

SENIOR FTD NIVEL-47/WALL LINING

THE **THINNEST RUBBER** DAMPER IN VIBRATION PROTECTION WITH DIRECT ATTACHMENT TO **TC-45/48** PROFILES WITH **LEVELING SYSTEM**

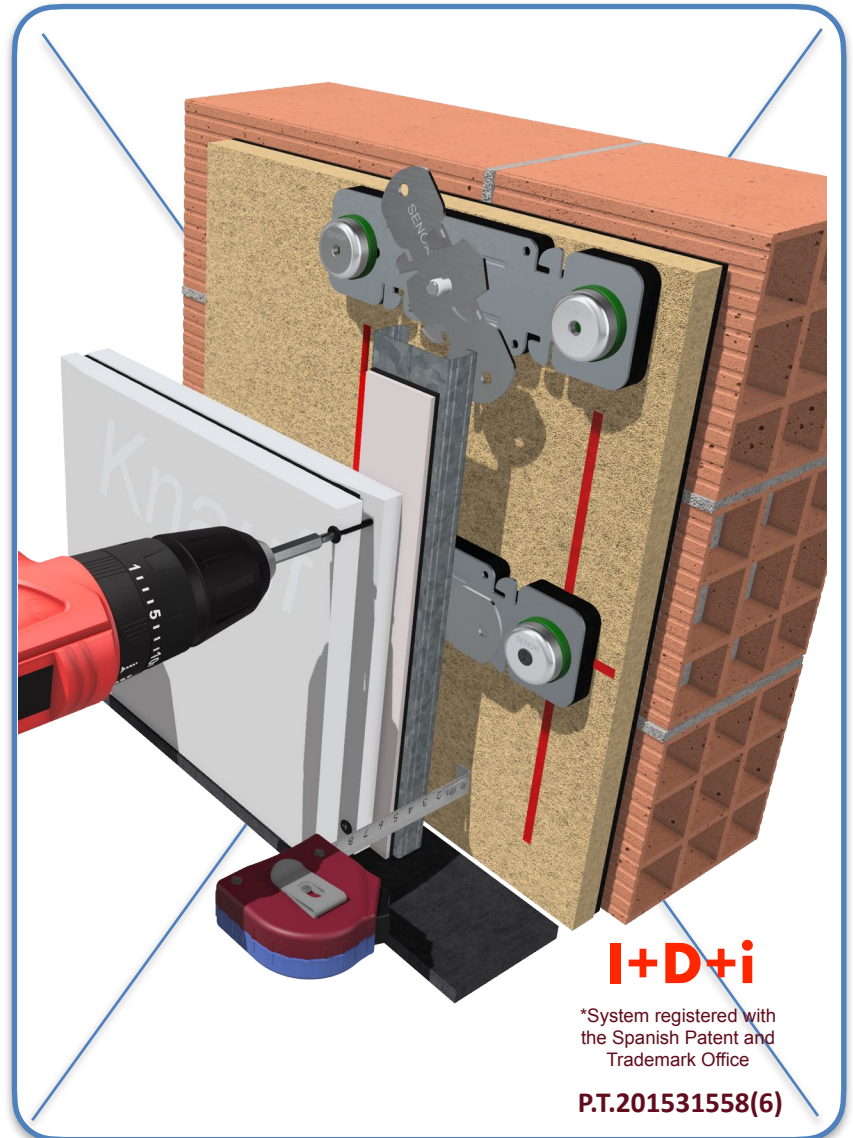
EI FTD NIVEL-47/TD is presented as the thinnest and most efficient damper on the market, standing out not only for its compact design but also for its exceptional ability to adapt to irregular environments with space limitations. This innovative device is considered both the present and the future in the field of acoustic control, offering effective solutions to improve sound quality in places where space is a valuable resource. Its manufacturing incorporates advance technology that virtually eliminates the acoustic contamination generated by solid vibrations, thus ensuring a quieter and more comfortable environment. This type of damper is ideal for applications in recording studios, small offices, and any area where high levels of soundproofing are required without sacrificing usable space.

Construct **acoustic walls** with minimal effort, achieving airborne sound reduction improvements of over **12dB** with tested results.

