **GRAY, GREEN, BLUE** y **RED**. The **GRAY** color will indicate the one with the lowest weight and the **RED** color, the one with the highest load. This way the most effective shock absorber can be chosen depending on the system.

They are hybrid shock absorbers designed to work between **3Kg** up to **120Kg**. Distinguishing the different charge ranges by colors.



**Ref.
6015 G M/DS**



**Ref.
6025 V M/DS**



**Ref.
6050 A M/DS**



**Ref.
6075 R M/DS**



"Patented"
P.T. 200201413

Ref. 6015 G M/DS

Gray HYBRID system: "TC-3/GPN"

loads between **3-20 Kg.**

Resonance frequency **3 a 7Hz.**



Ref. 6025 V M/DS

Green HYBRID system: "TC-4/GPN"

loads between **15-45 Kg.**

Resonance frequency **3 a 7Hz.**

Ref. 6075 R M/DS

Red HYBRID system: "TC-6/EXN"

loads between **60-120 Kg.**

Resonance frequency **3 a 7Hz.**



Ref. 6050 A M/DS

Blue HYBRID System: "TC-5/EXN"

loads between **30-75 Kg.**

Resonance frequency **3 a 7Hz.**



LABORATORY tests. UNE-EN ISO 10846-1:2009

Acoustics and vibrations. Laboratory measurement of transfer properties vibroacoustics of elastic elements.

Ref.

6015 G M/DS

Gray HYBRID system: "TC-3/GPN"

loads between **3-20 Kg.**

Resonance frequency 3 a 7Hz.



HELICAL SPRING dimensions

(d) Wire diameter: **4,00 mm**

Active coils: **4**

(Do) Outer Diameter: **34,40 mm**

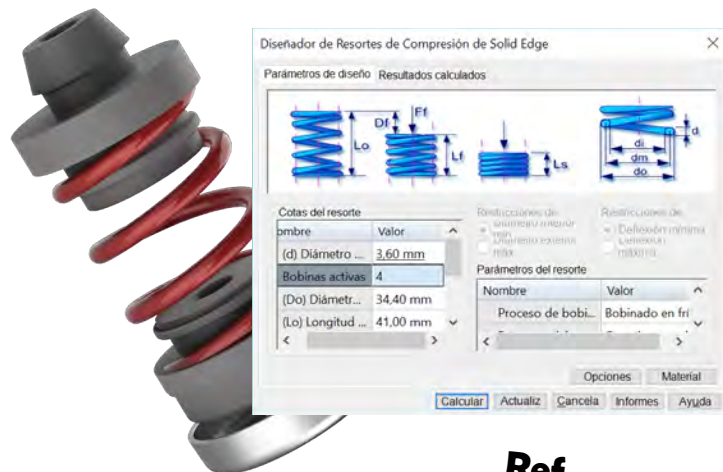
(Lo) Unloaded length: **41,00 mm**

(Fp) Preload: **10,00 N**

(Ff) Applied load: **200,00 N**

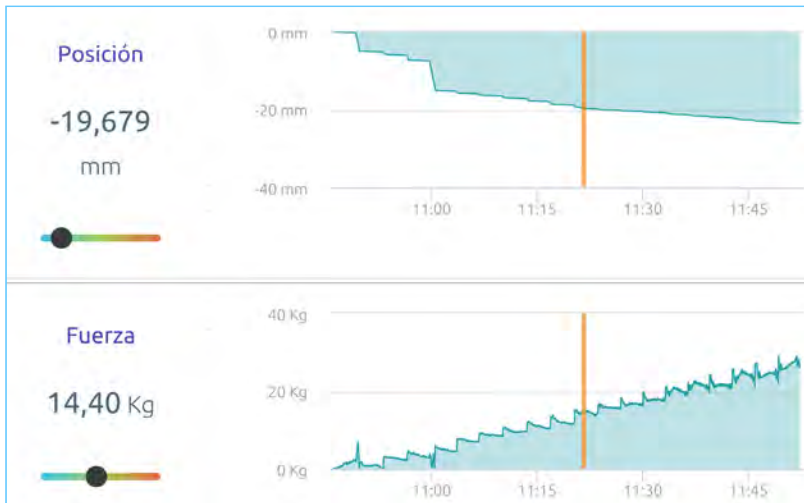
Modulus of rigidity: **17755 N/m**

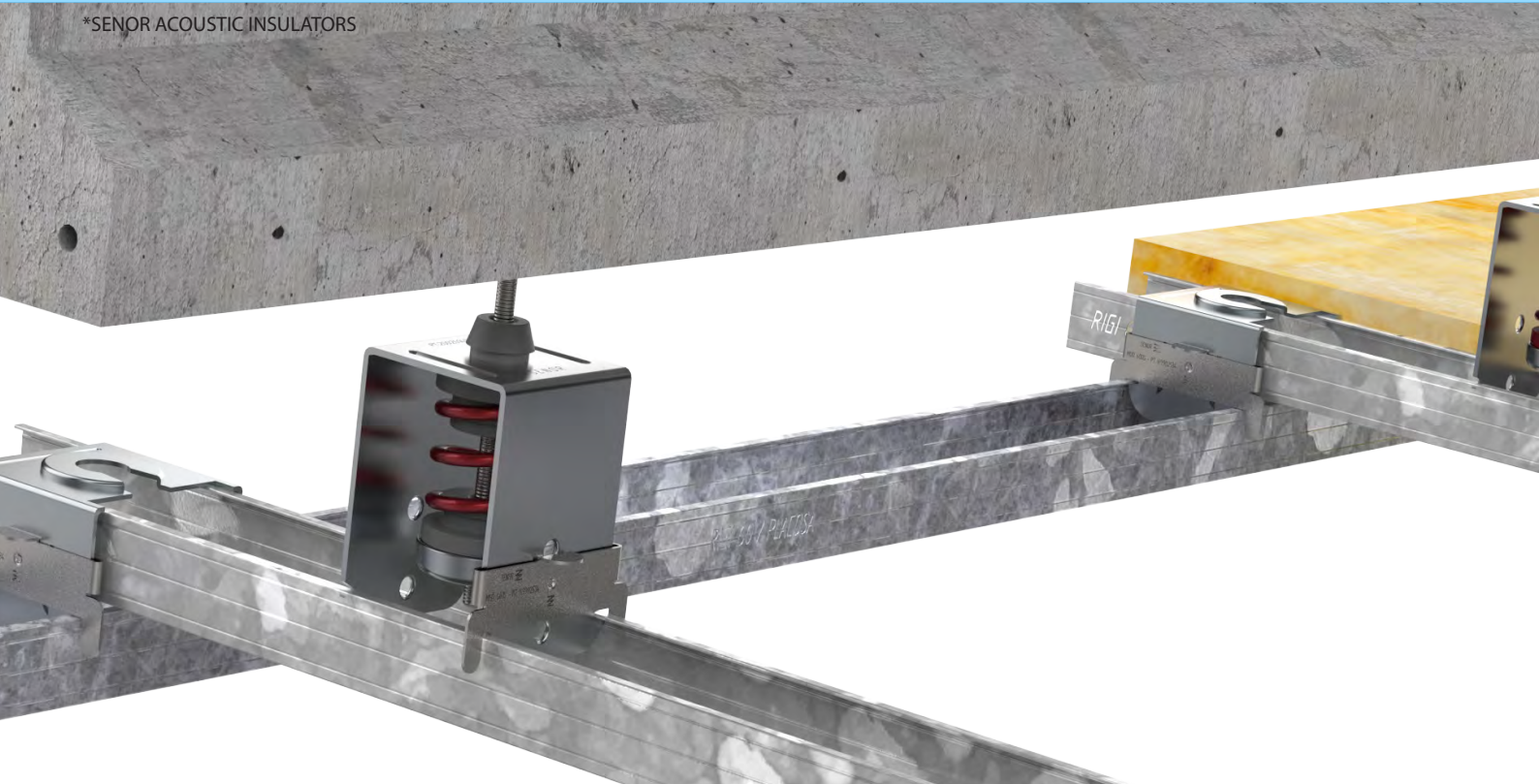
Density: **7800 Kg./m3**




Ref. 6015 G M/DS

Deformation with **APPLIED LOAD.**





 Máquina de ensayo

35:40 ciclo 1,733.353 Kg  

[Volver al inicio...](#)

6015 G/MDS
Componente gris / TC3GPN

Receta
E.LABORATORIO P.TRANSFERENCIA/UNE-EN ISO 10846
realizada en Máquina C

Máquina C
Posición [86,744 mm]
▼ -7,326 mm Ⓞ -19,650 mm ▲ -23,515 mm

Fuerza [1,00 Kg → 30,00 kg]
▼ 3,10 kg Ⓞ 12,90 kg ▲ 23,00 kg

Velocidad [0,030 mm/s]
▼ -0,150 mm/s Ⓞ -0,030 mm/s ▲ -0,010 mm/s

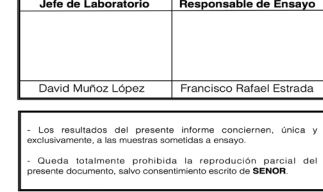
Frecuencia [15,00 Hz → 25,00 Hz]
▼ 15,00 Hz Ⓞ 20,00 Hz ▲ 25,00 Hz

Vibración atenuada [Oscilación de 10,00 mm]
▼ 56,63 % Ⓞ 95,61 % ▲ 98,33 %
▼ mínimo Ⓞ media ▲ máximo

frecuencia natural obtenida [Según deformación mm]
▼ 8,25 Hz Ⓞ 4,01 Hz ▲ 3,20 Hz

Jefe de Laboratorio	Responsable de Ensayo
David Muñoz López	Francisco Rafael Estrada

Los resultados del presente informe conciernen, única y exclusivamente, a las muestras sometidas a ensayo.
Queda totalmente prohibida la reproducción parcial del presente documento, salvo consentimiento escrito de SENOR.

