

DuPont Automotive

Innovation Spotlight: DuPont™ Hytrel®



Six-speed Transmission Baffle Assembly

Application

A thermoplastic elastomer (TPE) single-assembly, six-speed transmission baffle assembly, replacing the incumbent cast aluminum and rubber baffle material. Developed by the Ford Motor Company for use on its 2018 Ford Focus.

Unmet Need

Material improvements to transmission baffle assembly components offer opportunities for weight reduction, cost reduction and improved fuel efficiency, as well as noise, vibration and harshness (NVH) improvements.

Challenges

- Ability to seal against cast aluminum surfaces.
- Improved ease of assembly.
- Significant design constraints, including tight dimensional tolerances.

Solution

The part was produced using a one-step injection molding process, enabling integrated seal elements capable of sealing with a cast surface. Snap-fit assembly behavior allows the part to effectively seal five areas.

The baffle assembly:

- Enables reduced chain and gear sprocket drag
- Improves fuel economy
- Enhances fluid passage to the sump for reduced pump whine noise
- Reduces costs by approximately \$1.00 per vehicle versus incumbent material
- Reduces weight by 220g (> 50%) over current design

DuPont Material Chosen and Why

DuPont™ Hytrel® was chosen for this application because it offers:

- Toughness and resilience
- Creep resistance
- Wide temperature range
- Resistance to transmission chemicals



For more information on the Assisted Positive Locking Junction Box and other SPE award winners and finalists, visit the [SPE Automotive Innovation Awards website](#).

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