Vacuum Brake Tubes

OEM/Vehicle
General Motors Co.
2016 Chevrolet Silverado & GMC Sierra

System Supplier
Cooper Standard

Material Processor
Cooper Standard

Material Supplier
DSM Engineering Plastics

Resin
Arnitel CM622 TPC-ET

A high-performance thermoplastic was needed for vacuum brake tubing to replace reinforced rubber. It needed broad temperature performance (-40-150°C), chemical resistance, burst strength to 60 bar min. and flexural strength to 50 N min. It also had to resist vacuum collapse after 2 hr @ 150°C and provide impact retention after 336 hr @ 150°C. The design was changed to use a smaller diameter, thinner wall to simplify engine/undercarriage routing and eliminate heat shields plus allow quick connects. A TPC-ET elastomer with high thermal oxidative stability was developed. It is 30% lighter, less costly, and eliminates brackets.