



## Lightweight Stow Bin Latch Cover for Boeing 777X, 787 and 747-8I Aircrafts

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Toray Cetex® Thermoplastics for Aircraft Interiors

Harper Engineering (Seattle, USA) has developed a lightweight thermoplastic Stow Bin Latch Cover, replacing the traditional aluminum sheet metal solution, for installation in pivot bins for commercial aircraft. The composite solution builds on the success of Harper Engineering, and is made using Toray Cetex® TC1000 (G/PEI) glass-fiber-reinforced thermoplastic laminates. The Stow Bin Latch Cover is already installed across all Boeing 777X, 787 and 747-8I Aircrafts.

Utilizing Harper Engineering's innovative product design, the cover is certified to end customer specifications, whilst meeting strenuous durability, impact, humidity, flammability and safety requirements. The part is rapidly thermoformed in cycles spanning less than 2 minutes, resulting in an integrally-stiffened, highly durable, one-piece thermoplastic composite part.

- ▶ Lightweight (up to 48 kg/105 lbs saved on standard layout of Passenger Accommodations) compared to aluminum component
- ▶ Through thickness color to increase wear resistance
- ▶ Impact performance
- ▶ Increased safety – high-friction rub strips for baggage retention and durability

## Toray expert services

During the development of the Stow Bin Latch Cover for the Boeing 787, Harper Engineering worked closely with Toray's Expert Services teams in both the Netherlands and the USA to develop the concept from feasibility to full-rate production. This included:

- ▶ Supply of customized reinforced thermoplastic laminates, in multiple configurations during Harper Engineering's development phase
- ▶ Tailored color solution, integrated to suit Harper's specifications
- ▶ Prototype development design guidelines

- ▶ Facilitated process optimization to achieve production volume targets, including preparation of blanks
- ▶ Supporting Harper Engineering in forming proof of concept parts in our Research and Development Lab presses including processing parameters

## Toray Cetex® TC1000

Toray Cetex® TC1000 Design is a cost-effective material solution for aircraft interior applications.

- ▶ Excellent FST performance (OSU <15/15)
- ▶ Tailored color solution to customer specification
- ▶ Improved impact/mechanical performance against aluminum solution
- ▶ Rapid processing with cycle times <3 mins
- ▶ Range of textures available from gloss, matt, brushed, and anti-slip
- ▶ Very low moisture absorption
- ▶ Good solvent resistance

## About Harper

Harper Engineering has been supporting the aircraft interiors industry with high-quality, highly engineered assemblies for 50 years. With a team of engineering professionals skilled in mechanical design, manufacturing, composites, and processes, Cabin Interior Integrators routinely grant Harper with design authority to solve their difficult problems. Learn more at [www.HarperEngineering.com](http://www.HarperEngineering.com)