Preview in Augmented Reality ×



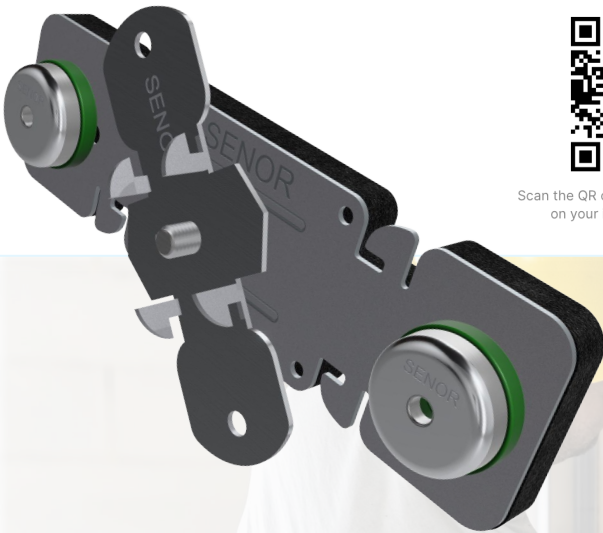
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*System registered with the Spanish Patent and Trademark Office

P.T.201531558(6)



Usage Recommendation: Acoustic wall lining systems are an essential solution for the rehabilitation of spaces such as residential units and commercial areas in residential buildings. These systems attenuate noise, enhancing acoustic quality and ensuring occupant comfort, while also contributing to energy efficiency, interior aesthetics, and compliance with the building technical code (DB-HR)

| REF. | COLOUR | FIELD OF APPLICATION | LOAD (Kg) MIN-MAX | CHANNEL (min-max) |
|--------------------|--------|----------------------|----------------------|----------------------|
| SE-FTD NIVEL-47/TD | | Acoustic wall lining | 3 - 25 | 45 - 48 |

Rubber System: The innovative design of its dual core, with the elastic component **TC4/GPN**, manufactured by **KRAIBURG-TPE** according to UNE-EN ISO 10846-1:2009 standards for **SENIOR**, stands out for its significantly superior damping factor, allowing exceptional energy absorption and vibration reduction across a wide frequency range. This improvement optimizes its mechanical properties and increases the effectiveness of the acoustic field by more than 10%, enhancing sound quality and creating a more pleasant environment.

