

**MATERIAL
SELECTION
GUIDE
THERMAL SPRAY
MASKING TAPES**



For product designers and engineers, Rogers Corporation is the elastomeric materials solutions partner of choice when quality, innovation, and collaborative support are critical to design optimization and product functionality.

Rogers' materials are designed into products and applications in segments where high reliability and mission-critical performance are essential: automobiles, aerospace, mass transit, electronics, protective gear, footwear, medical products, and much more.

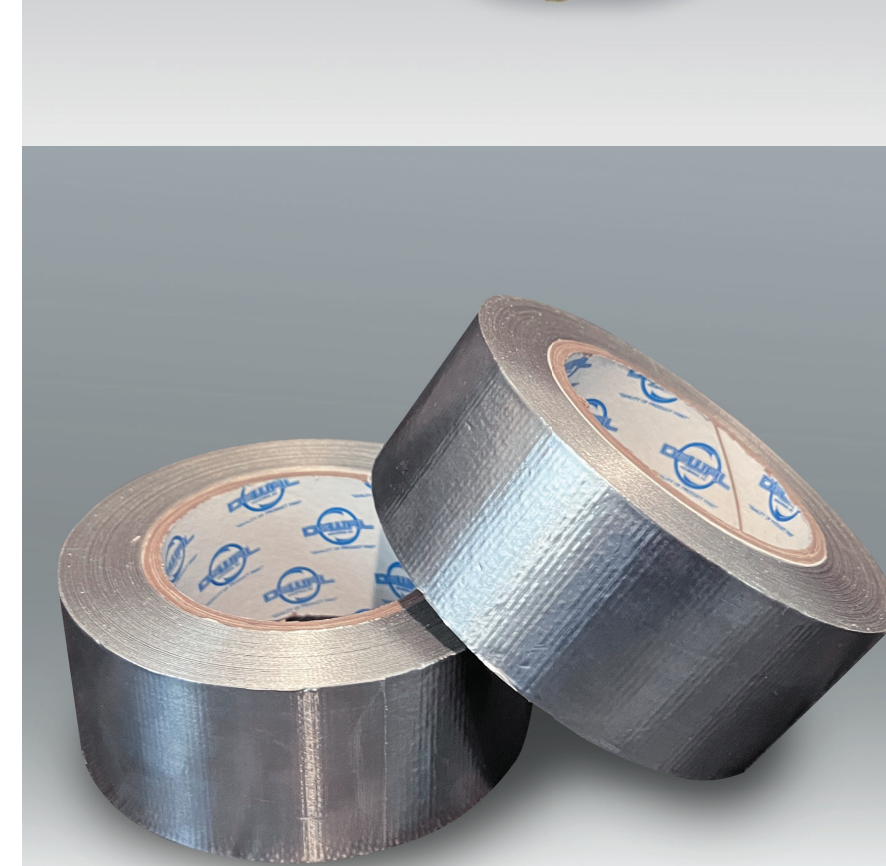
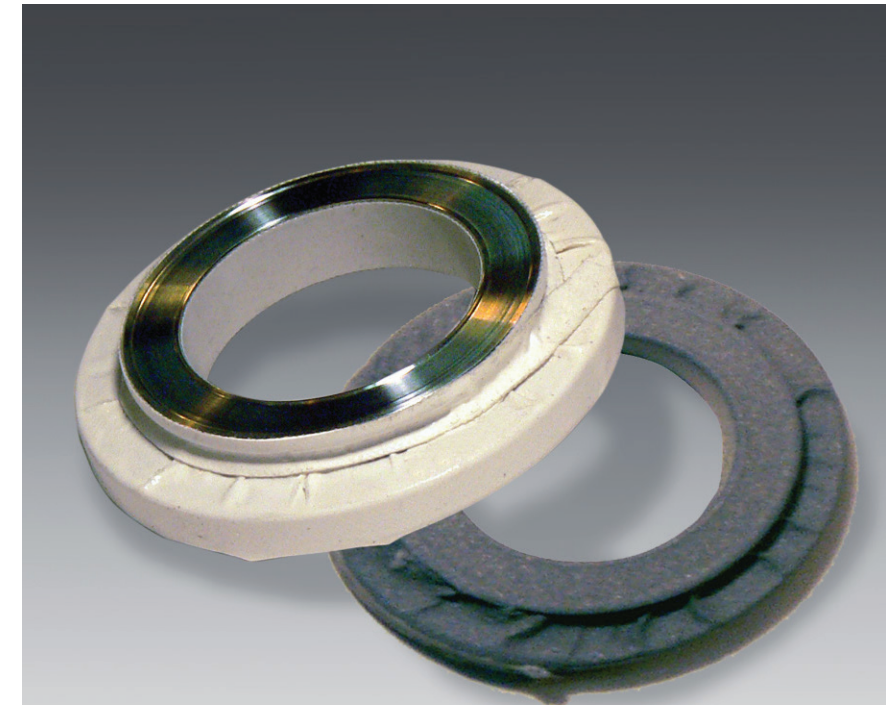
With unrivaled technical support, we foster successful customer relationships through a dedication to technical know-how, application expertise, and global support.



