Polymer Technologies Inc.
Engineering Sound Solutions®

Technical Data Sheet
Materials Specifications For:
ADA
POLYDAMP® Viscoelastic Layer

Description:
POLYDAMP® Viscoelastic Layer (ADA) is an impregnated fibrous material with high quality 3 mil acrylic pressure sensitive adhesive on both sides. It is used to bond two materials in order to make a highly damped, quiet composite. ADA sandwich constructions show improved vibration characteristics and give better transmission loss against airborne noise.

The ADA is intended to be sandwiched between the structure to be damped and an outer panel known as the constraining layer. The thickness of the constraining layer must be matched to the thickness of the basic construction. On flat panels the best damping properties are obtained if the constraining layer is the same thickness as the base structure. Good damping can be achieved with a ratio of thickness of the base material to the constraining layer of 3 to 1.

Typical Acoustical Characteristics:
Metal constructions generally have low internal loss factors. The loss factor is a measure of the amount of vibration energy converted into heat. The composite loss factor is used for multi-layer constructions. The theoretical maximum loss factor is 1. The loss factor of ordinary sheet steel construction is approximately .01. The loss factor of externally damped panels, those using extensional damping pads, rarely exceeds .15. The loss factor of structures using POLYDAMP® ADA and a suitable constraining layer can be as high as .2 to .5.

Technical Data:

Color:	Black
Thickness:	0.083” nominal
Weight:	0.60 lbs/ft^2 ± .08 lbs/ft^2
Temperature Range:	-5ºF to 250ºF

Applications:
In the transportation and marine industries, ADA has been used to improve the acoustical performance of walkways, floors, firewalls and doors. By damping a structure, one also increases the transmission loss which results in less noise being transmitted through the barrier.

ADA can be used with a constraining layer to reduce impact noise and plate resonance. Saws, timber handling equipment, loading bridges, flooring plates, loading platforms, chippers, conveyors, hulls of boats etc. are prime applications for ADA.

Working and Fitting:
POLYDAMP® ADA can be cut with scissors, a knife, razor or die. Remove the release paper and apply ADA to the constraining sheet. Next remove the other release liner and apply the composite to the surface to be damped. For good adhesion all surfaces should be at room temperature. As with all adhesives it is extremely important the surfaces be free of dust, grease and other contaminants.

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The ADA does not serve as a structural adhesive. The constraining layer must be secured to the base material by welds, screws, studs, rivets, etc. There should be some relative movement in the construction to achieve optimum damping. Therefore bolts or screws are preferred over a welded assembly. Bolts, screws or other methods of attachment should have an 8 inch to 20 inch spacing between attachment points. Too little spacing will make the assembly too rigid.