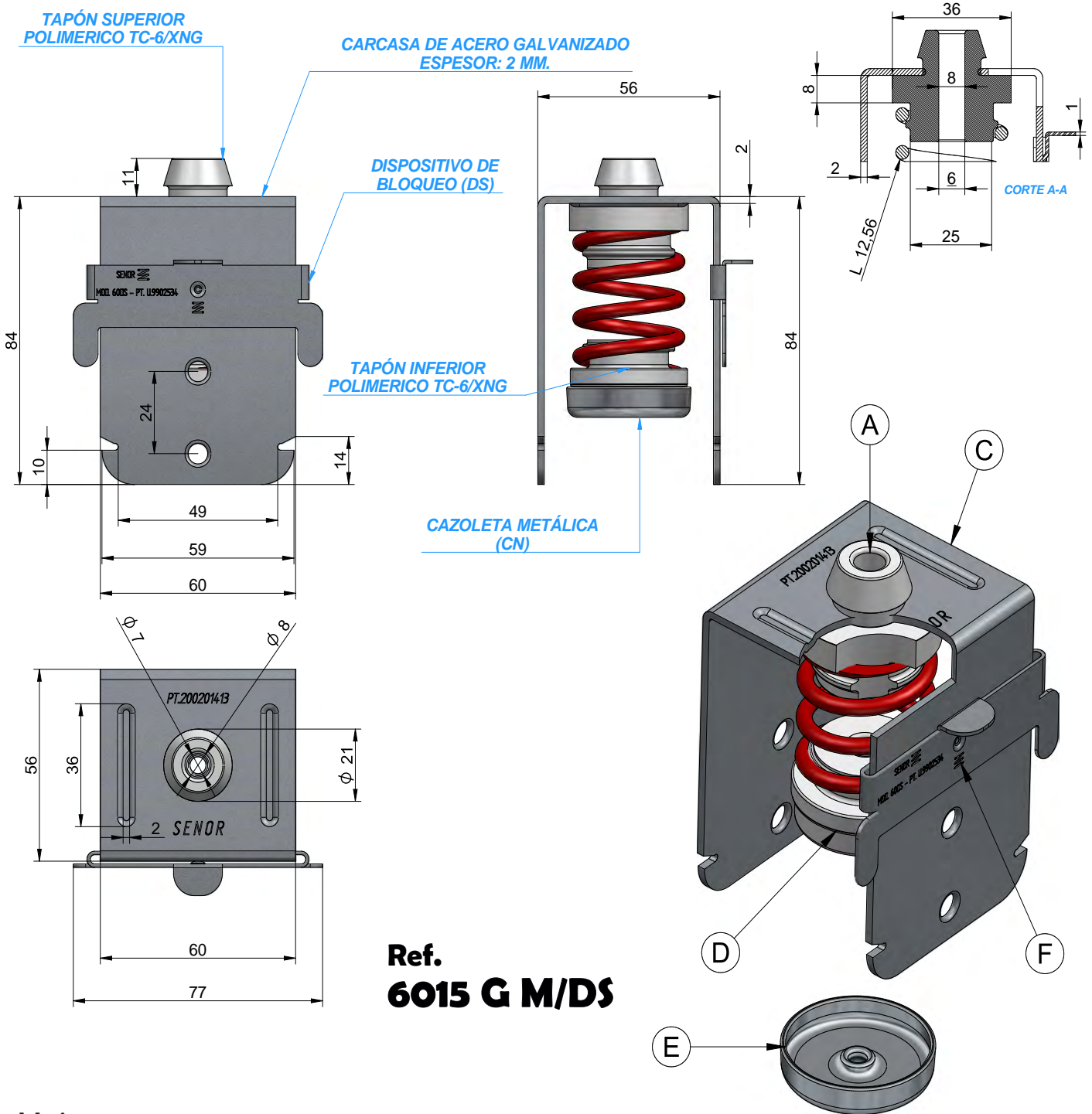


Fuerza 14,40 Kg

Correcto
Frecuencia resultante
3,75 Hz

"Patented"
P.T. 200201413

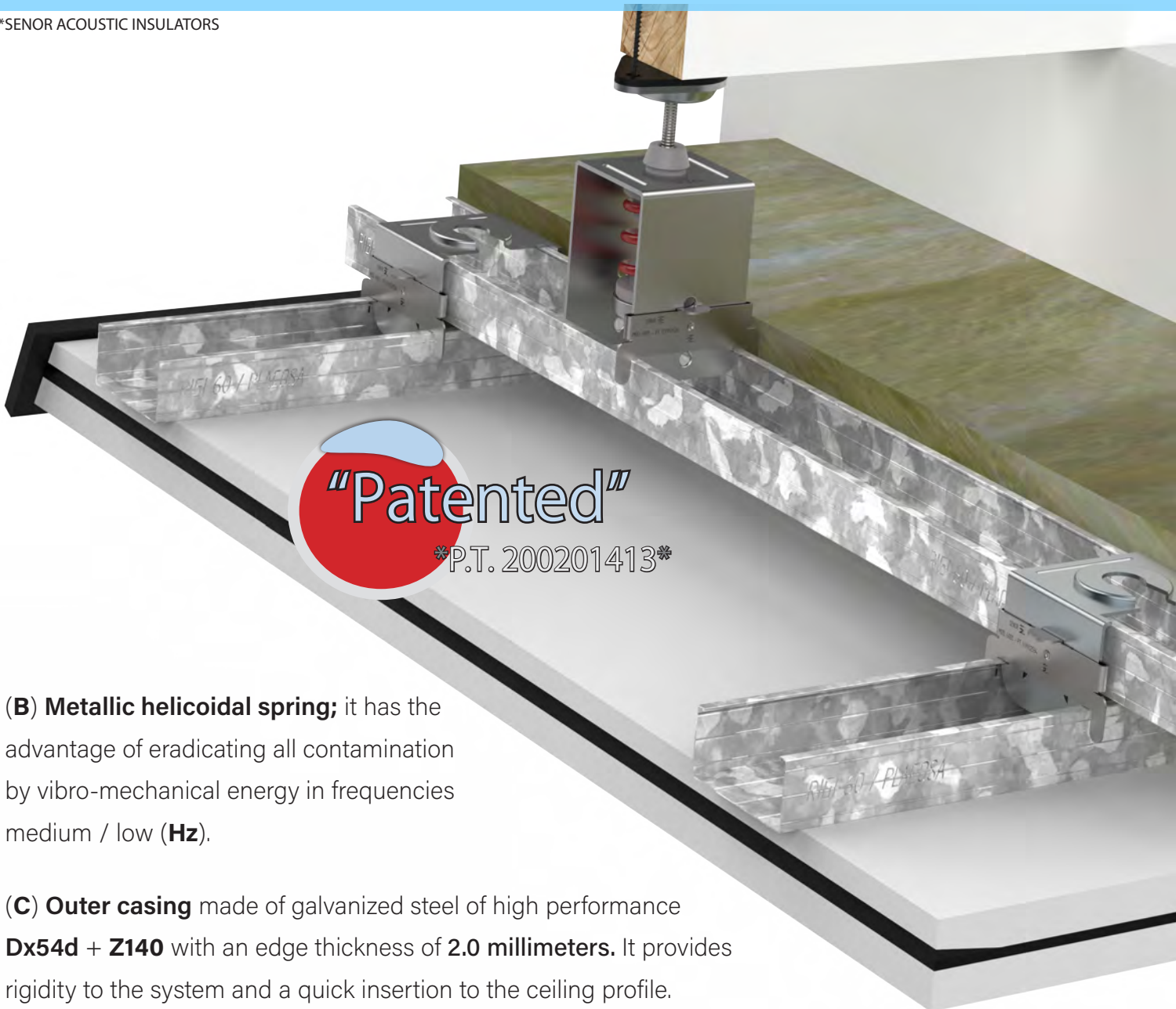
PRODUCT dimensions



Ref.
6015 G M/DS

Main components.

(A) **Top cap** with protruding neck, avoids contact between threaded rod and metallic components. In addition, it provides a perfect seating to the spring and optimal behavior in the range of the **mid/high frequencies (Hz)**.



"Patented"
P.T. 200201413

(B) Metallic helicoidal spring; it has the advantage of eradicating all contamination by vibro-mechanical energy in frequencies medium / low (Hz).

(C) Outer casing made of galvanized steel of high performance **Dx54d + Z140** with an edge thickness of **2.0 millimeters**. It provides rigidity to the system and a quick insertion to the ceiling profile.

(D) Bottom cap, it avoids the contact between the threaded rod and the metal components. In addition, it provides a perfect settlement to the spring and an optimal behavior in the range of medium / high frequencies (Hz).

