

深絞りプレス加工後の

制振鋼板の制振特性について

The Damping Property of Laminated Damping Steel Sheet after Deep Drawing

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Abstract

The damping property of laminated damping steel sheet is affected by shear deformation of viscoelastic layer, a constraint produced by the mutual slip between two steel sheets under a bending vibration mode. So, the bonding of the viscoelastic layer to steel sheets is critical to the damping property.

Sometimes, laminated damping steel sheet becomes unbonded locally from the viscoelastic layer because of an excessive relative slip between two steel sheets caused by a deep drawing.

It was found that by using the transmittance of ultrasonic wave, the unbonded area of laminated damping steel sheet can be detected without cutting it off. The validity of this method was confirmed by the T-Peel test which was conducted after the sheet was cut off.

The damping property measured at the wall of a deep drawn oil pan, was compared with a one for a laminated damping steel sheet not drawn yet.

It was found that the damping property and the noise reduction effect of a sheet after deep drawing were reduced in reverse proportion to the widening unbonded area.