

THE NOISE ABATEMENT ASSET

Presentation:

Any mechanical assembly in working order generates vibrations that are source of harmful frequencies.

Finding a solution to this critical drawback, Daniel GASTEL designed and patented a new laminated product called SILENTLINE®* .

SILENTLINE® is a composite of metal and synthetic material, which has the key advantage of spreading the vibrational energy over a dramatically wider band (lower Q factor) - therefore dampening the transmission of potentially destructive harmful frequencies.

Advantages:

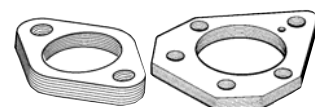
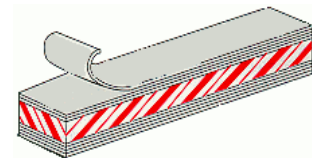
- ★ The cost of SILENTLINE® laminated shims is virtually equivalent to that of shims made of other laminated materials. So there is **no economic obstacle** to their use.
- ★ The **mecanical characteristics** of laminated shims are **improved** with this material. CETIM tested two probes, both in 2 mm thickness :
 - A The first one, of conventional form, entirely consisting of peelable metal leaves: achieved Vickers value = 440 MPA
 - B The second one, manufactured in the new material : achieved Vickers value = 510 MPA.
- ★ The SILENTLINE® laminated shims which thus require less maintenance and are less subject to wear.
- ★ Other asset of this product – and reasons why it was designed :
 - ⇒ it contributes to **improvements** of the **working environment**, of benefit to all users
 - ⇒ it makes it easier to **achieve** the **demands** of **noise abatement legislation**.

Performances:

Tests carried out by CETIM on this new materiel show its capacity to tone down – in a spectacular way – the two consequences of a harmful frequency emission :

- ⇒ absorption or dampening and dispersion of 45 to 50 % of the *AMPLITUDE*
- ⇒ reduction by 50 to 55 % of the *EMISSION DURATION*.

This is therefore a high performance material.



Dimensions of SILENTLINE® products:

MATERIALS	SPECIFIC WEIGHTS	THICKNESSES OF LAMINATIONS (MM)				
		0,01	0,025	0,05	0,075	0,1
Aluminum						
★ 1200	2,8			✓	✓	✓
★ 5052	2,8			✓	✓	
Brass						
★ 2.0321, C27200, C27700, CuZn37, CZ108, CW508L	8,5		✓	✓	✓	✓
Stainless steel						
★ 1.4300, AISI 302, S30200, X10CrNi 18-09, 304S31,	8,2			✓	✓	✓
★ 1.4301, 1.4350, AISI 304, S30400, X5CrNi 18-10 , 304S15, 304S16, 2332, SUS304	8,2	✓	✓	✓	✓	✓
★ 1.4306, AISI 304L, S30403, X2CrNi 19-11, 304S11	8,2			✓	✓	✓
★ 1.4401, 1.4436, AISI 316, S31600, 316S16, 316S33, 2347, SUS316	8,2			✓	✓	✓
★ 1.4404, 1.4435, AISI 316L, S31603, 316S12, 316S13, 2347, SUS316	8,2			✓	✓	✓
Soft steel						
★ 1.1121, C1010, 1010, 040A10, G10100, 1264, S10C	8,2		✓	✓	✓	✓
Titanium						
★ 2TA1, 3.7025, Ti Gr1, R50250, 5832-2	4,5			✓	✓	✓
★ TA 2, 3.7035, Ti Gr2, R50400, 5832-2	4,5			✓	✓	✓

Precision : the SILENTLINE® material is only available from a 2 mm total

As a conclusion:

👉 SILENTLINE® shims can be substituted for any other wedging process:

- ★ they do not have any cost or use inconvenience
- ★ they offer several additional services (notably silence and life duration) which are of paramount importance today.

The various diagrams of tests carried out by CETIM can be supplied on request.