(E) Small metal bowl, made of high performance galvanized steel **Dx54d + Z140** with a thickness edge of **1.5 millimeters**. It provides the mechanical tensile strength of the system.

BREAK: It breaks the threads of the threaded road above **250Kg** punctual.

(F) Locking device, (DS), made of high performance galvanized steel **Dx54d + Z140** with a thickness edge of **1 millimeter**. **SEFETY:** it breaks above **300Kg** punctual.

LABORATORY tests. UNE-EN ISO 10846-1:2009

Acoustics and vibrations. Laboratory measurement of transfer properties vibroacoustics of elastic elements.

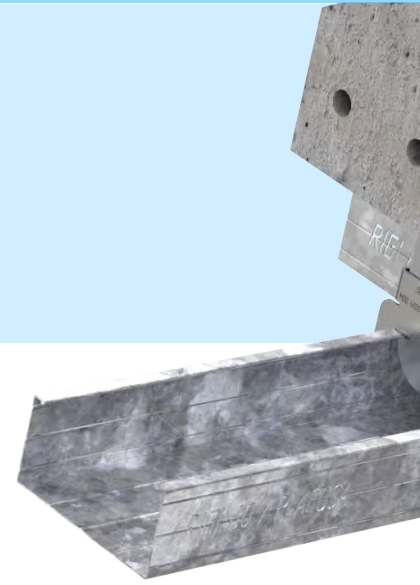
Ref.

6025 V M/DS

Green HYBRID system: "TC-4/GPN"

loads between **15-45 Kg.**

Resonance frequency 3 a 7Hz.



HELICAL SPRING dimensions

(d) Wire diameter: **4,50 mm**

Active coils: **4,5**

(Do) Outer Diameter: **36,00 mm**

(Lo) Unloaded length: **40,50 mm**

(Fp) Preload: **150,00 N**

(Ff) Applied load: **450,00 N**

Modulus of rigidity: **39703 N/m**

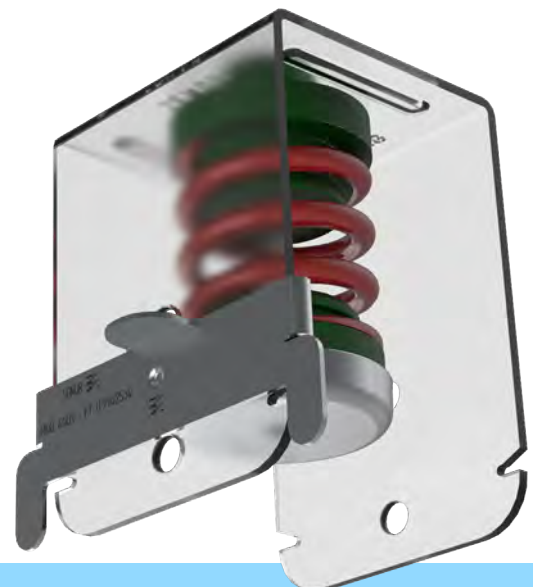
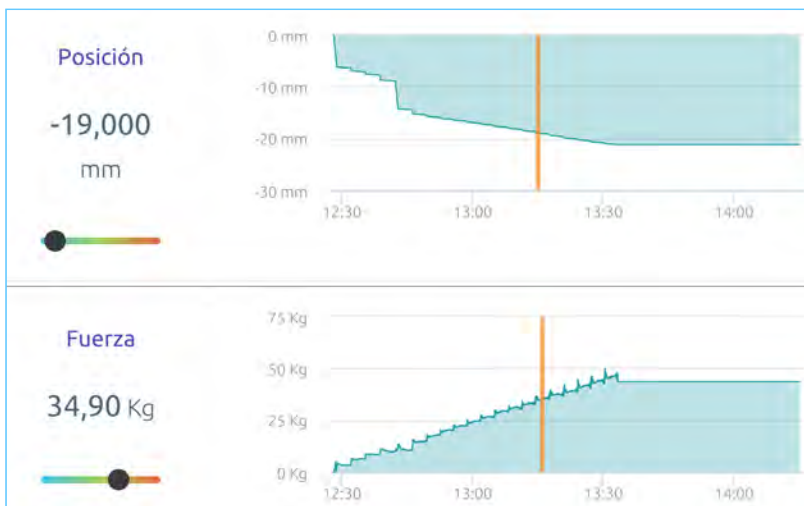
Density: **7800 Kg./m³**



Deformation with **APPLIED LOAD.**

Ref.

6025 V M/DS



"Patented"
P.T. 200201413

Máquina de ensayo

47:10 ciclo 1.818.915 Kg Print Share

[Volver al inicio...](#)

6025 V/MDS

Componente VERDE/ TC4GPN

Receta

E.LABORATORIO P.TRANSFERENCIA/UNE-EN ISO 10846
realizada en Máquina C

Máquina C

Posición [88,146 mm]

▼ -15,460 mm ● -16,970 mm ▲ -21,097 mm

Fuerza [5,00 kg ~ 50,00 kg]

▼ 15,00 kg ● 24,36 kg ▲ 45,70 kg

Velocidad [0,030 mm/s]

▼ -0,150 mm/s ● -0,030 mm/s ▲ -0,010 mm/s

Frecuencia [15,00 Hz ~ 25,00 Hz]

▼ 15,00 Hz ● 20,00 Hz ▲ 25,00 Hz

Vibración atenuada [Oscitación de 10,00 mm]

▼ 78,58 % ● 95,01 % ▲ 98,55 %

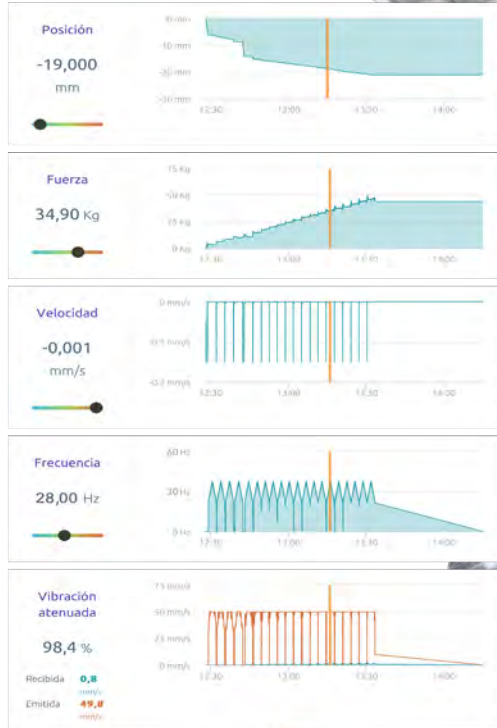
▼ mínimo ● media ▲ máximo

frecuencia natural obtenida [Según deformación mm]

▼ 5,30 Hz ● 4,08 Hz ▲ 3,08 Hz

Jefe de Laboratorio	Responsable de Ensayo
David Muñoz López	Francisco Rafael Estrada

Los resultados del presente informe conciernen, única y exclusivamente, a las muestras sometidas a ensayo.
Queda totalmente prohibida la reproducción parcial del presente documento, salvo consentimiento escrito de SENOR.