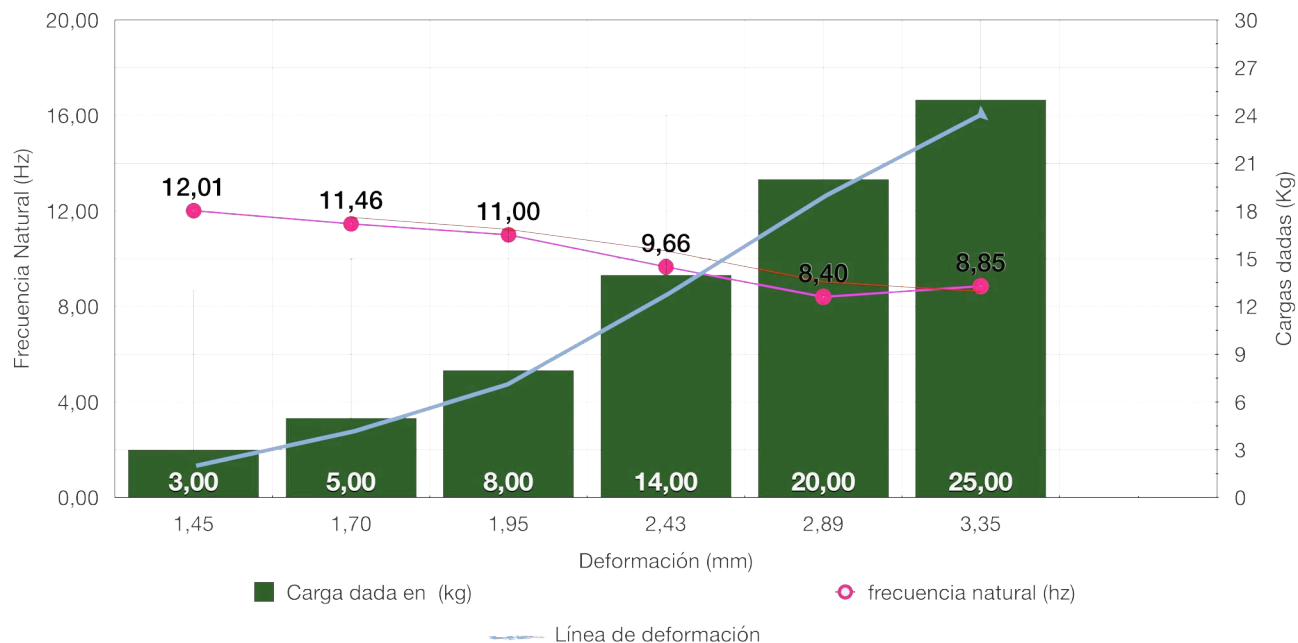
✓ Resonance frequency: 7-15Hz

Dynamic Behavior and Axial Deformation

The steel helical springs exhibit a dynamic stiffness equivalent to their static stiffness, making them suitable for applications requiring predictable mechanical properties. In contrast, viscoelastic materials exhibit more complex behavior. The dynamic stiffness of these materials never matches the static stiffness, as they absorb and dissipate energy, adapting to the frequency and magnitude of vibrations. To understand this phenomenon, the dynamic behavior of viscoelastic materials cannot be determined solely by theoretical calculations; it requires specific laboratory testing to ensure accurate data for industrial applications.

TABLE + GRAPH OF LABORATORY RESULTS

| LOAD (Kg) | DEFORMATION (mm) | RESONANCE FREQUENCY (Hz) | SWEEP (Hz) | % SOUNPROOFING |
|-----------|------------------|--------------------------|------------|----------------|
| 3 | 1,45 | 12,01 | 50 | 93,88 |
| 5 | 1,70 | 11,46 | | 94,46 |
| 8 | 1,95 | 11,00 | | 94,91 |
| 14 | 2,43 | 9,66 | | 96,12 |
| 20 | 2,89 | 8,40 | | 97,10 |
| 25 | 3,35 | 8,85 | | 96,77 |



AIRBORNE NOISE INSULATION TEST

You will be impressed by its performance! It is an ideal damper for designing acoustic technical wall lining systems. Say NO to noise.

Standards: UNE-EN ISO 10140-1:2016 y UNE-EN ISO 10140-2:2011.

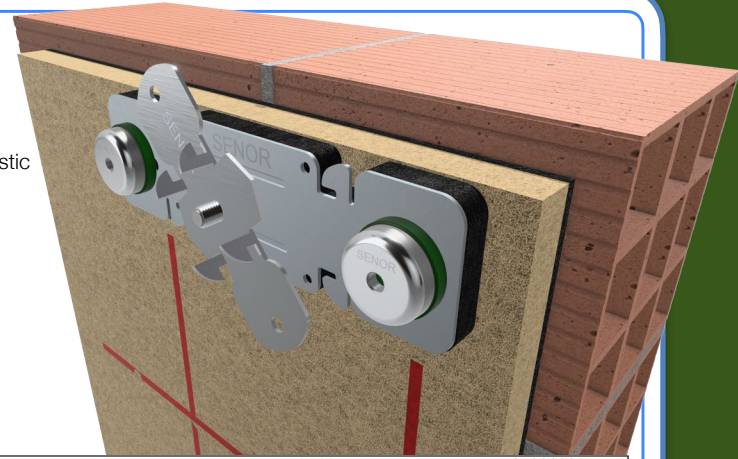
Laboratory: TECNALIA (Vitoria). **Date:** March 3, 2021.

Sample: ACOUSTIC WALL LINING WITH DAMPERS..

Base wall (standardized): 15 cm concrete block + plaster on both sides.

Standardized base thickness and weight: 17,5 cm y 149 kg/m².

