

PROVEN TO SOLVE SEALING AND SURFACE PROTECTION CHALLENGES

Gore offers a portfolio of commercially available material sets, forms, and sizes engineered with a wide range of unique properties and specifications. GORE® SKYFLEX® Aerospace Materials are proven to solve well-known sealing and surface protection challenges, including abrasion, corrosion, and gap-filling (Table 1). They can be used in many application environments, such as exposure to fuels and other aviation fluids. These materials are approved for use on multiple civil, defense, and fixed/rotary wing aircraft and are routinely specified by leading OEMs.

Our tapes and gaskets are lightweight, flexible, and easy to install in less time. They are often used as an alternative to form-in-place (FIP) seals because they simplify aircraft assembly with reusable seals that can withstand multiple open/close cycles to help reduce lifecycle costs.



Benefits

- Portfolio of unique material sets, forms, and sizes designed for many applications
- Reliable and predictable surface & corrosion protection, sealing, and gap-filling with highly conformable materials
- Proven to resist vibration, abrasion, fuels, chemicals, fluids, and wide temperatures
- Low environmental impact and improved safety with non-hazardous materials
- Easy-to-use materials with no mess or curing required to support design goals for manufacturing
- Reduced lifecycle costs with reusable seals over multiple open/close cycles
- Approved for use on multiple civil, defense, and fixed/rotary wing aircraft

Typical Applications

- Access panels (wing, fuel, LE/TE & dry bay)
- Floorboards (cargo & passenger area)
- Structure (cargo & passenger area)
- Engine cowlings
- External fuel tanks
- Fairings
- Fuel bladder cavities
- Helicopter tail boom covers
- Wing D-Nose
- Lighting assemblies

GORE® SKYFLEX® Aerospace Materials

Tapes and Gaskets

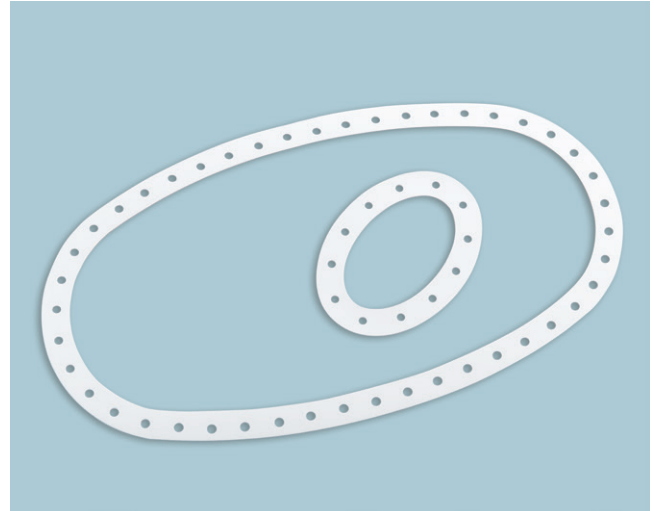
Reliable & Predictable Performance

Aircraft faying surfaces on leading edges and fairings are subjected to mechanical forces and demanding environments that can cause structural damage from abrasion and corrosion. Fuel and access panels require sealing and surface protection against harsh contaminants, regardless of multiple open/close cycles. Therefore, selecting the right interfay material is critical to the success of aircraft production and operation.

Large fairings and panels frequently have significant variations in piece-to-piece consistency due to manufacturing tolerances that lead to gaps where they meet the structure. Highly conformable GORE® SKYFLEX® Aerospace Materials provide reliable and predictable performance when sealing these gaps and other irregular surfaces (Tables 2 and 3).

Unlike liquid sealants, Gore's materials remain in place under compression and do not squeeze out. They provide a durable barrier between faying surfaces and seal against contaminants to protect structures and corrosion-inhibiting coatings on surfaces from abrasion, vibration, and contaminants. With different material properties and sizes, our tapes and gaskets provide design engineers with many options to achieve the desired performance in applications with widespread parameters.

Traditional materials used on aircraft can break down or become brittle when exposed to UV radiation or liquids commonly used in aerospace environments — including fuels, petroleum and phosphate-based hydraulic fluids, engine oils, and de-icing fluids. We offer a wide range of standard and custom solutions that reliably seal and protect against these liquids and UV radiation. For example, our 520 and 720 Series gaskets protect against jet fuels.



The 720 Series of GORE® SKYFLEX® Aerospace Gaskets protect against jet fuels.



The 700 Series of GORE® SKYFLEX® Aerospace Tapes provides reliable environmental sealing & surface protection performance.

Quick & Easy Installation

GORE® SKYFLEX® Aerospace Materials are considerably faster and easier to install than FIP seals because they only require a few steps without any special equipment or training. They eliminate curing time for sealing and protective materials, reducing manufacturing cycles and direct maintenance time. They also maintain their protective performance over multiple open/close cycles for fewer replacements and re-work of seals, significantly saving personnel time during production and maintenance.

Unlike traditional two-component materials, Gore's dry tapes and gaskets require no mixing, masking, or clean up after installation. Their non-hazardous properties reduce environmental impact and disposal costs, and improve safety for installers.

