

**3M** Science.  
Applied to Life.™

3M™ Friction Shims  
for automotive applications

# Secure critical joints in your chassis and powertrain designs

Boost performance, reliability and design freedom in one package. Handle high force loads in static joints and boost torque transfer in torsional joints. 3M™ Friction Shims make it possible.



## Applications

3M™ Friction Shims are used in chassis and powertrain designs in electric, hybrid and ICE vehicles. They enhance the coefficient of static friction in bolted joints by up to 5× for improved performance and reliability at peak loads.

In chassis, 3M™ Friction Shims help mitigate stress from heavy components such as EV batteries. They also facilitate downsizing by allowing smaller bolts to withstand high force loads. In powertrains, they boost torque transfer to help joints handle high power outputs from advanced eMotors and ICEs. They even expand design freedom by opening the door to new configurations such as skateboard platforms and pancake motors.

Over 250 million 3M™ Friction Shims are in use in vehicles worldwide without a single known reported field failure.

## Key benefits



Handle high shear forces



Boost torque transfer



Manage component weight



Mitigate NVH



Expand design freedom



Enhance reliability

## Typical coefficients of static friction

### Cast Iron / Steel

0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8



Cast iron / high tensile steel no 3M™ Friction Shim



Cast iron / high tensile steel with 3M™ Friction Shims



Cast iron / cast iron with 3M™ Friction Shims



Cast iron / case-hardened steel with 3M™ Friction Shims

### E-Coated Steel / Aluminum

0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8



E-Coated steel / Aluminum no 3M™ Friction Shim



E-Coated steel / Aluminum with 3M™ Friction Shims

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