BASF Aerospace Materials

Lightweight Composite Load Panel

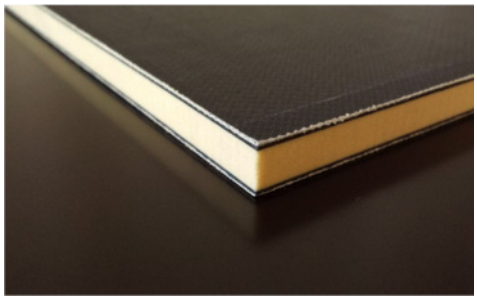
Providing 40% weight savings over current standard design

BASF
The Chemical Company

Product Data Sheet

Overview

BASF has developed materials for composite load panels for use in applications such as cargo containers, pods, or aircraft flooring using BASF Baxxodur® latent cure epoxies, Melapur® flame retardants, polyurethane basic products, and colorants.



Contents

- High density polyurethane foam core
- Composite panel comprised of carbon fiber, glass, or polyaramid
- Manufactured using Baxxodur latent cure infusion epoxy system
- Formulated to be flame retardant to meet Federal Aviation Requirements (FAR) 25.853 fire specifications

Weight Savings Example: Cargo Container Flooring

The prototype composite panel was incorporated into an AMJ style air cargo container, and it was the first composite AMJ Unit Load Device (ULD) to receive Technical Standard Orders (TSO) certification. This product is 40% lighter than the incumbent all aluminum honeycomb cargo container flooring and can support a 4,200 psi compressive load.

The prototype floor is designed to be part of a box structure and further data is still being generated. Panel properties can be altered by changing the foam density, thickness, and construction to meet the desired requirements.

	Average density (lbs/ft³)	Weight per area (lbs/ft²)	Flexural strength peak stress (psi)	Modulus (psi)
Industry Standard*	66.20	2.70	—	—
Aramid, S-Glass	50.69	2.11	25,661	1,720,013
Aramid, E-Glass	52.05	2.17	18,936	1,474,340
Aramid, Carbon	49.62	2.07	26,916	2,264,654

Above values are shown as typical values and should not be used as specifications.

Passes FAR 25.853 vertical burn tests.

*Data from aluminum pallet manufacturer (non-honeycomb) with similar product application as composite panel.

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