

METALLIC ALLOY WITH HIGH DAMPING PROPERTIES

EXIUM[®] AM

Due to a specific industry need, LBI has developed a new non-ferrous alloy. Thanks to its chemical composition and its production by centrifugal casting, its distinctive characteristic is to offer excellent damping properties for a metallic material (comparable to those of a polymer type material).

Properties of parts in Exium[®] AM:

- **Mechanical properties :**

Rp0,2 > 240 Mpa - Rm > 520 Mpa - A > 30%
Young Modulus : E= 80 Gpa
Torsion Modulus : G= 34 Gpa
Poisson Coefficient: 0,25

- **Damping properties (at 20°C):**

tg ϕ approx. $1,80 \times 10^{-2}$
(Equivalent to $2\pi \sin\phi$ ca. $11,30 \times 10^{-2}$)

Damping of various vibrations:

Longitudinal mode (4,6 khertz), tg $\phi = 1,51 \times 10^{-2}$
Flexion mode (240 hertz), tg $\phi = 1,75 \times 10^{-2}$
Torsion mode (2,7 khertz), tg $\phi = 0,82 \times 10^{-2}$

This material keeps its damping properties between -15°C and +50°C. Below -30°C and above +60°C, its damping properties are similar to those of grey iron.

- **Other properties:**

Very good corrosion resistance

Density: 7.2

Excellent Machinability