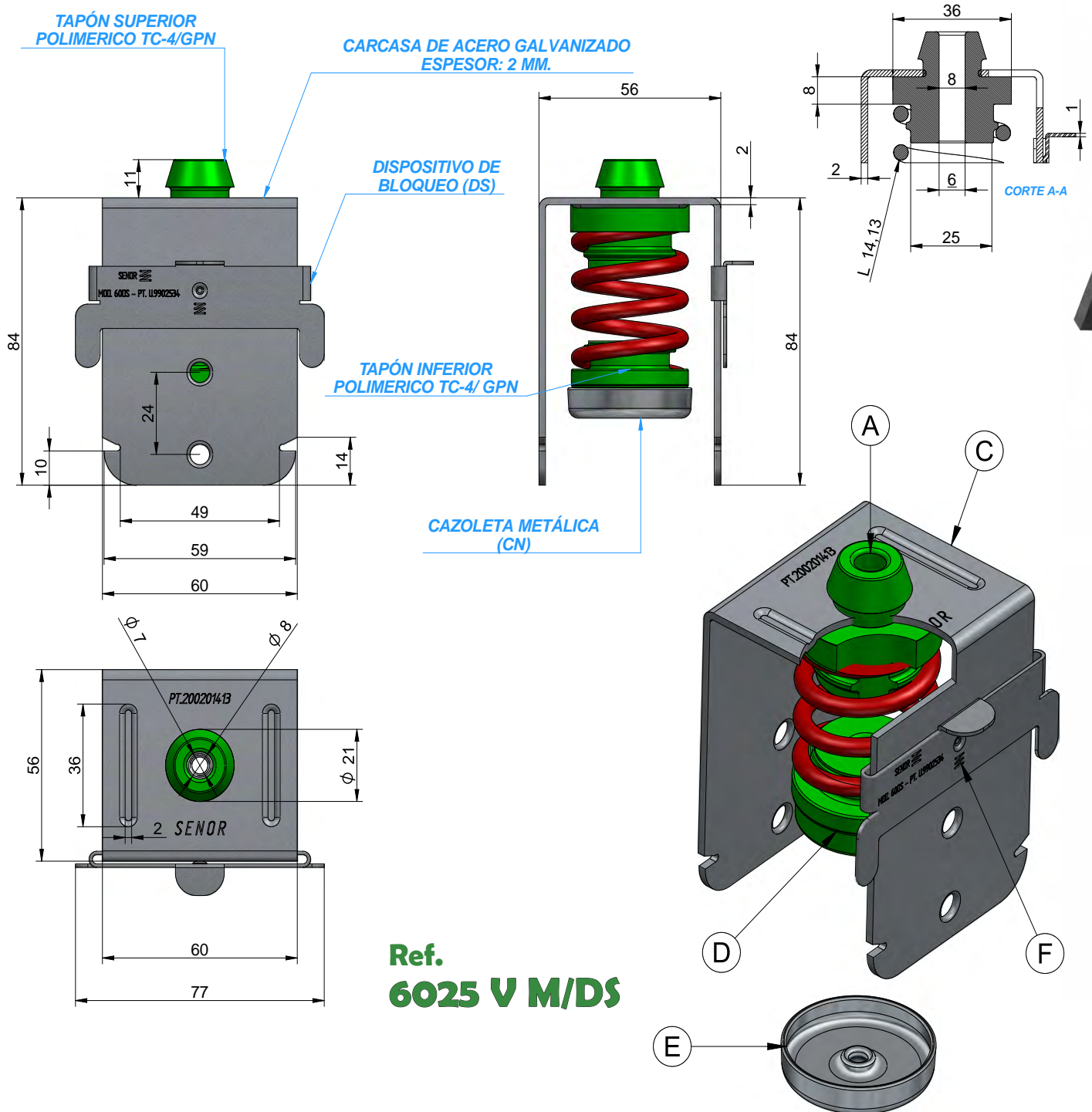


Fuerza 34,90 Kg

✓ Correcto
Frecuencia resultante: 3,51 Hz

1X 13:15:14

PRODUCT dimensions



Main components.

(A) **Top cap** with protruding neck, avoids contact between threaded rod and metallic components. In addition, it provides a perfect seating to the spring and optimal behavior in the range of the **mid/high frequencies (Hz)**.



(B) Metallic helicoidal spring; it has the advantage of eradicating all contamination by vibro-mechanical energy in frequencies medium / low (Hz).

(C) Outer casing made of galvanized steel of high performance **Dx54d + Z140** with an edge thickness of **2.0 millimeters**. It provides rigidity to the system and a quick insertion to the ceiling profile.

(D) Bottom cap, it avoids the contact between the threaded rod and the metal components. In addition, it provides a perfect settlement to the spring and an optimal behavior in the range of medium / high frequencies (Hz).

(E) Small metal bowl, made of high performance galvanized steel **Dx54d + Z140** with a thickness edge of **1.5 millimeters**. It provides the mechanical tensile strength of the system.

BREAK: It breaks the threads of the threaded road above **250Kg** punctual.

(F) Locking device, (DS), made of high performance galvanized steel **Dx54d + Z140** with a thickness edge of **1 millimeter**. **SEFETY:** it breaks above **300Kg** punctual.

LABORATORY tests. UNE-EN ISO 10846-1:2009

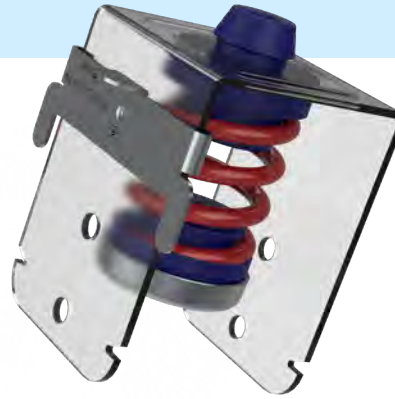
Acoustics and vibrations. Laboratory measurement of transfer properties vibroacoustics of elastic elements.

Ref. **6050 A M/DS**

Blue HYBRID System: "TC-5/EXN"

loads between **30-75 Kg.**

Resonance frequency **3 a 7Hz.**



HELICAL SPRING dimensions

(**d**) Wire diameter: **5,30 mm**

Active coils: **4,5**

(**Do**) Outer diameter: **35,50 mm**

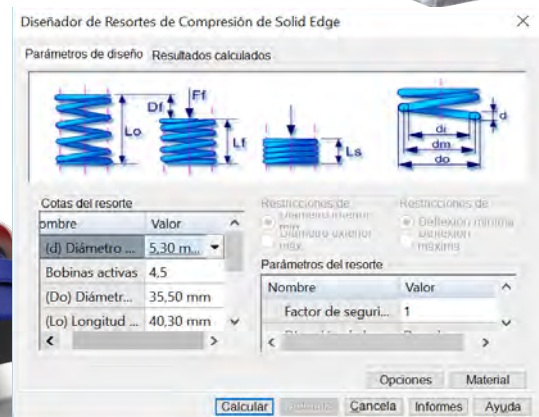
(**Lo**) Unloaded length: **40,30 mm**

(**Fp**) Preload: **350,00 N**

(**Ff**) Applied load: **750,00 N**

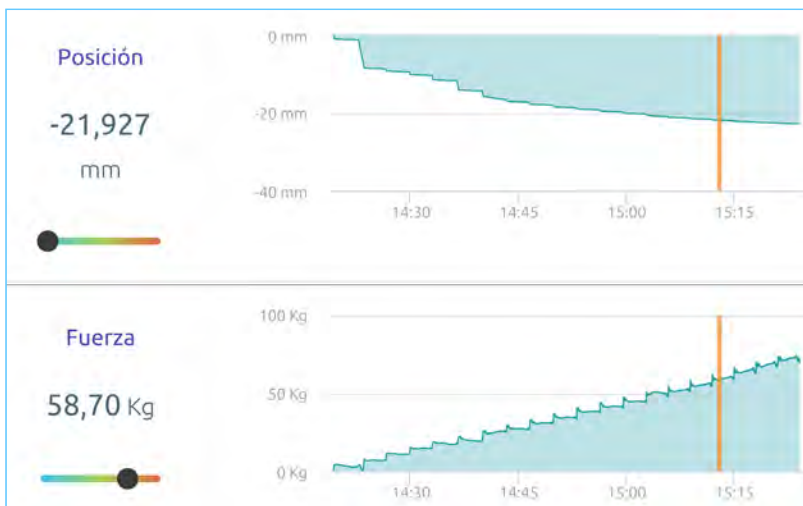
Modulus os rigidity: **72864 N/m**

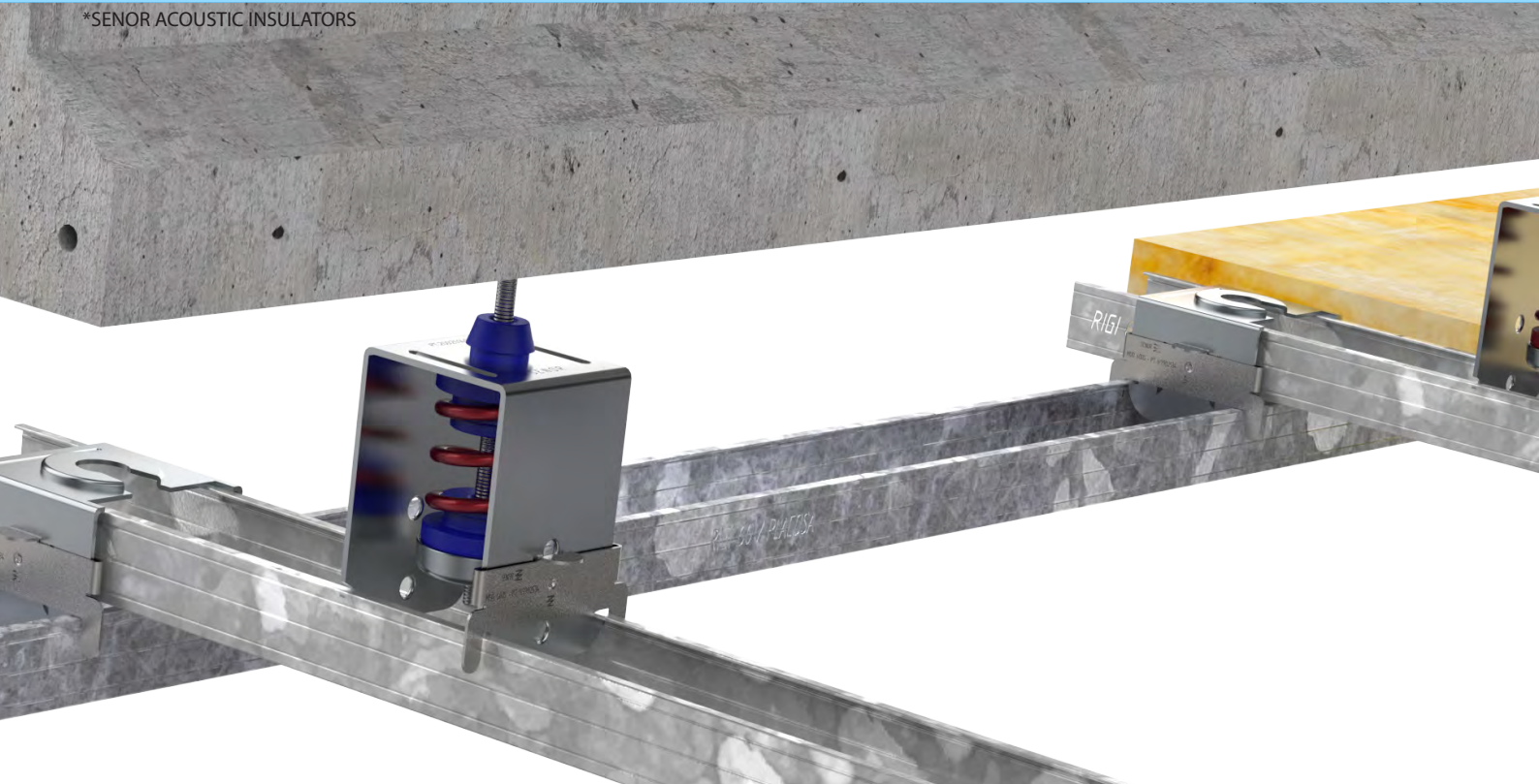
Density: **7800 Kg./m3**



Ref. **6050 A M/DS**

Deformation with **APPLIED LOAD.**





 Máquina de ensayo

53:45 ciclo 1.898.378   

[Volver al inicio...](#)