Total wall lining thickness: 6,2 cm



tecnal:a
MEMBER OF BASQUE RESEARCH
& TECHNOLOGY ALLIANCE



Fotos de montaje del trasdosado

tecnal:a
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Aislamiento al Ruido Aéreo según UNE-EN ISO 10140-2:2022 Medidas en Laboratorio

CLIENTE: SUSPENSIONES ELÁSTICAS DEL NORTE, S.L. (SENOR)

FECHA ENSAYO: 15/04/2024

RESULTADO Nº: 110909-620-RA

MUESTRA: TRASDOSADO DIRECTO

ACÚSTICO DANOSA+SENOR:

- DANOFON (DANOSA)
- Amortiguador SE-FTD MINI 47 (SENOR)
- Perfil 45 mm
- FONODAN 50 (DANOSA) y SE-MONT-BICAPA-40 (SENOR)
- Banda acústica SE-BEC-8x80 (SENOR)
- Placa yeso laminado 12,5 mm
- M.A.D. 4 (DANOSA)
- Placa yeso laminado 12,5 mm

SOBRE PARED DE BLOQUE REVESTIDA

Masa superficial estimada: 329 kg/m²

Área muestra: 10,08 m²

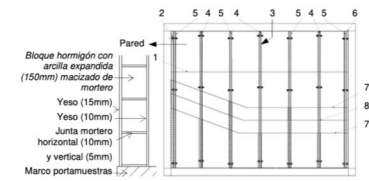
V_{emi}: 66,2 m³ V_{rec}: 55,2 m³

T_{emi}: 20,3 °C T_{rec}: 20,4 °C

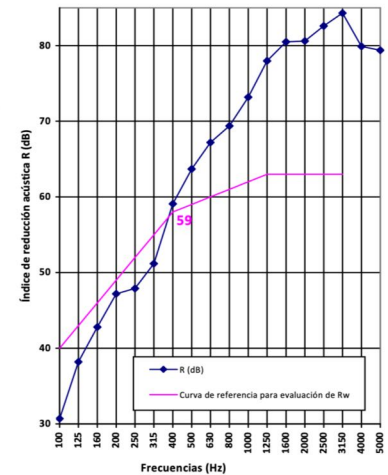
H_{emi}: 50 % H_{rec}: 51 %

P_{emi}: 966 mbar P_{rec}: 966 mbar

V: volumen; emi: sala emisora; rec: sala receptora



1. DANOFON
2. SE-FTD MINI 47
3. Perfil 45 mm
4. FONODAN 50
5. SE-MONT BICAPA-40
6. SE-BEC-8x80
7. Placa yeso laminado 12,5 mm
8. M.A.D. 4



| f (Hz) | R (dB) |
|--------|--------|
| 100 | 30,7 |
| 125 | 38,2 |
| 160 | 42,8 |
| 200 | 47,2 |
| 250 | 47,9 |
| 315 | 51,2 |
| 400 | 59,1 |
| 500 | 63,7 |
| 630 | 67,2 |
| 800 | 69,4 |
| 1000 | 73,2 |
| 1250 | 78,0 |
| 1600 | 80,5 |
| 2000 | 80,6 |
| 2500 | 82,6 |
| 3150 | 84,3 |
| 4000 | 79,9 |
| 5000 | 79,4 |

Índices según UNE-EN ISO 717-1:2021 **R_w (C_vC_{tr}): 59 (-3; -10) dB**

Índices según CTE DB-HR: **R_A: 57,4 dBA**

R_{A,w}: 49,1 dBA



*R_w ≥ valor indicado (límite medida por aprox. R_{lim}). R_{lim}: 5000 Hz=94,1 dB.

Evaluación basada en resultados de medición en laboratorio obtenidos mediante método de ingeniería

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 Youtube
SEÑOR Aisladores Acústicos