Gore Materials Technology & Expertise

We engineer GORE® SKYFLEX® Aerospace Materials with a unique proprietary material. Using Gore's exceptional material science expertise, we manipulate this material to deliver characteristics including density, strength, and compression response that are necessary for the reliable, long-lasting sealing and easy installation that GORE® SKYFLEX® Aerospace Materials

provides. Our proprietary processes ensure that these properties are consistent along the length of tape and with each gasket.

Gore develops products and technologies that address complex challenges. Through close collaboration with industry leaders across the globe, Gore uses its advanced material science expertise to enable products and processes that are safe, clean, productive, reliable, durable and efficient across a wide range of demanding environments.

Comprehensive Applications Support

Gore's global team of application engineers work closely with you to help evaluate the parameters of your specific application and recommend the appropriate series of GORE® SKYFLEX® Aerospace Materials. We evaluate the material function, operating environment, and faying surfaces to determine compressive forces, gap tolerances, and required material properties. We also evaluate compression curves and our different material properties to determine the appropriate tape or gasket, form thickness, and adhesive for your application to ensure they perform as expected in real-world conditions.



GORE® SKYFLEX® Aerospace Materials are faster and easier to install compared to FIP seals.

GORE® SKYFLEX® Aerospace Materials

Tapes and Gaskets

Table 1: Comparison of GORE® SKYFLEX® Aerospace Materials

Properties	Material Sets						
	100 Series	110 Series	200 Series	500 Series	520 Series	700 Series	720 Series
Purpose							
Abrasion/Anti-Chafe Protection	+	+	+	++	++	++	++
Corrosion Protection ^a	+	+	+	+	+	+	+
Environmental Sealing	+	+	+	+	+	+	+
Gap-Filling	+	+	+	+	+	+	+
Jet Fuel Sealing					++ (Gasket only)		++ (Gasket preferred)
Application							
Low Compressive Forces	++	++	++	+	+	+	+
High Compressive Forces	+	+	+	++	++	++	++
Vibration	+	+	+	++	++	++	++
Frequent Opening/Access	+	+	+	++	++	++	++
Aviation Fluid Exposure ^b	+	+	+	+	+	+	+
Jet Fuel Sealing ^c					++		++
Best Uses	Big gaps, low compressive forces	Big gaps, very low compressive forces	Gap-filling	Large Gaskets	Large Fuel Gaskets	Most applications, especially high vibration or repeated access	Areas with repeated exposure to hydrocarbons
Forms	Flat Tape	Ribbed tape	Flat Tape	Gasket	Gasket	Flat Tape/Gasket	Flat Tape/Gasket

a. Protection of applied corrosion-inhibiting compounds on surface from scratching, protection of surface from standing fluids, and isolation of dissimilar materials (galvanic).

b. Tested per AMS3255 Fluid Stability Requirements.

c. Tested per AMS3255 Liquid Sealability Requirements.

Table 2: Specifications of GORE® SKYFLEX® Aerospace Tapes^a

Properties	Material Sets				
	100 Series	110 Series	200 Series	700 Series	720 Series
Mechanical					
AMS3255 (Class/Type)	2/1	1/1	2/1	2/2	5/2
Uncompressed Thickness ^{d,e} mm (nom.)	0.3, 2.0	0.5 ^f , 1.5 ^f	1.0, 1.65, 3.17	0.3, 0.5, 0.6, 0.8, 1.0, 1.4	0.4, 0.6, 0.8, 1.2
Density ^d g/cm ³ (nom.)	0.5	0.5	0.6 to 1.1	0.5 to 0.7	0.9
Popular Widths ^g mm	25, 36, 50, 80	21, 28, 33, 41	25.4, 38.1, 50.8	25, 36, 50, 80	25, 36, 50, 80
Low-Temperature Flexibility	Passed per AMS3255				
Storage					
With Adhesive	2 years				
No Adhesive	10 years				
Material	engineered/expanded Polytetrafluoroethylene (ePTFE)				
Color	Gray	Gray	White	White	White
Environmental					
Temperature Capability ^{b,c,d} °C (°F)	-73 to +260 (-100 to +500)	-73 to +260 (-100 to +500)	-73 to +260 (-100 to +500)	-73 to +260 (-100 to +500)	-65 to +180 (-85 to 356)
Chemical Exposure ^b	No degradation				
Flammability ^a	Passed per ABD0031 and FAR 25.853				
UV Exposure	No degradation				
Environmental Regulation/ Disposal	Non-curing and non-hazardous with no special waste handling required. Download safety information available at gore.com/skyflex .				

a. Test method details available upon request.

b. Tested per AMS3255 Fluid Immersion and Thermal Stability.

c. Operating temperature range is dependent upon application & adhesive specified.

d. Material without adhesive.

e. Thickness measurements are for reference only. Compressed thickness dependent upon available compression force. Contact Gore for available Compression Curves.