6050 A/MDS

Componente AZUL/TCSEXN

Receta

E.LABORATORIO P.TRANSFERENCIA/UNE-EN ISO 10846

realizada en Máquina C

 Máquina C

Posición [90,711 mm]

▼ -18,686 mm ○ -20,637 mm ▲ -22,830 mm

Fuerza [5,00 kg ↔ 75,00 kg]

▼ 34,80 kg ○ 48,70 kg ▲ 74,90 kg

Velocidad [0,030 mm/s]

▼ -0,150 mm/s ○ -0,030 mm/s ▲ -0,010 mm/s

Frecuencia [15,00 Hz ↔ 25,00 Hz]

▼ 15,00 Hz ○ 20,00 Hz ▲ 25,00 Hz

Vibración atenuada [Oscilación de 10,00 mm]

▼ 82,42 % ○ 94,76 % ▲ 98,55 %

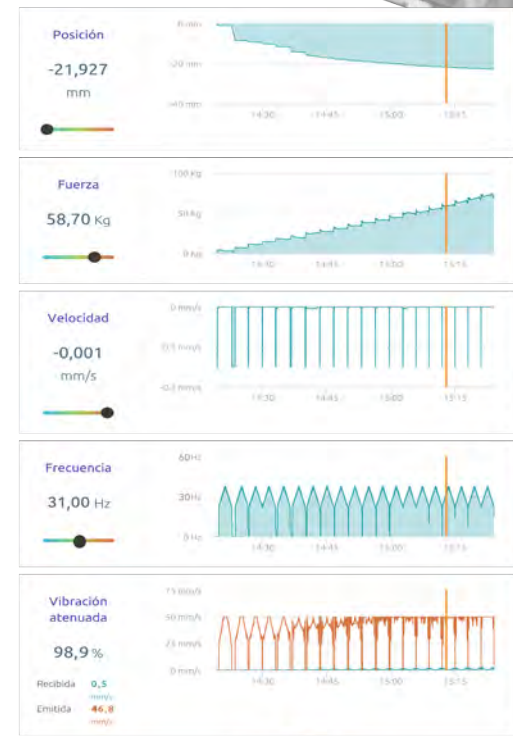
▼ mínimo ○ media ▲ máximo

frecuencia natural obtenida [Según deformación mm]

▼ 5,80 Hz ○ 4,46 Hz ▲ 3,04 Hz

Jefe de Laboratorio	Responsable de Ensayo
David Muñoz López	Francisco Rafael Estrada

Los resultados del presente informe conciernen, única y exclusivamente, a las muestras sometidas a ensayo.
Queda totalmente prohibida la reproducción parcial del presente documento, salvo consentimiento escrito de SENOR.