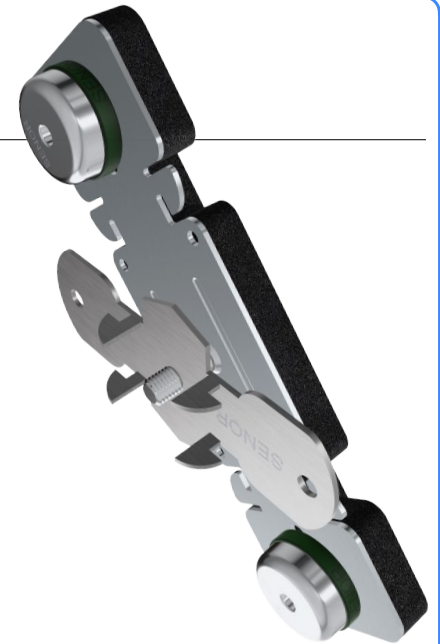
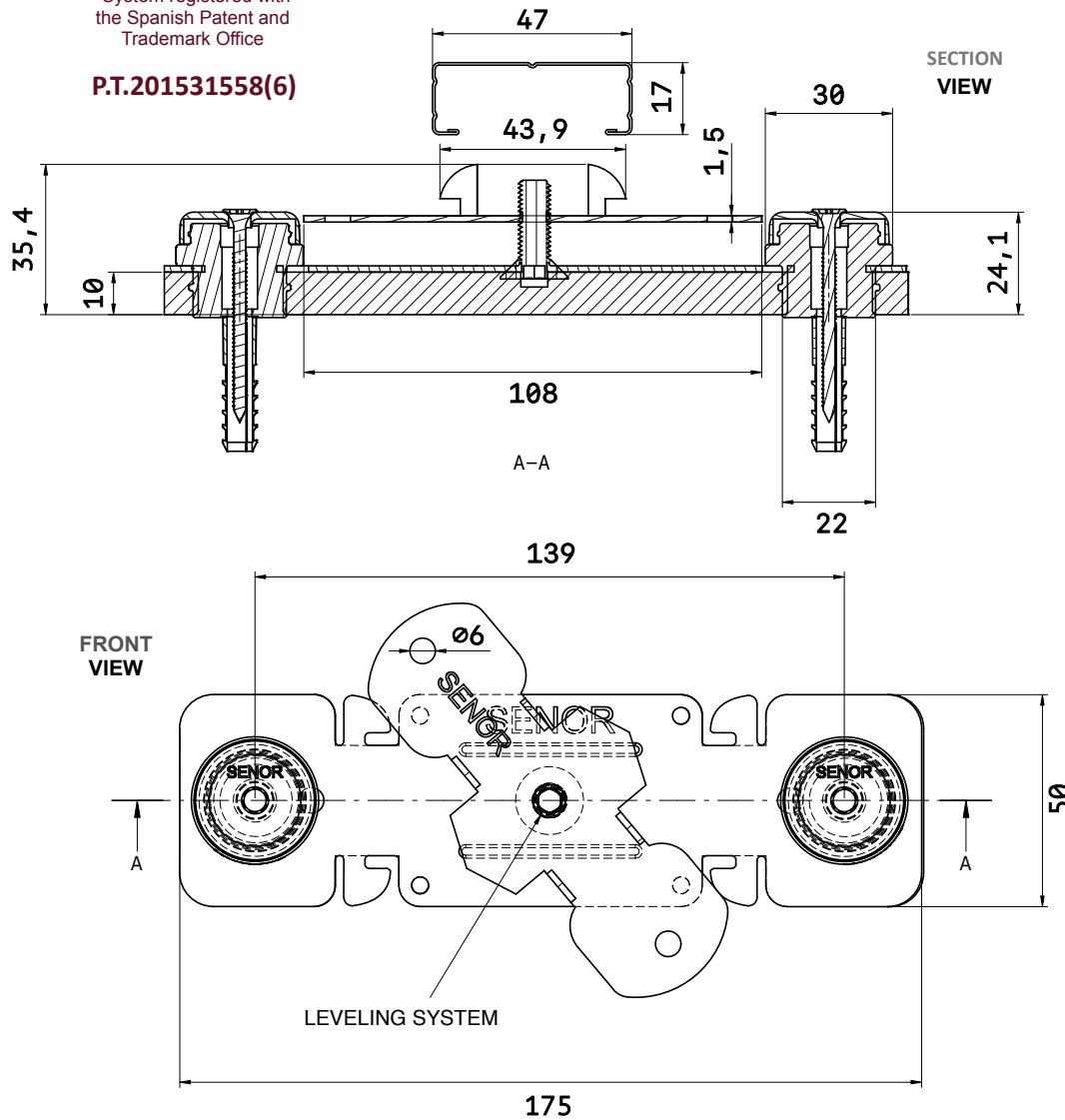
SEÑOR Products
ACOUSTIC Wall Lining