Visit rogerscorp.com for further information on Rogers' portfolio of elastomeric material solutions.



The DeWAL® Thermal Spray Masking Tape product portfolio includes many varieties to meet the needs of individual spray shops. Our commitment to quality is of the utmost importance, ensuring products meet the standards set by numerous industry groups.



KEY BENEFITS

- ✓ **Resistance to Extreme Conditions**
 Exceptional resistance and performance when exposed to high temperatures [up to 260°C (500°F) continuously].
- ✓ **Abrasion and Tear Resistance**
 Heavy abrasion and tear resistance even in the roughest conditions to ensure consistent durable performance.
- ✓ **Superior Adhesion**
 DeWAL thermal spray tapes have aggressive adhesives to ensure high quality adhesion and sharp edges, yet release cleanly upon removal regardless of temperature or spray angle.
- ✓ **Protective Performance**
 DeWAL tapes provide necessary protection from over-spray and splash during spraying.
- ✓ **Non-Carbonizing**
 Free of carbonizing materials for grit blast, ceramic, plasma, arc, and HVOF.
- ✓ **Excellent Application Performance**
 Extreme conformability and flexibility to fit the intricate geometries and configurations of different applications.
- ✓ **Product Consistency**
 Quality manufacturing results in reliable and consistent material properties.
- ✓ **Broad Product Offering**
 Wide range of substrates, thickness, and color options available.
- ✓ **Quality Service**
 All products are supported by knowledgeable Rogers Sales and Applications Engineers, Technical Service, and Customer Service Representatives.



Visit the DeWAL® Product Property Guide to view all technical data sheets.



<https://tools.rogerscorp.com/ems/dewal/properties/index.aspx>

MATERIAL SAMPLES

DeWAL® THERMAL SPRAY MASKING TAPES

Single Ply



DW407
1 mil Foil



DW409
2 mil Foil



DW410



DW468-7
Double Sided Adhesive



DW469



DW497



DW500



DW500R

Double Ply



DW496



DW498



DW500-47



DW504

HVOF Tapes and Heavy Duty Laminates



DW411
Heavy Foil



DW500-40



DW501



DW503
Copper Foil & Glass Cloth

Please contact your Rogers Sales Engineer for additional product and distribution information.

PRODUCT DATA

Typical values shown are from testing at date of manufacture and should not be used for specification limits.



For more DeWAL® product information, visit the DeWAL Product Properties Guide or www.rogerscorp.com