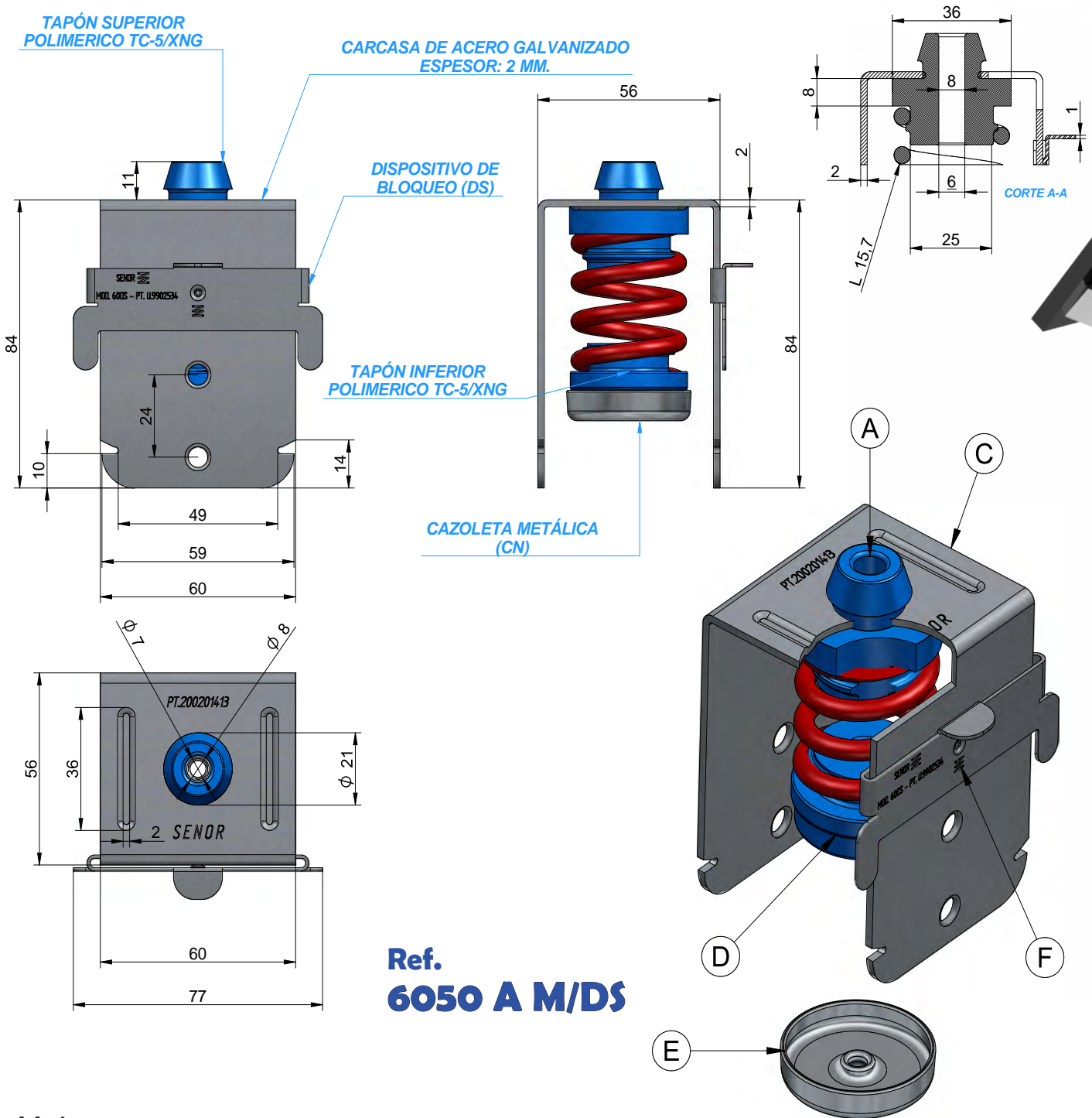


Fuerza 58,70 Kg

Correcto Frecuencia resultante 3,27 Hz

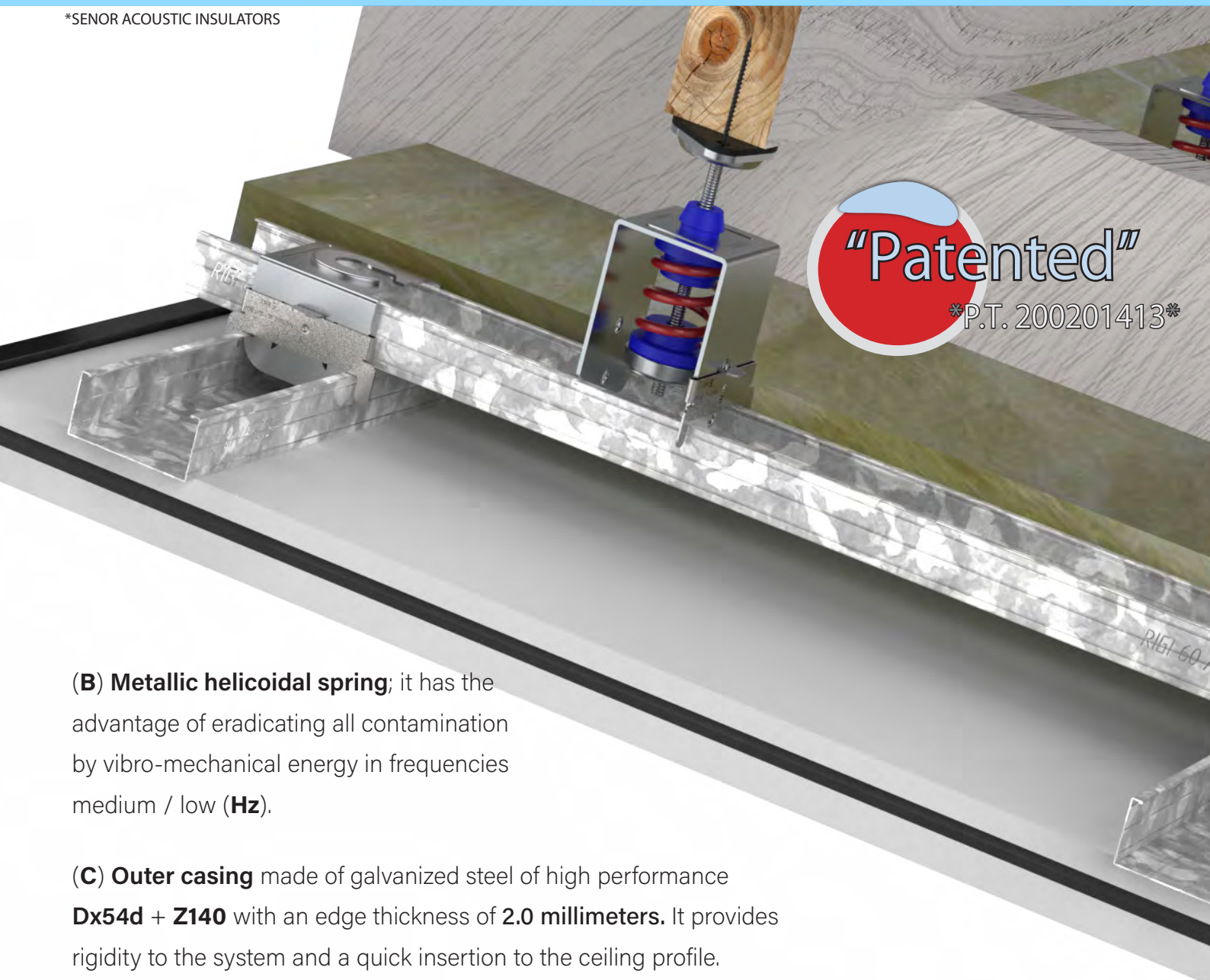
"Patented"
P.T. 200201413

PRODUCT dimensions



Main components.

(A) **Top cap** with protruding neck, avoids contact between threaded rod and metallic components. In addition, it provides a perfect seating to the spring and optimal behavior in the range of the **mid/high frequencies (Hz)**.



(B) Metallic helicoidal spring; it has the advantage of eradicating all contamination by vibro-mechanical energy in frequencies medium / low (Hz).

(C) Outer casing made of galvanized steel of high performance **Dx54d + Z140** with an edge thickness of **2.0 millimeters**. It provides rigidity to the system and a quick insertion to the ceiling profile.

(D) Bottom cap, it avoids the contact between the threaded rod and the metal components. In addition, it provides a perfect settlement to the spring and an optimal behavior in the range of medium/ high frequencies (Hz).

(E) Small metal bowl, made of high performance galvanized steel **Dx54d + Z140** with a thickness edge of **1.5 millimeters**. It provides the mechanical tensile strength of the system.

BREAK: It breaks the threads of the threaded road above **250Kg** punctual.

(F) Locking device, (DS), made of high performance galvanized steel **Dx54d + Z140** with a thickness edge of **1 millimeter**. **SEFETY:** it breaks above **300Kg** punctual.

LABORATORY tests. UNE-EN ISO 10846-1:2009

Acoustics and vibrations. Laboratory measurement of transfer properties vibroacoustics of elastic elements.

Ref.

6075 R M/DS

Red HYBRID system: "TC-6/EXN"

loads between **60-120 Kg.**

Resonance frequency 3 a 7Hz.



HELICAL SPRING dimensions

(d) Wire diameter: **5,60 mm**

Active coils: **4,0**

(Do) Outer Diameter: **37,00 mm**

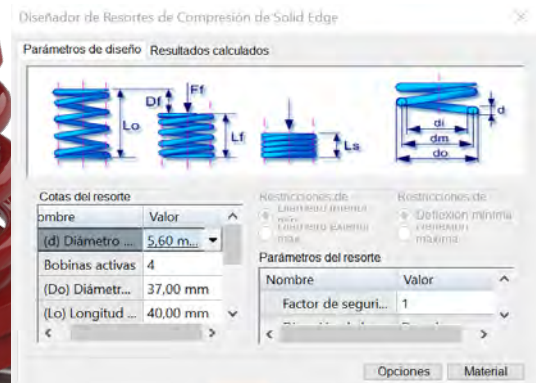
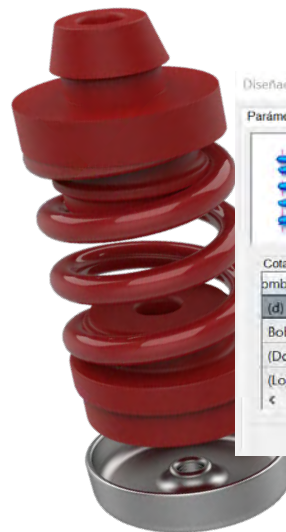
(Lo) Unloaded length: **40,00 mm**