Dimensions

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*System registered with
the Spanish Patent and
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P.T.201531558(6)



MAIN FEATURES

FTD NIVEL-47/TD is a damper known for its strength and durability, designed for acoustic wall lining suspension systems in irregular and confined spaces. Its direct attachment to the wall maximizes space and enables efficient and quick installation. This feature makes it a convenient option for commercial establishments seeking practical solutions. Its robust design ensures good adaptability to various environments, being key to optimal performance in extreme conditions, making it preferred for projects with space constraints. It provides airborne sound reduction improvements of over **12dB** according to UNE-EN ISO 717-2:2021 evaluation, with tested results.

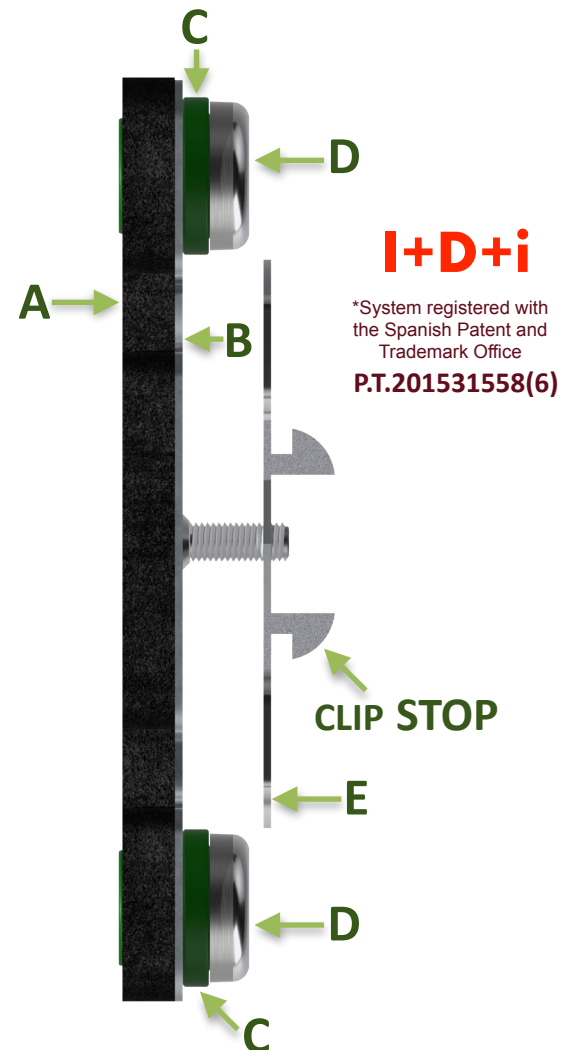
A: The EPDM CR-130/BEC-10 base plate is distinguished by its ability to effectively eliminate any type of contamination related to vibro-mechanical energy, especially at mid and low frequencies, typically within the Hertz (Hz) range. This material is designed to absorb and dissipate unwanted vibrations, making it an ideal solution for applications where stability and noise control are essential.

B: The base plate made of STEEL is crafted from high-quality galvanized steel, specifically of type **Dx54d + Z140**, ensuring excellent corrosion resistance and prolonged durability in harsh environments. With a thickness of 2 mm, this structure not only provides significant rigidity to the system but also plays a crucial role in the axial compression of the elastic components, ensuring they maintain optimal performance and stability under load.

C: The TC4/GPN Rubber Top Plug is characterized by its design with a protruding collar, an ingenious innovation that prevents unwanted contact between the fastening screws and the steel casing, which is crucial to ensuring the system's durability and performance. This component not only acts as a physical separator but also plays a fundamental role in vibration damping. Its ability to effectively reduce vibrations in the mid and high-frequency range, expressed in hertz (Hz), makes it an ideal solution for applications where stability and smooth operation are paramount.

D: The **CN** is made of deep-drawing steel type **DC04** according to the **EN10131** steel standard, with a thickness of 1.5 mm. It is designed to withstand high loads.

