TenCate offers an innovative suite of advanced composites for a broad range of engine and propulsion applications:

- Surfacing films
- Compression molded parts
- Lightning strike surfacing materials
- High temperature thermoplastics
- Toughened thermosets

1. On aircraft engines, the rear section is typically constructed with high temperature materials such as nickel alloys, titanium, or ceramics. With the introduction of polyimide-based, ultra-high temperature composites, these components can now be fabricated to reduce weight while maintaining temperature performance up to 371°C (700°F). TenCate, through its partnership with P2SI®, has a complete line of polyimide-based materials, and currently supports the F-35 program with the AFRPE®-4 variant, for applications including guide vanes, high temperature ducts, stators, and a variety of other applications.

2. Fan cowl doors and panels made with toughened epoxy prepregs will withstand long-term heat exposure from the engine. TenCate’s TC275-1 and TC350-1 are excellent options for these components.

3. The acoustic liner on the front end of the engine’s Nacelle inlet has the purpose of absorbing the high pitch sounds from the front turbine. TenCate supplies a proprietary, perforated PEI-based carbon fiber composite laminate for acoustic lining applications within the front of the engine housing. This solution is currently used on the Airbus A380 engine.

4. The thrust reverser area of the engine is exposed to short-term, high-heat environments. TenCate’s thermoset solutions include toughened epoxy systems such as TC350-1, BMI systems such as RS8-HT, and thermoplastic solutions made with PEEK, PEKK, or PPS resin systems.
TenCate Cetex® Thermoplastic Parts
– Acoustic Liner, Pylon Access Doors, Ribs/Stringers.

Compression Molded Parts – TenCate’s CCS composites group is one of the industry leaders in developing and fabricating molded parts using bulk molding compounds, made with both thermoplastic and thermoset materials. This process is ideal for the replacement of machined aluminum components with a lighter weight, more cost-effective solution. These parts can be fabricated into nearly any geometry, and can be fabricated with in-molded fasteners and gaskets.

Surfacing Films – TenCate’s surfacing films are used to improve durability, paint-ability, and aesthetics of composite surfaces. These materials are also offered with lightning strike foils and meshes. Products include TC235SF-1, TC235SF-LS, and TC263.

High Temperature Thermoplastic Brackets and Clips
– TenCate currently supports a number of production applications for carbon fiber/PEEK prepregs, molded into a range of clips and brackets throughout the engine for weight reduction.

Acoustic Liner – TenCate supports a unique, proprietary application with Airbus for the application of Cetex PEI-based carbon fiber composite laminates, perforated for acoustic dampening, which substantially reduces engine noise for passengers.