(Fp) Preload: **500,00 N**

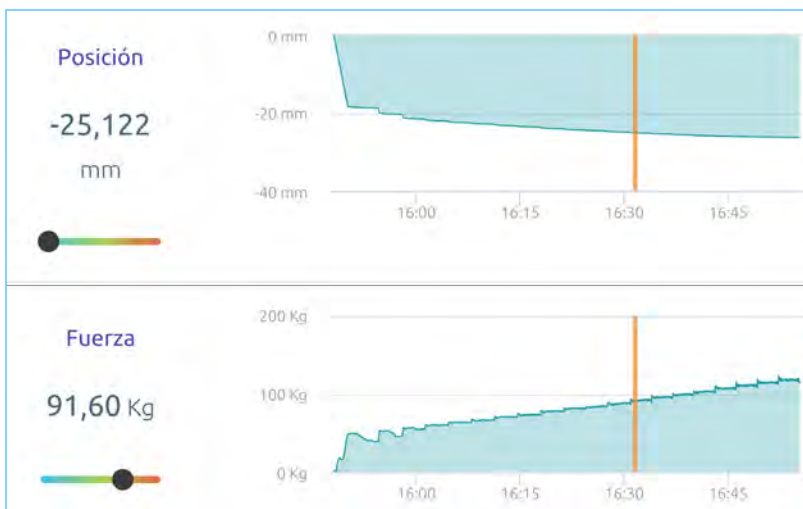
(Ff) Applied load: **1200,00 N**

Modulus of rigidity: **115812 N/m**

Density: **7800 Kg./m³**



Deformation with **APPLIED LOAD.**

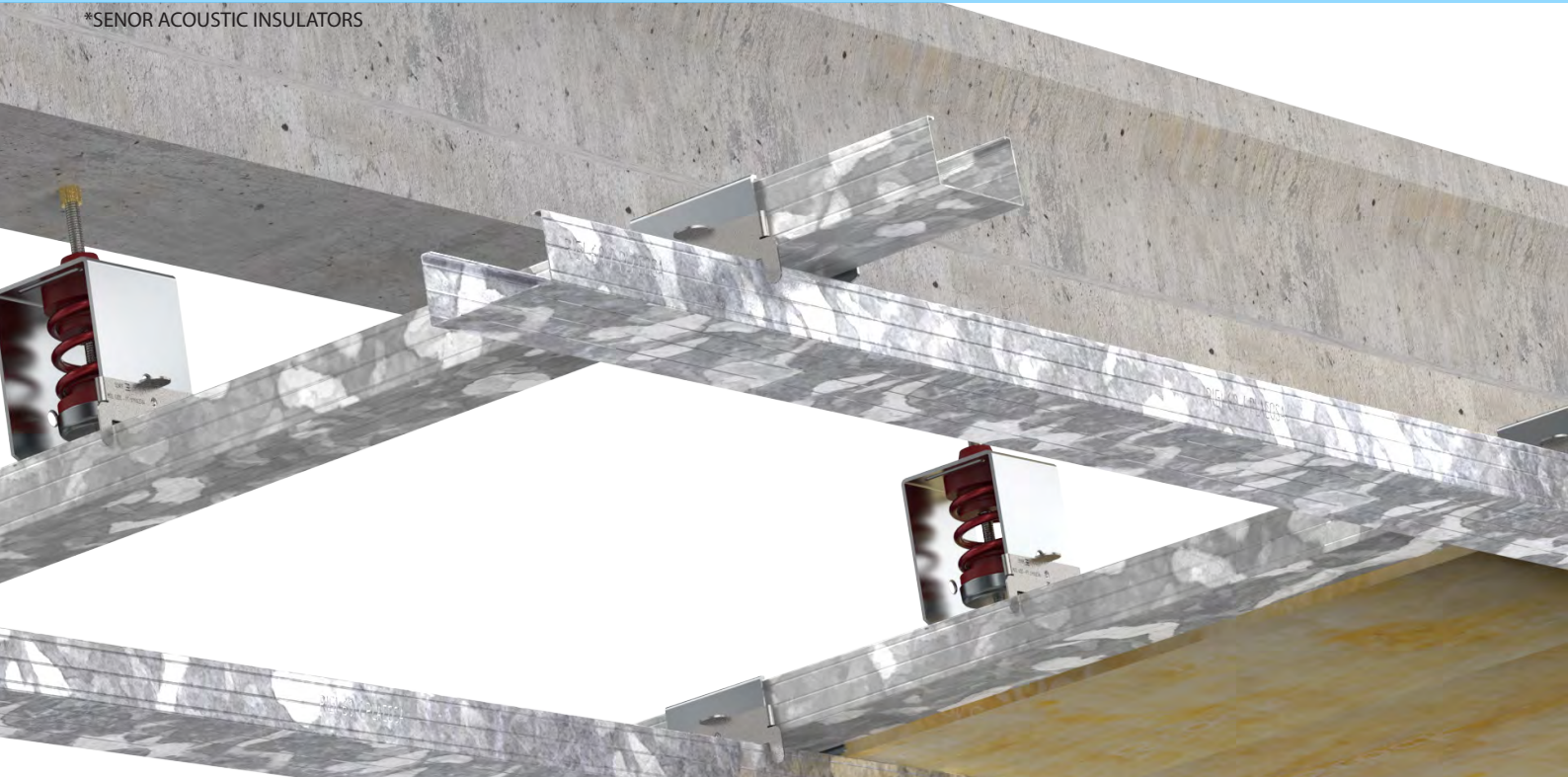


Ref.

6075 R M/DS



*SENOR ACOUSTIC INSULATORS



Máquina de ensayo

43:43 ciclo 1.955.467

Kg

Volver al inicio...

6075 R/MDS

Componente ROJO/TC6EXN

Receta

E.LABORATORIO P.TRANSFERENCIA/UNE-EN ISO 10846
realizada en Máquina C

Máquina C

Posición [96,276 mm]

▼ -20,291 mm 0 -23,326 mm ▲ -26,225 mm

Fuerza [50,00 kg ~ 120,00 kg]

▼ 50,80 kg 0 79,10 kg ▲ 119,98 kg

Velocidad [0,030 mm/s]

▼ -0,150 mm/s 0 -0,007 mm/s ▲ -0,010 mm/s

Frecuencia [15,00 Hz ~ 25,00 Hz]

▼ 15,00 Hz 0 20,00 Hz ▲ 25,00 Hz

Vibración atenuada [Oscitación de 10,00 mm]

▼ 80,18 % 0 95,36 % ▲ 98,55 %

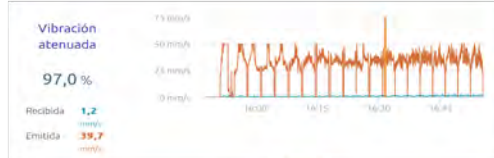
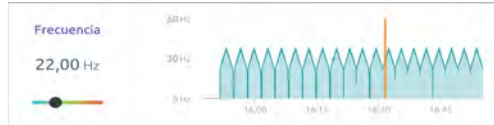
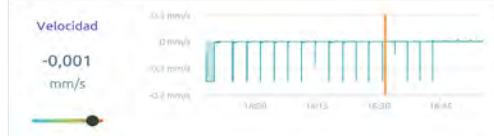
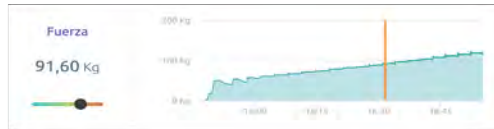
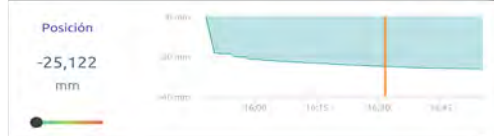
▼ mínimo 0 media ▲ máximo

frecuencia natural obtenida [Segun deformación mm]

▼ 6,10 Hz 0 4,21 Hz ▲ 3,09 Hz

Jefe de Laboratorio	Responsable de Ensayo
David Muñoz López	Francisco Rafael Estrada

Los resultados del presente informe conciernen, única y exclusivamente, a las muestras sometidas a ensayo.
Queda totalmente prohibida la reproducción parcial del presente documento, salvo consentimiento escrito de SENOR.

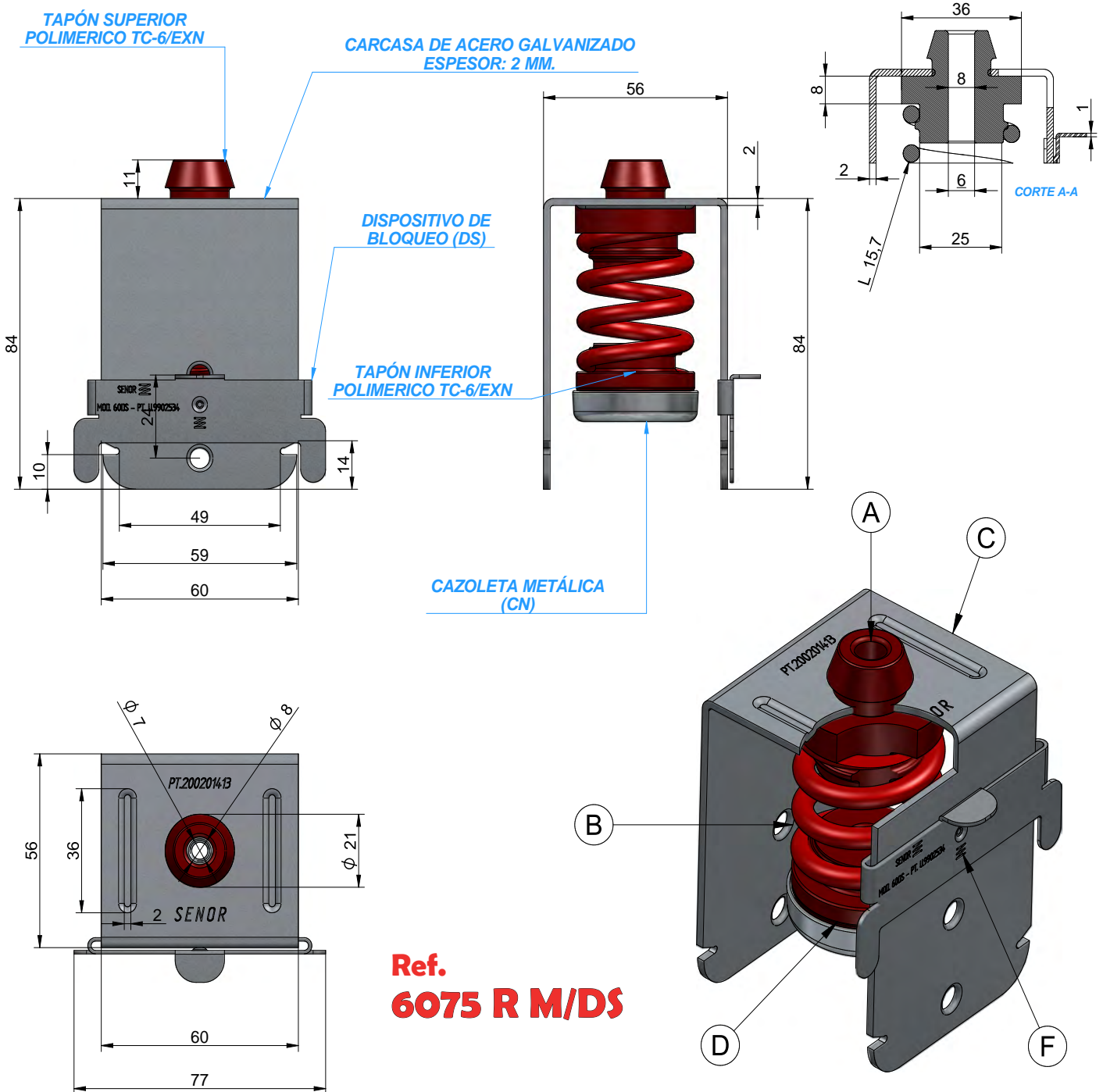


Fuerza 91,60 Kg



"Patented"
P.T. 200201413

PRODUCT dimensions



Main components.

(A) **Top cap** with protruding neck, avoids contact between threaded rod and metallic components. In addition, it provides a perfect seating to the spring and optimal behavior in the range of the **mid/high frequencies (Hz)**.



"Patented"
P.T. 200201413

(B) Metallic helicoidal spring; it has the advantage of eradicating all contamination by vibro-mechanical energy in frequencies medium / low (Hz).

(C) Outer casing made of galvanized steel of high performance **Dx54d + Z140** with an edge thickness of **2.0 millimeters**. It provides rigidity to the system and a quick insertion to the ceiling profile.

(D) Bottom cap, it avoids the contact between the threaded rod and the metal components. In addition, it provides a perfect settlement to the spring and an optimal behavior in the range of medium / high frequencies (Hz).

(E) Small metal bowl, made of high performance galvanized steel **Dx54d + Z140** with a thickness edge of **1.5 millimeters**. It provides the mechanical tensile strength of the system.

BREAK: It breaks the threads of the threaded road above **250Kg** punctual.