E: The **LEVELING Plate in STEEL** is made of high-quality galvanized steel, specifically of type **Dx54d + Z140**, ensuring excellent corrosion resistance and extended durability in harsh environments. With a thickness of 2 mm, it also incorporates the innovative quick anchoring system (**CLIP STOP**), featuring a simple clip and fixed profile.




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DEFORMATION TEST

Preview in Augmented Reality 



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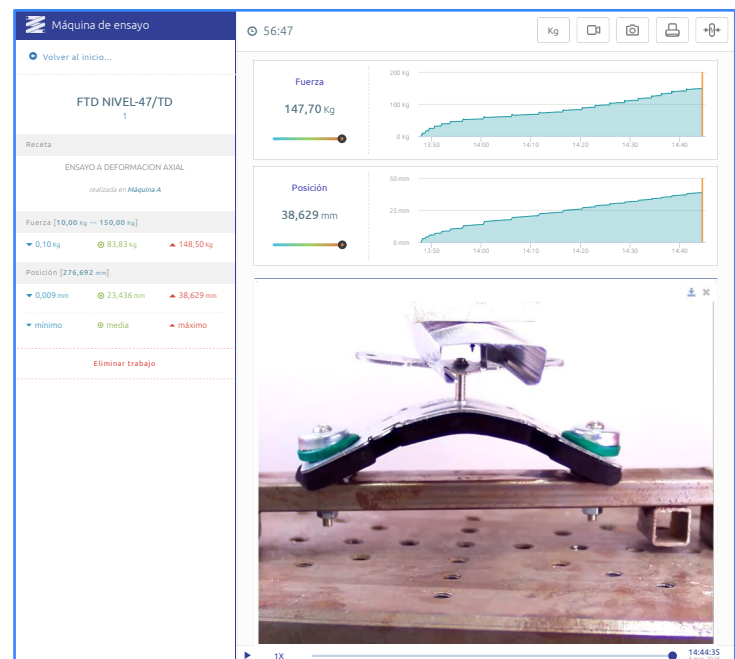
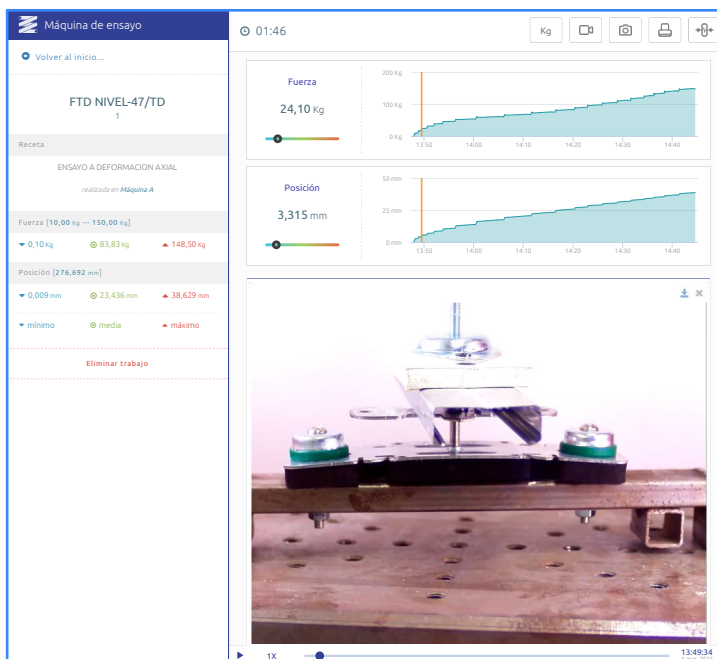
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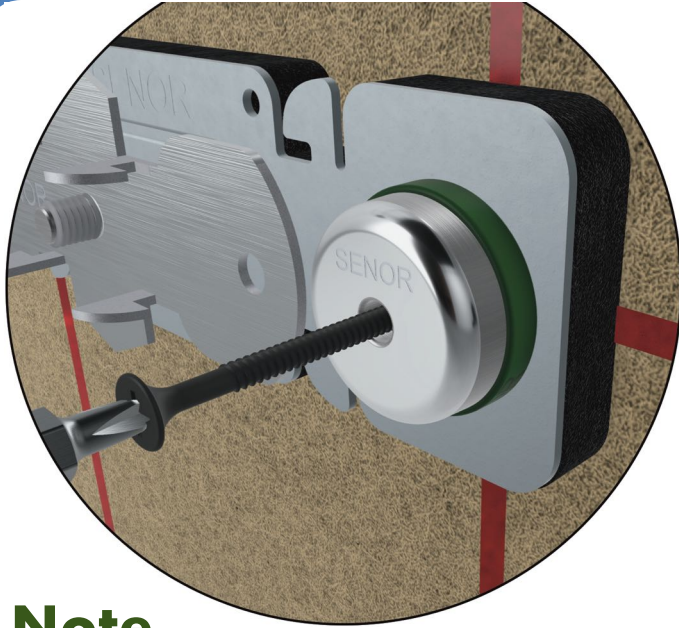
P.T.201531558(6)

