



Engineering Better Material Solutions

SURMET CORPORATION

31 B Street,
Burlington MA 01803
☎ (781) 272 3969 ☒ Fax (781) 272-9185
www.surmet.com

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Surmet Achieves Major Milestone on its ALON[®] Window Scale-up Program

Surmet has successfully delivered 18x35-in size monolithic ALON[®] windows, achieving a major milestone on its scale-up program supported by US Dept. of Defense funding from DMS&T, Air Force ManTech and DPA Title III programs. These windows, designed to meet a particular high priority defense application, are the largest transparent ceramic armor windows produced anywhere in the world. These ALON windows will now be laminated and incorporated into the defense system by a Major Defense Contractor.



18x35-in finished ALON[®] Window on display

Producing the windows in this size and transitioning them into the defense system represents both technical and programmatic success for Surmet and its DoD funding partners. But this is only half way into the program and the goal of the scale-up program is to produce 36x36-in ALON windows by the 3rd Quarter of 2014.

ALON[®] Optical Ceramic combines broadband transparency with excellent mechanical properties and environmental durability. ALON's cubic structure means that it is transparent in a polycrystalline form, allowing it to be manufactured by powder processing techniques that are suited for scalability in size and production volume. Surmet has established a vertically integrated robust manufacturing process, beginning with synthesis of ALON powder, continuing through forming/heat treatment of blanks, and ending with optical fabrication of ALON windows. All of these processes are now scaled up to produce these very large ALON windows.

ALON[®] transparent armor represents the state of the art in protection against armor piercing threats, offering a factor of two in weight and thickness savings over conventional glass armor. Surmet has produced tiled and monolithic ALON windows and demonstrated 2x performance benefit against a range of ballistic threats. Surmet is supplying lightweight ALON transparent armor for aircraft and helicopter systems.

Large ALON windows are also of interest for Visible to Midwave Infrared (MWIR) sensor applications. These applications often have challenging imaging requirements which in turn require that these large windows have optical characteristics including excellent homogeneity of index of refraction and very low stress birefringence. Surmet is supplying large **ALON[®] sensor windows** with refractive homogeneity to the tune of 4 ppm, meeting the exacting requirements for reconnaissance systems.

Founded in 1982, **Surmet Corporation** is an Advanced Materials Technology and Solutions company, with a vertically integrated manufacturing capability for ALON[®] and Spinel optical ceramic products. Surmet is headquartered in Burlington, MA and has R&D and manufacturing facilities in Buffalo, NY and Murrieta, CA. Surmet's optical ceramics capabilities are built through significant amount of company's investment and government funded programs over the last ten years.

To learn more or to find out what Surmet can do for you, please visit our website www.surmet.com.

Surmet thanks the US DoD for their funding support that has enabled us to commercially supply 18x35-in. size ALON windows for defense systems.