		Single Ply Tapes										Double Ply Tapes						HVOF & Heavy Duty Laminates						
		Glass Cloth		Aluminum Foil & Glass Cloth		Silicone Rubber & Glass Cloth						Glass Cloth		Aluminum Foil & Glass Cloth & Silicone Rubber		Silicone Rubber & Glass Cloth		Aluminum Foil & Glass Cloth	Silicone Rubber & Glass Cloth	Foil & Silicone Rubber & Glass Cloth	Copper Foil & Glass Cloth			
Product		DW468-7	DW469	DW407	DW409	DW410	DW497	DW500	DW500-10	DW500HT	DW500R	DW468-77	DW492	DW496	DW498	DW500-20	DW500-47	DW504	DW504HT	DW411	DW500-40	DW501	DW503	
Standard Color		White		Silver		Blue	White				Red	White		Blue	White				Silver	White	Blue			
Physical Properties	Standard																							
Overall Thickness, mm (in)	ASTM D1000 / ASTM D374	0.1397 (0.0055)	0.1778 (0.007)	0.1803 (0.0071)	0.2159 (0.0085)	0.2794 (0.011)		0.3124 (0.0123)	0.4775 (0.0188)	0.3124 (0.0123)	0.2794 (0.011)	0.3555 (0.014)		0.3585 (0.0141)	0.4695 (0.0185)	0.915 (0.036)	1.17 (0.046)	0.635 (0.025)	0.625 (0.025)	0.2718 (0.0107)	0.965 (0.038)	0.545 (0.0215)	0.6883 (0.0271)	
Substrate	ASTM D1000 / ASTM D374	0.102 (0.004)	0.122 (0.0048)	0.091 (0.0036)	0.1145 (0.0045)	0.203 (0.008)			0.37 (0.0145)	0.203 (0.008)		-	0.2338 (0.0092)	-						0.17 (0.0067)	-			
Adhesive System		Silicone										Silicone						Silicone						
Adhesive Thickness, mm (in)	ASTM D1000 / ASTM D374	0.038 (0.0015)	0.056 (0.0022)	0.089 (0.0035)	0.1015 (0.004)	0.0762 (0.003)		0.109 (0.0043)			0.0762 (0.003)	0.038 (0.0015), per side	0.056 (0.0022)	-						0.1 (0.004)	-	0.065 (0.0025)	-	
Adhesion, g/cm (oz/in)	ASTM D1000	334 (30)	491 (44)	781 (70)	770 (69)	469 (42)	480 (43)	647 (58)	592 (53)	580 (52)	592 (53)	334 (30)	491 (44)	781 (70)		592 (53)	636 (57)	647 (58)	580 (52)	826 (74)	636 (57)	725 (65)	491 (44)	
Heat and Flame																								
Max Operating Temp, C (F)	Continuous	260 (500)			260 (500)									260 (500)						260 (500)				
Process and Packaging																								
Width Min, mm (in)		6.35 (0.25)		6.35 (0.25)										6.35 (0.25)						6.35 (0.25)				
Width Max, mm (in)		914 (36)		660 (26)	635 (25)	914 (36)						432 (17)			914 (36)	432 (17)	914 (36)		432 (17)	914 (36)	432 (17)			
Standard Liner		Crepe Release Liner	Self Wound			Yellow Bubble			Orange Bubble	Yellow Bubble	Crepe Release Liner	Yellow Bubble					Orange Bubble	Self Wound	Yellow Bubble					
Standard Core		DeWAL Paper										DeWAL Paper						DeWAL Paper						
Standard Core Diameter, mm (in)		76 (3)		76 (3)									76 (3)						76 (3)					
Standard Roll Length, M (yds)		33 (36)		33 (36)									16 (18)	33 (36)		16 (18)		10 (11)	16 (18)		33 (36)	10 (11)	16 (18)	10 (11)
Shelf Life		1 Year from DOM										1 Year from DOM						1 Year from DOM						

Spray Types	Grit Blasting	X										X						X			
	Flame Spraying	X										X						X			
	HVOF				X													X			
	Plasma Spraying	X										X						X			
	Wire Arc				X													X			

*The spray types and conditions recommended in the chart above apply to all industries.

AEROSPACE STANDARDS

The DeWAL line of thermal spray tapes are approved for use by: Pratt & Whitney, GE, and Rolls-Royce.

Additionally, DeWAL tapes are qualified by other aircraft engine, automotive, medical and mission-critical manufacturers such as GM, Stryker, Lockheed Martin, and Northrup Grumman.

DeWAL P/N	P & W PMC	RR OMAT	GE
DW407	4235	2/205	C10-12
DW409	4433	N/A	C10-12
DW410	4416	2/174C	C10-12
DW411	4235	2/174A	C10-12
DW468-7	4614	2/204	C10-12
DW468-77	4614	N/A	C10-12
DW469	4273	2/203	C10-12
DW492	4462	2/96P	C10-12
DW496	N/A	N/A	C10-12
DW497	4458	2/174B	C10-12
DW498	4480	2/96W	C10-12
DW500	4295 & 4630	2/96M	C10-12
DW500R	4630	2/96M	C10-12
DW500-10	4630	N/A	N/A
DW501	N/A	2/174G	C10-12
DW503	4664	N/A	C10-12
DW504	4630	N/A	N/A

DW407 meets Lockheed Martin J:505.

DW469 meets the Federal Aviation Regulation FAR 25.855(a-1) and is UL Certified as 510 File No. E179854 Flame Retardant.