Traceability / Date: March 4, 2025

Failure Mode: The test reveals that the steel base plate (B) reaches its elastic limit when exceeding 58.70 kg. Despite this, we continued applying load to the isolator until reaching a total of 148.50 kg, at which point the deformation of the base plate becomes excessive and compromises its structural integrity. We also observed that the ceiling profile fails to detach from the steel leveling plate (E), indicating a solid bond between the two parts. At this point, we decided to conclude the test, officially marking the system's failure. This result is significant as, according to the UNE-EN 13964:2016 standard, the damper is effective and safe for loads ranging from 3 to 25 kg, ensuring its operability in applications within this weight range.



INSTALLATION



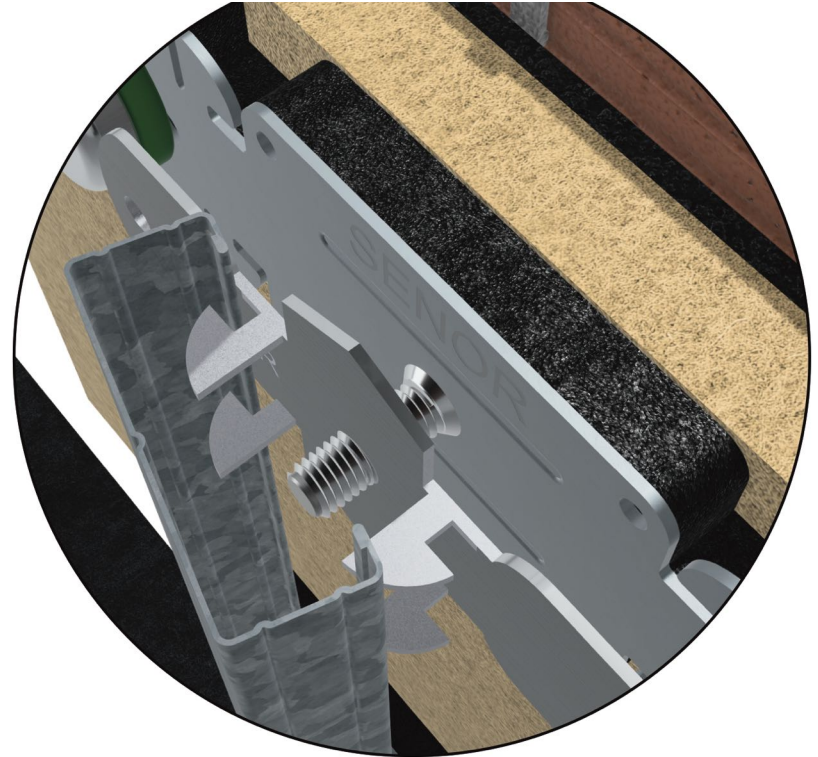
- 1.** We attach the FTD NIVEL-47/TD to the wall using steel screws and Fischer plugs.

- 2.** We insert the TC-45/48 profile onto the FTD NIVEL-47/TD with slight pressure on the anchors (CLIP STOP).

IMPORTANT: The profile must rest on the EPDM CR-130 type BEC acoustic weatherstrips.

Note

SENOR
FTD NIVEL-47/TD. Ideal for addressing wall systems with limited space and alignment issues.



- 3.** Ready to apply the desired ACOUSTIC PANEL SANDWICH.

