

**YOUR PARTNER IN THE FUTURE OF FLIGHT**

For more than three decades, Victrex has collaborated with customers to help turn their toughest challenges into tangible benefits. Our proactive approach in monitoring the trends of the Aerospace industry and engaging in open dialogue with industry leaders enables us to deliver what is required to maximize performance today and tomorrow. This philosophy has led to Victrex solutions flying on more than 15,000 aircraft today.

A company with cutting-edge polymeric solutions, streamlined production facilities, application development expertise, unmatched technical support and a presence across the globe — that's a future performance partner.

**CHANGING THE EQUATION IN AEROSPACE COMPOSITES**

**VICTREX AE™ 250 COMPOSITES FOR THE AEROSPACE INDUSTRY**



**World Headquarters**  
**Victrex plc**  
 Hillhouse International  
 Thornton Cleveleys  
 Lancashire FY5 4QD  
 United Kingdom

TEL + (44) 1253 897700  
 FAX + (44) 1253 897701  
 MAIL victrexplc@victrex.com

**Americas**  
**Victrex USA Inc**  
 300 Conshohocken State Road  
 Suite 120  
 West Conshohocken, PA 19428  
 USA

TEL + (1) 800-VICTREX  
 TEL + (1) 484-342-6001  
 FAX + (1) 484-342-6002  
 MAIL americas@victrex.com

**Europe**  
**Victrex Europa GmbH**  
 Langgasse 16  
 65719 Hofheim/Ts.  
 Germany

TEL + (49) 6192 96490  
 FAX + (49) 6192 964948  
 MAIL customerservice@victrex.com

**Japan**  
**Victrex Japan, Inc.**  
 Mita Kokusai Building Annex  
 4-28, Mita 1-chome  
 Minato-ku  
 Tokyo 108-0073  
 Japan

TEL + 81 (0)3 5427 4650  
 FAX + 81 (0)3 5427 4651  
 MAIL japansales@victrex.com

**Asia Pacific**  
**Victrex High Performance**  
**Materials (Shanghai) Co Ltd**  
 Part B Building G  
 No. 1688 Zhuanxing Road  
 Xinzhuang Industry Park  
 Shanghai 201108  
 China

TEL + (86) 21-6113 6900  
 FAX + (86) 21-6113 6901  
 MAIL scsales@victrex.com

Victrex is an innovative world leader in high performance polymer solutions with products sold under the brand names of VICTREX® PEEK, VICOTE® Coatings, APTIV® film and VICTREX Pipes™. With production facilities in the UK backed by sales and distribution centers serving more than 30 countries world-wide, our global sales and technical support services work hand-in-hand with OEMs, designers and processors offering assistance in the areas of processing, design and application development to help them achieve new levels of cost savings, quality, and performance.

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# FUTURE PERFORMANCE OF AEROSPACE COMPOSITES


With more than 35,000 new aircraft needed over the next 20 years, the entire Aerospace industry supply chain faces the pressure of delivering planes at a much more cost-effective and rapid pace. One key to achieving this is the replacement of metal and thermosets with next-generation thermoplastic composite solutions. VICTREX AE™ 250 composites, a line of PAEK, carbon fiber-based unidirectional tape and laminates, enable engineers to utilize our game-changing hybrid molding technology. Exclusively made possible due to its unique processing temperature, VICTREX AE™ 250 composites allow for the overmolding of a continuously-reinforced composite with fiber-reinforced VICTREX® PEEK injection molding polymers. **Revolutionary aerospace composites delivering an unmatched combination of cost reductions, weight savings, design freedom, strength and production speed – that's future performance.**

## PERFORMANCE BENEFITS


**5x** 

**UP TO FIVE TIMES\* HIGHER SPECIFIC STRENGTH VS. METAL**


\*VICTREX® PAEK composites have exhibited up to 5x higher specific strength than Steel AISI 4130. Improvements also achievable vs. Titanium TA6V, Aluminum, 7075-T6, Magnesium ZK60A-T5, (Metals data from CES selector 2012, Granta Design. Polymer data from Manufacturer)

 **Faster installation** vs. metal due to smarter designs and parts consolidation

 **Improved damage tolerance** vs. thermosets

 **Lower flame/smoke/toxicity emissions** vs. thermosets

 **Improved fatigue performance** vs. thermosets

 **Improved corrosion and chemical resistance** vs. metal and thermosets

 **Better thermal insulation** vs. metal

**60%** 

**UP TO 60%\* WEIGHT SAVINGS VS. METAL**


\*VICTREX® PAEK composites have exhibited up to 60% weight savings vs. Steel AISI 4130. Savings also achievable vs. Titanium TA6V, Aluminum, 7075-T6, Magnesium ZK60A-T5, (Metals data from CES selector 2012, Granta Design. Polymer data from Manufacturer)


## PROCESSING BENEFITS

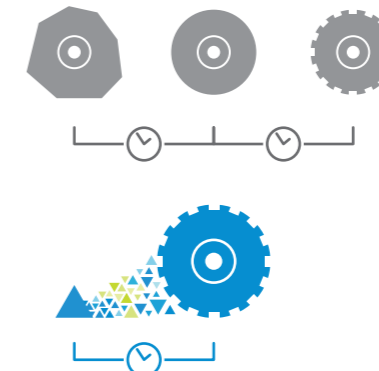


**LOWER TOTAL SYSTEM COSTS\* VS. METAL**

\*Metals typically require multiple secondary operations, significant capital investment in equipment, high labor and energy costs, and generate high amounts of scrap. VICTREX® PAEK composites offer greater design freedom and more efficient processing.


 **Optimized buy-to-fly ratio** vs. metal and thermosets


 **Lower processing temperature** and energy requirements than PEEK



**REDUCE CYCLE TIMES\* VS. METAL AND THERMOSETS**

\*Metals typically require multiple secondary operations whereas thermosets require a lengthy autoclave process. VICTREX® PAEK composites offer greater processing freedom and can be produced out-of-autoclave.

 **Design freedom** for part consolidation and optimization


 **Enables out-of-autoclave processing** and use of existing equipment



**100%\* RECYCLABLE WITH UNLIMITED SHELF LIFE**

\*VICTREX® PAEK composites are fully recyclable unlike thermosets. Metals typically maintain a very high scrap rate.

 **Safety** and environmentally compliant

 **Part consolidation** for ease of installation and increased throughput

## POTENTIAL APPLICATIONS