THERMAL SPRAY

Thermal spraying is a coating process where a spraying gun, powered by a carrier gas, shoots through a flame at a specific speed onto a part. Doing so builds a layer of coating between 0.1 mm to 10 mm thick on the part. Particles on the substrate's surface make "splats" or platelets that join together to form a coating. The deposition of the coating does not fuse with the substrate to form a bond, thus the bond is mechanical, not metallurgical or fused.

Grit blasting, an optional yet often recommended step in thermal spraying, ensures optimum coating conditions. It is a process in which a pressurized stream of abrasive particles like hard metal or oxide grit are shot onto a surface to clean and roughen the surface prior to coating.

Thermal spray coatings provide:

- Dimensional stability
- Enhanced properties (abrasion, corrosion, wear, thermal resistance)
- Extended lifespan
- Reduced operating costs

Types of Thermal Spraying

Flame Spraying uses combustion of a mixture of fuel gas (hydrogen, propylene and propane) and oxygen to heat spray material (powder or wire) to a moderate spray rate. Coatings have low bond strength, high oxide content, and high porosity. This process is popular for low-intensity applications as it has a lower cost.

HVOF/HVAF Spraying uses heat and pressure generated from a combustion of liquid/gas fuel mixed with oxygen/air. This is combusted into a chamber, causing it to heat and expand, which then directs exhaust gases from the gun at supersonic speeds. High gas and particle velocities generate excellent bond strength and low porosity coatings, making it a very expensive process.

Plasma Spraying uses a DC electric arc to form high temperature plasma gas, which heats the powder spray material being fed into the plasma jet. Inert gas is fed into the gun which expands rapidly when heated and ionized, leading to particle speeds of 200-300m/s. This cost effective process forms very good coatings of high melting point materials. Other, more expensive, plasma spraying processes include Vacuum Plasma Spraying (VPS) and Low Pressure Plasma Spraying (LPPS) which use partial vacuums to get higher quality coatings.

Wire Arc Spraying is the highest productivity process. In it, a DC electrical arc strikes between two wire electrodes melting to create the spray material. Compressed gas atomizes the wire and fires the droplets toward the substrate, resulting in high bond strengths and spray rates. A disadvantage to this process is that it produces arc light and harsh fumes.

General Thermal Spray Process

1. Clean contaminants (dust, dirt, rust, etc.) from the part/surface.
2. Mask the part to avoid overspray on areas that do not require coating.
3. Grit blast the part to rough up the surface so coating adheres better.
4. Inspect before setting up the part in the spray booth.
5. Set up the part and preheat it to prepare it for coating.
6. Spray the part with coating material. Multiple passes may be required to get the desired structure and thickness deposited.