(F) Locking device, (DS), made of high performance galvanized steel **Dx54d + Z140** with a thickness edge of **1 millimeter**. **SEFETY:** it breaks above **300Kg** punctual.

LABORATORY tests. UNE-EN ISO 10846-1:2009

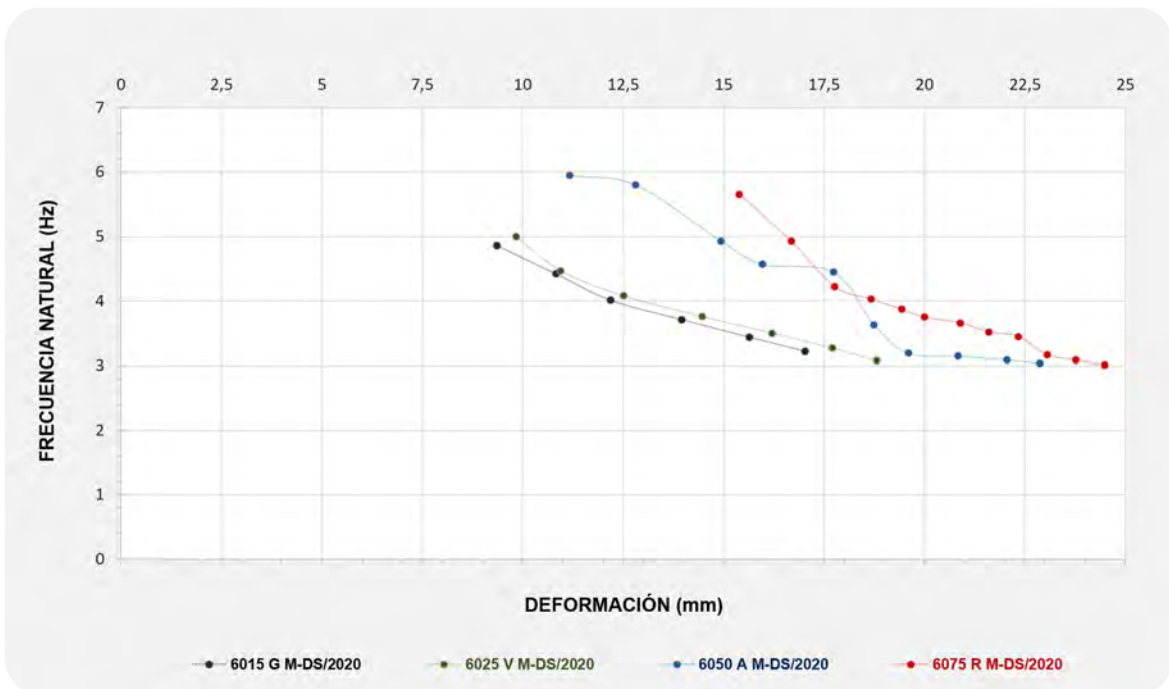
The **60M/DS** range has the advantage of combining **4 colors** to differentiate the load per unit (kg): **GRAY**, **GREEN**, **BLUE** and **RED**. The **GRAY** color will indicate the one with the lowest weight and the **RED** color the one with the higher load. This way you can choose the most effective shock absorber depending on the system.

PRODUCT chart

Chart 1

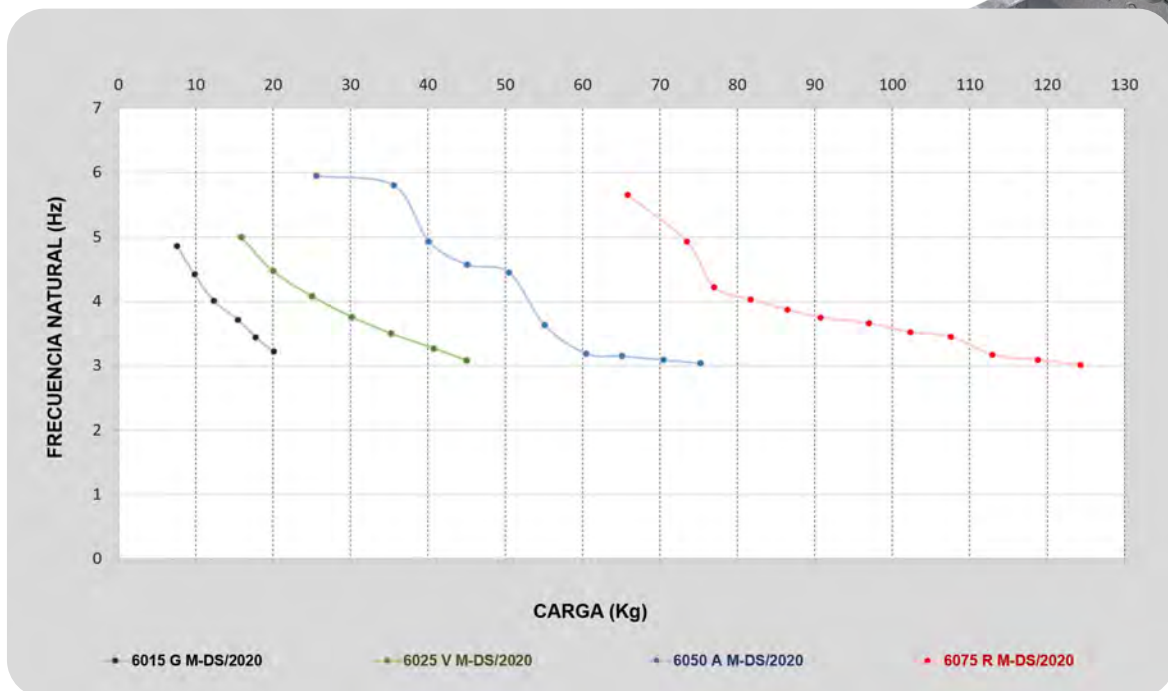


Chart 2



"Patented"
P.T. 200201413

Chart 3



SEÑOR Certifies.



SEÑOR certifies.

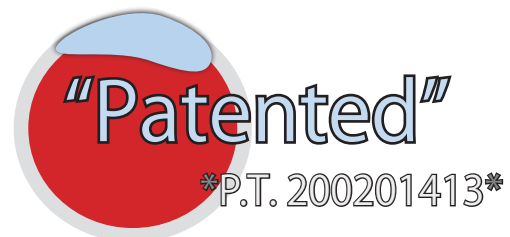
All our products in the **construction range** for the suspension of low acoustic false ceilings in buildings.. **Mod.60M DS**, have an optimal lifespan of 10 years provided that the installation is carried out under normal environmental conditions and are not exposed to chemical components that could degrade the product. The model **Mod.60M DS** " strictly complies with **UNE 100-153-88**: anti-vibration mounting: selection criteria.



Warning
Important information

SEÑOR"; reserves the right to make changes in specifications at any time without prior notice. It is a responsibility of the user to use the latest and updated version of the product data sheets. A copy of which will be available on request. This information and, in particular, relative recommendations to the application and final use of the product, are given in good faith, based on "SEÑOR" knowledge and experience of its products, provided that they are correctly installed in normal circumstances and within its useful life.

Project Manager: David Muñoz "SEÑOR"



DECLARACIÓN DE CONFORMIDAD.

(DIRECTIVA 89/106/CEE SOBRE LOS PRODUCTOS DE CONSTRUCCIÓN)

EC DECLARATION OF CONFORMITY

(CONSTRUCTION PRODUCTS DIRECTIVE 89/106/CEE).

SUSENSIONES ELÁSTICAS DEL NORTE, S.L. (**SEÑOR**)

P.I. El Garrotal, Parcela 10, módulo 4 y 5 / Palma del Río (CÓRDOBA) España (SPAIN)

DECLARA BAJO SU RESPONSABILIDAD QUE LOS SIGUIENTES COMPONENTES DE SUBESTRUCTURA DE TECHO SUSPENDIDO UTILIZADO EN INTERIORES DE EDIFICIOS: DECLARES UNDER HIS RESPONSIBILITY THAT THE FOLLOWING COMPONENTS FOR SUSPENDED CEILING USED FOR INTERIOR APPLICATIONS:

MODELO/MODEL: **SE-60M/DS.**

REFERENCIAS/REFERENCES:

MÉTRICA/METRIC: **6 y 8.**

PERFIL/PROFILE: **60 milímetros**

SE-SE-6015 G MDS/M6

SE-SE-6025 V MDS/M6

SE-SE-6050 A MDS/M6

SE-SE-6075 R MDS/M6

SE-SE-6015 G MDS/M8

SE-SE-6025 V MDS/M8

SE-SE-6050 A MDS/M8

SE-SE-6075 R MDS/M8

CUMPLE LOS REQUISITOS DE LA NORMA

MEET THE REQUIREMENTS OF THE STANDART

UNE-EN 13964:2006; UNE-EN 13964:2006/A1:2008

EN 13964:2006; EN 13964:2006/A1:2008

APLICACIONES:

APPLICATIONS:

PARA USO EN LA INSTALACIÓN DE FALSOS TECHOS ACÚSTICOS.

TO BE USED IN INSTALATION OF ACOUSTIC

FECHA DE EMISIÓN: 07/02/2018

ISSUED ON: 07/02/2018

GERENTE/MANAGING DIRECTOR

Ms Carmen López Iglesias

RE: DCE 002-ver 1