f. Thickness measurement performed in flat area between ribs

g. Customized widths based on application requirements available

GORE® SKYFLEX® Aerospace Materials

Tapes and Gaskets

Table 3: Specifications of GORE® SKYFLEX® Aerospace Gaskets^a

Properties	Material Sets			
	500 Series	520 Series	700 Series	720 Series
Mechanical				
AMS3255 (Class/Type)	4/1	5/1	4/2	5/2
Uncompressed Thickness, ^{d,e} mm (nom.)	0.5, 1.0, 1.6, 2.0, 3.2	0.55, 0.9, 1.4	0.3, 0.5, 0.6, 0.8, 1.0, 1.4	0.4, 0.6, 0.8, 1.2
Weight Per Area ^d g/m ² (nom.)	312, 624, 998, 1248, 1997	550, 935, 1540	140, 220 400, 385, 475, 620	370, 575, 750, 1020
Density ^d g/cm ³ (nom.)	0.6	1.1	0.5 to 0.7	0.9
Maximum Dimensions mm	1500 x 1500	1250 x 1250	482 x continuous	457 x continuous
Low-Temperature Flexibility	Passed per AMS3255			
Storage				
With Adhesive	2 years			
No Adhesive	10 years			
Material	engineered/expanded Polytetrafluoroethylene (ePTFE)			
Color	White			
Environmental				
Temperature Capability ^{b,c,d} °C (°F)	-73 to +260 (-100 to +500)	-65 to +180 (-85 to +356)	-73 to +260 (-100 to +500)	-65 to +180 (-85 to +356)
Chemical Exposure ^b	No degradation			
Flammability ^a	Passed per ABD0031 and FAR 25.853			
UV Exposure	No degradation			
Environmental Regulation/Disposal	Non-curing and non-hazardous with no special waste handling required. Download safety information available at gore.com/skyflex .			

a. Test method details available upon request.

b. Tested per AMS3255 Fluid Immersion and Thermal Stability.

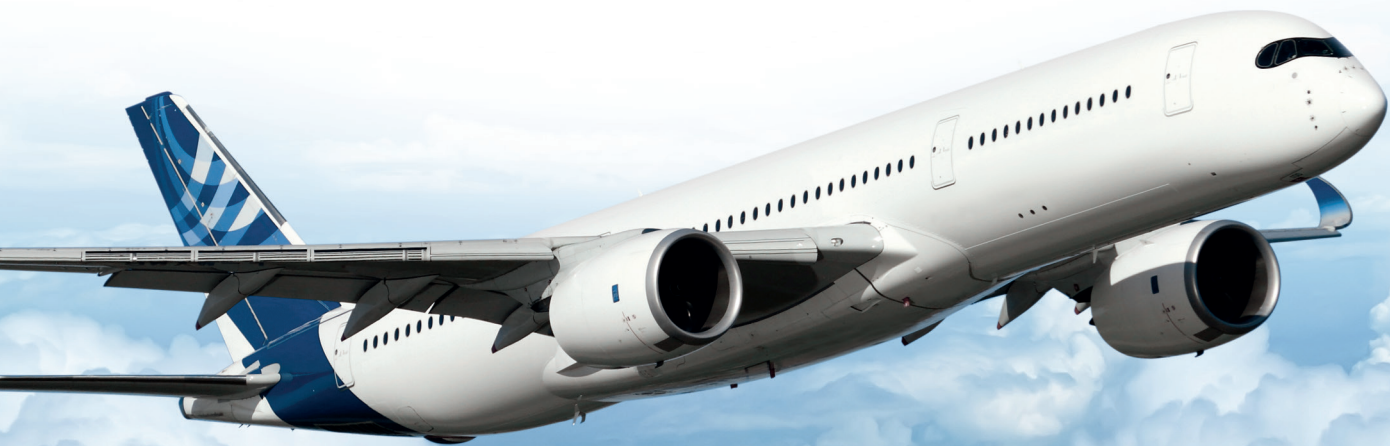
c. Operating temperature range is dependent upon application & adhesive specified.

d. Material without adhesive.

e. Thickness measurements are for reference only.

Ordering Information

GORE® SKYFLEX® Aerospace Materials are available in standard or custom sizes with a variety of adhesives. Visit [gore.com/skyflex](https://www.gore.com/skyflex) for the list of distributors. For more information or to discuss your specific application needs and requirements, please contact a Gore representative.



Information in this publication corresponds to W. L. Gore & Associates' current knowledge on the subject. It is offered solely to provide possible suggestions for user experimentations. It is NOT intended, however, to substitute for any testing the user may need to conduct to determine the suitability of the product for the user's particular purposes. Due to the unlimited variety of potential applications for the product, the user must BEFORE production use, determine that the product is suitable for the intended application and is compatible with other component materials. The user is solely responsible for determining the proper amount and placement of the product. Information in this publication may be subject to revision as new knowledge and experience become available. W. L. Gore & Associates cannot anticipate all variations in actual end user conditions, and therefore, makes no warranties and assumes no liability in connection with any use of this information. No information in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.

NOT INTENDED FOR USE in medical device or food contact applications or with radiation sterilization.

GORE, *Together, improving life*, SKYFLEX and designs are trademarks of W. L. Gore & Associates. © 2023 W. L. Gore & Associates, Inc.