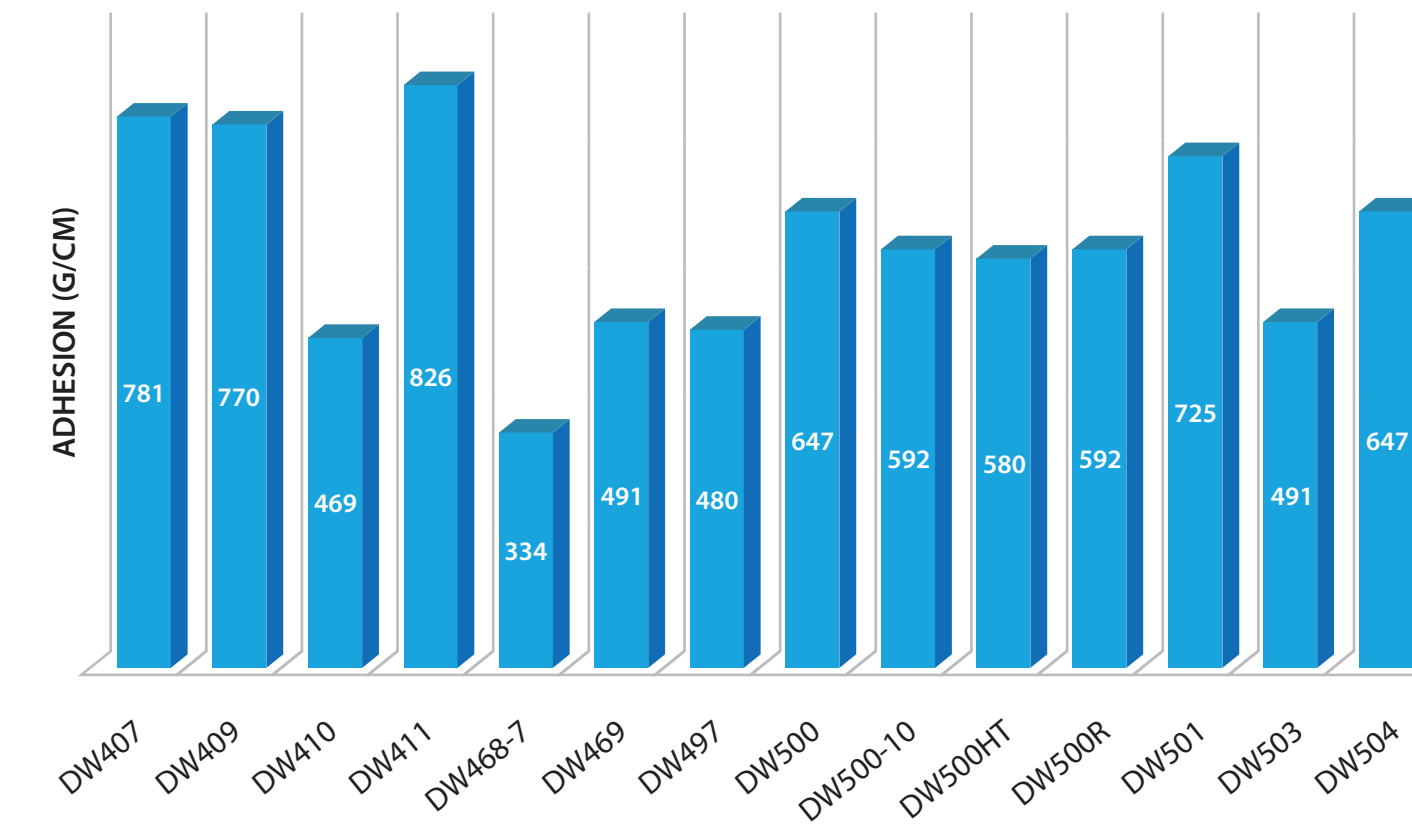
Rogers is committed to ensuring DeWAL products hold up in your applications. There are numerous variables available to manipulate in Thermal Spray applications, including gun speed, gun fuel, spray distance from the part, spray angle and many more.

Please contact us regarding your application so we can assist in developing suitable spray conditions.

Adhesion to Steel

DeWAL thermal spray tapes are manufactured with proprietary silicone adhesive technology. Backed by decades of working closely with PSA manufacturers, the products employ aggressive adhesives that ensure high quality adhesion, sharp edges, and clean release.

TYPICAL ADHESION TO STEEL
ASTM-D 1000



Highly reflective DW 411 butts the channel of this aerospace-critical, tight tolerance part. Silicone glass DW 500, known for excellent conformability, covers the interior radius.



DW411 is a heavy 4 mil aluminum foil/glass laminate with a high temperature silicone adhesive. The aluminum foil backing substrate provides excellent conductive characteristics in high temperature applications. The silicone adhesive provides exceptional adhesion at high temperatures yet will remove cleanly.

DW500 is a one step plasma masking tape constructed of a silicone rubber/glass cloth backing that is coated with an aggressive high-temperature silicone adhesive. It will withstand grit blast and plasma spray process, yet will remove cleanly. DW 500 has a higher tack than most other plasma masking tapes which allows it to easily conform to the most complex of shapes.

Designed for severe duty, including HVOF applications, DW 501 is a laminate of blue silicone rubber, glass fabric, 4 mil aluminum and glass fabric. The silicone adhesive will release cleanly while the double-ply construction provides superior protection in this demanding high velocity spray environment.

