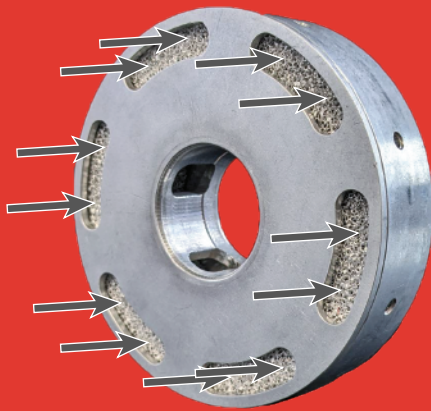


Save oil and meet emission goals with Duocel®

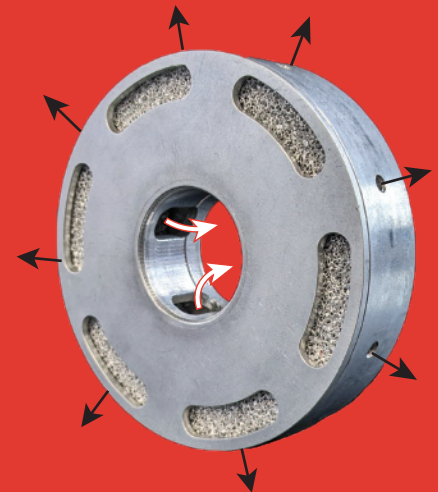
Duocel® foam separates engine oil more efficiently over all stages of flight compared to conventional air-oil separators



Air-oil mist from the engine enters air-oil separator (AOS) before venting to the environment



The rotating AOS impedes the path of the mist, turning it into clean air and liquid oil



Liquid oil is spun out and recovered in the gearbox, and clean air exits to the environment with minimal oil loss

Better separation

Testing has shown 2000x better separation than competing technology

Effective at all flight stages

Duocel® recovers more oil at all engine conditions

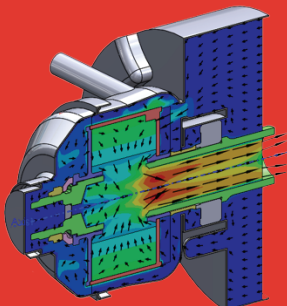
Environmentally friendly

Better separation means cleaner exhaust

Flight Proven

We've delivered over 1,000 production units across several gearbox designs

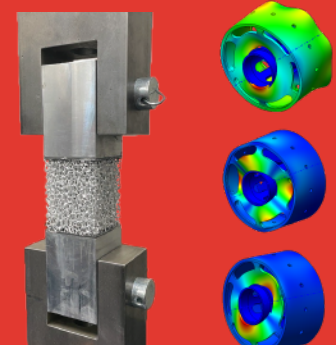
Custom design support



Flow simulation



Testing and verification



Structural analysis

More About Duocel®

Duocel® is an open-celled rigid foam with solid ligaments and optimized properties for your design.

Base material



Aluminum



Copper

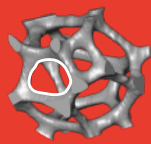


Carbon



Silicon Carbide

Pore Size

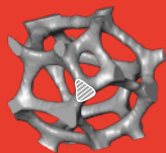


100 PPI
(~0.01")



5 PPI
(~0.20")

Ligament cross-section



3%



6-8%



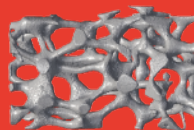
10-12%



15%

Relative Density

Compression



Uncompressed



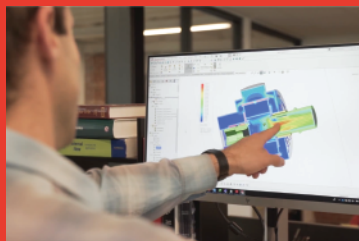
Compressed

ERG Engineering

With over 50 years of expertise designing and manufacturing foam components, we tailor Duocel® to your design for maximum performance.

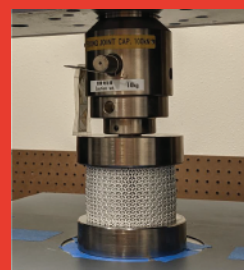
Design Optimization

- Thermal conductivity
- Crush strength
- Pressure drop
- Surface area
- Operating temperature
- Electrical conductivity
- Corrosion resistance

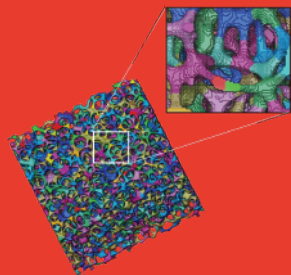


Testing

- Compressive and tensile testing
- Shock and random vibration
- Proof and burst pressure
- Thermal cycling
- microCT scanning
- Single and two-phase heat transfer

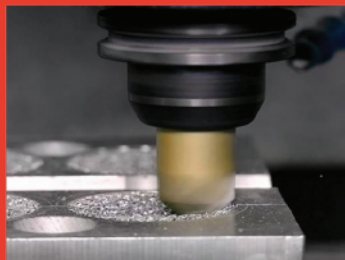


Manufacturing Advantage



Better strength and conductivity

Unlike metal foam produced through other methods, Duocel® has solid ligaments with fully developed grain boundaries.



Flexible fabrication

Duocel® metal foam can be machined, formed, brazed, soldered, anodized, and coated.

Flight Proven

ERG Aerospace produces TRL-9 Duocel® components for various applications, including Mars landers, satellites, and commercial and military aircraft.

- 2019 UTC Supplier Gold
- 2019 Pratt & Whitney Most Innovative Supplier
- 2018 IHI Supplier of the Year
- 2017 Pratt & Whitney Service-Disabled Veteran Owned Supplier of the Year

