

SPECIALTY FILM & SHEET

STYLE AND CLEAR VISIBILITY WITH VANDALISM PROTECTION



APPLICATION

Bus window glazing

PRODUCT

Storm-Tite Flush Window Systems

MANUFACTURER

AROW Global

KEY CHALLENGES

Design a stylish, lightweight and durable window that meets mass-transit regulatory requirements and reduces the frequency of window replacement due to damage

SOLUTIONS

The use of LEXAN™ MARGARD™ sheet from SABIC instead of glass

RESULTS

Replacement of windows due to vandalism drop to near-zero per month and regulatory adherence remains intact

CHALLENGES

AROW Global specializes in the design and production of transportation window systems for the North American mass transit market. As a solutions-driven company, AROW set out to design a lightweight window system that was aesthetically appealing with high optical clarity, was easy to install and maintain and would adhere to the stringent performance and regulatory standards expected by mass transit OEMs and withstand significant vandalism and abuse associated with many operating environments.

SOLUTION

AROW Global engaged the help of SABIC team to assist in the design, qualification and production of the Storm-Tite Flush Window System using the LEXAN MARGARD sheet. Regal Plastic Supply, SABIC's authorized distributor, provided fabrication and production expertise throughout the development process.

SOLUTION (continued)

The system was built and tested in accordance with FMVSS 217 guidelines and conforms to all applicable ANSI Z26.1 requirements. LEXAN™ MARGARD™ sheet is a hard-coated polycarbonate material that offers excellent abrasion and impact resistance and optical clarity. This virtually unbreakable product from SABIC is an excellent candidate for heavy-duty vehicle window glazing applications. Potential product benefits for this specific application included:

- Half the weight of glass
 - Resulting in an approximate 300 lb weight reduction per 40' bus which improves fuel efficiency and battery life, increases passenger capacity, and enables easier window handling during installation and maintenance
- Impact resistance 250 times greater than glass
 - The high strength of polycarbonate results in a huge reduction in window damage and the associated cost for repair and replacement
- Available custom colors and tints
 - Customizable color and visible light transmittance permit the user to optimize passenger comfort and achieve a desired aesthetic

RESULTS

The Storm-Tite Flush Window Systems with LEXAN MARGARD sheet offer great durability and reliability throughout the life cycle of the bus. Review of 3-4 year old window systems in the field show outstanding performance with respect to clarity and color consistency, mar and scratch resistance, dimensional stability and overall in-service performance. A major transit authority in the U.S. has implemented the Storm-Tite Flush Window Systems with LEXAN MARGARD sheet since 2012 within their fleet. A representative of the transit authority has stated:

- Safety of passengers significantly improved compared to glass options
- Incidents of window damage requiring replacement have been reduced from approximately 60 per month to near zero and window optical clarity has remained intact
- Buses equipped with LEXAN MARGARD sheet remain in service versus sitting idle for several weeks awaiting glass or glass window system replacement
- Significant man-hours saved in window maintenance

FURTHER INFORMATION

WEBSITES

www.sabic.com/sfs
www.arowglobal.com
www.regalplastic.com

CONTACT US

Middle East and Africa
T +966 (0) 1 225 8000
E info@sabic.com

Americas
T +1 800 323 3783 (Toll free)
T +1 413 448 6655
E Spinside.sales@sabic.com

Europe
T +31 164 293678
E sfs.info@sabic.com

Asia Pacific
T +86 21 2037 8188
E asiaproductinquiries@sabic.com

Media Inquiries
E media.inquiries@sabic.com