APPLICATIONS

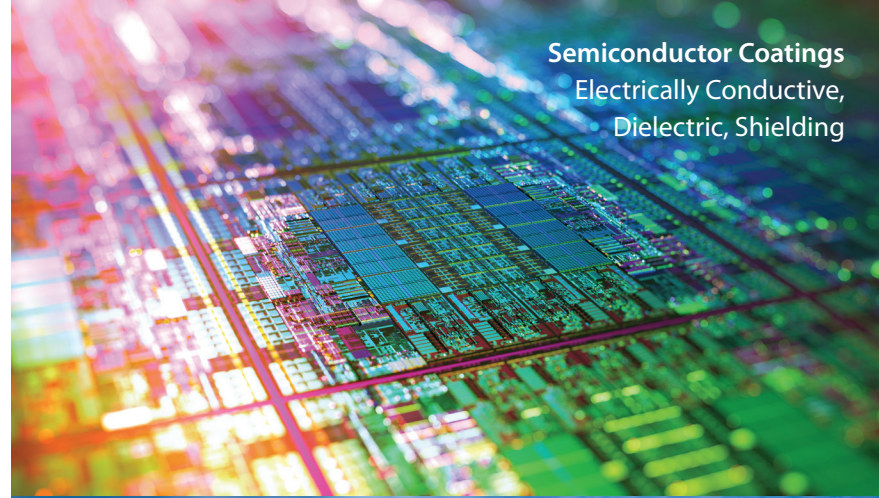
Thermal Spray Masking

Component Repair

Aircraft MRO Work

Plasma Metallization Operations

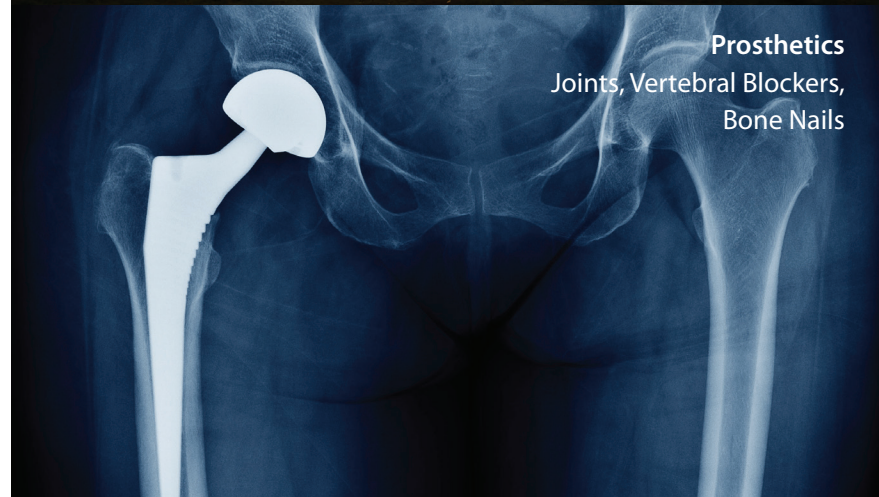
and more ...



Semiconductor Coatings
Electrically Conductive,
Dielectric, Shielding



Wind Turbines
Fans, Bearings,
Shafts



Prosthetics
Joints, Vertebral Blockers,
Bone Nails

Industry Recommendations

Thermal spray processes are used in a broad variety of industries to improve efficiencies, lifespan, and reduce operating costs. These industries include:

Aerospace
Automotive
Biomedical
Electrical & Electronics
Industrial Gas Turbine
Oil & Gas
Paper & Printing
Renewable Energy

* The industries listed are simply suggestions as to which tapes best fit applications for the industries stated above. Please contact a Rogers Sales Engineer for recommendations on your specific application.

Best Use Masking Practices

- Ensure the part is clean of contaminants, grit blast to rough up the surface and remove alcohol left behind by cleaning.
- Apply tape with uniform, even pressure, removing all air bubbles
- Do not tear tape by hand
- Optimize spray distance and gun speed to best fit your needs
- Utilize proper cooling techniques after spraying
- Always be aware of shelf life and storage instructions to ensure best performance

Scan to check out our shelf life, storage, and handling instructions.
<https://rogerscorp.com/elastomeric-material-solutions/dewal-products>



The Rogers Advantage

- American Made, available worldwide
- Manufactured in an ISO 9001:15 registered facility
- The industry's most complete line of thermal spray tapes
- Strong relationships with committed distributors, integrated suppliers, and OEMs
- A dedication to increase customer satisfaction through continuous improvement of product quality, services, delivery, price, and the quality management system

World Class Performance

Rogers Corporation (NYSE:ROG) is a global leader in engineered materials to power, protect and connect our world. Rogers delivers innovative solutions to help our customers solve their toughest material challenges. Rogers' advanced electronic and elastomeric materials are used in applications for EV/HEV, automotive safety and radar systems, mobile devices, renewable energy, wireless infrastructure, energy-efficient motor drives, industrial equipment and more. Headquartered in Chandler, Arizona, Rogers operates manufacturing facilities in the United States, Asia and Europe, with sales offices worldwide.

www.rogerscorp.com

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Rogers is committed to producing quality products in a safe environment manufactured with robust management systems certified to industry standards.