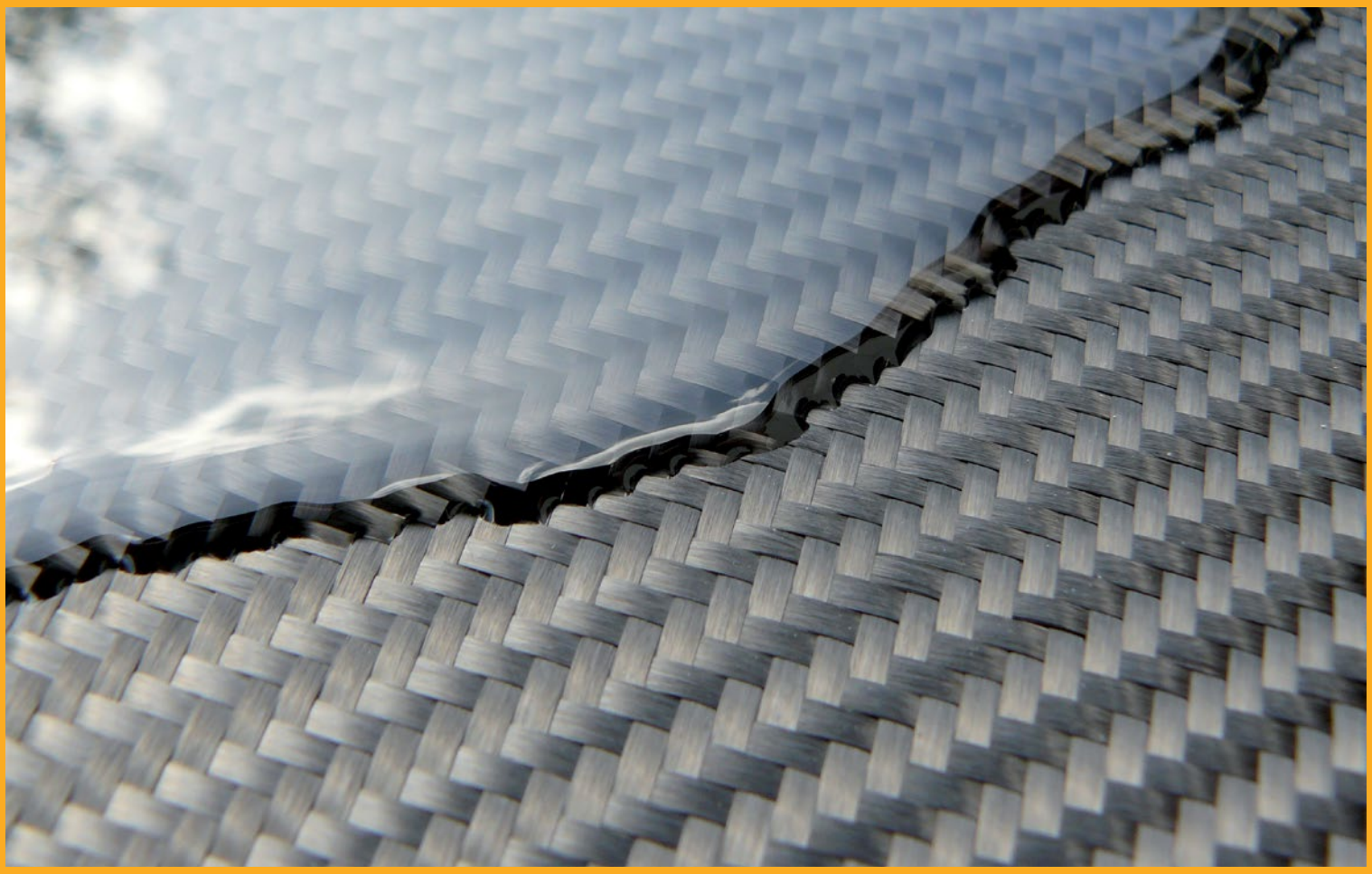


# SIKA ADVANCED RESINS

## LAMINATION AND INFUSION PRODUCT GUIDE

BUILDING TRUST

# ACHIEVE LIGHTWEIGHT, HIGH-STRENGTH COMPOSITE PARTS. MAXIMIZE PROCESS EFFICIENCY AND DESIGN FLEXIBILITY.

## SIKA EPOXY-BASED LAMINATION AND INFUSION SYSTEMS

Sika's laminating and infusion resins are specially designed for the production of high-performance composite tools and parts. These systems provide excellent bonding to fabric reinforcements, with a wide range of viscosities, working times, and temperature-resistance capabilities available to suit any production process. Regardless of your specific market or application, the end result is a high-grade composite with superior weight-to-strength ratio, outstanding corrosion resistance, and exceptional toughness.

We also offer a range of specially formulated surface coats for mold making applications. These systems are designed to create durable, abrasion-resistant tooling surfaces, and provide excellent resistance to mechanical, thermal, and chemical stress.

# CONTENT




"As a global leader in Tooling and Composites, it is our aim to provide our customers with best-in-class, innovative, and tailor-made solutions. Being close to our customers is a key priority for us; worldwide production and on-site support from our experts is the basis of our success. Every day, we are looking ahead, to create new and better solutions together with our customers."

**MORTEN MUSCHAK**
Head Corporate Automotive & Industry

# LAMINATION SYSTEMS
## EPOXY SOLUTIONS FOR COMPOSITE TOOLS AND PARTS

Sika's lamination solutions are two-component, epoxy-based systems consisting of a resin and hardener component. These systems enable the creation of lightweight, high-strength composite parts and tools via a wide range of production processes, such as wet-layup (including vacuum bagging), compression molding, resin transfer molding (including vacuum-assisted), and filament winding. While most of Sika's standard laminating systems achieve ultimate properties by post-curing, several provide good physical properties with just a basic room temperature cure. Our unique range also includes high-temperature resistant systems (up to 450°F Tg), and select technologies that offer flame retardant capabilities.

## STANDARD LAMINATION SYSTEMS

| Product | Hardener | Mix Ratio (by weight) | Pot Life (min) | Viscosity (cps) | Tg (°F) | Tensile Strength (psi) | Tensile Modulus (psi) | Flexural Strength (psi) | Flexural Modulus (psi) | Elongation (%) | Flame Retardant |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **EPOLAM 2500** | EPOLAM 2500 | 100R / 22H | 78 | 3,190 | 220* | 6,073* | 339,383* | 9,790* | 593,023* | 2.1* | ✓ |
| **SikaBiresin® CR62 FR** | SikaBiresin® CH62 | 100R / 10H | 45 | 2,650 | 143 (HDT)* | 32,670 (Lam.) | - | 18,550 (Lam.) | 774,000 (Lam.) | 4 | ✓ |
| | SikaBiresin® CH62-1 | 100R / 17H | 16 | 1,700 | 137 (HDT)* | 15,300 (Lam.) | - | 5,018 (Lam.) | 280,000 (Lam.) | 4 | ✓ |
| **SikaBiresin® CR72** | SikaBiresin® CH72-1 | 100R / 18H | 34 | 633 | 154* | 8,992* | 271,239* | 16,420* | 445,545* | 4* | - |
| | SikaBiresin® CH72-2 | 100R / 18H | 43 | 390 | 163* | 10,239* | 259,791* | 14,917* | 408,682* | 6.3* | - |
| | SikaBiresin® CH72-3 | 100R / 18H | 52 | 410 | 159* | 10,695* | 271,214* | 13,899* | 409,770* | 6.5* | - |
| **SikaBiresin® CR77 FR** | SikaBiresin® CH77-2 | 100R / 12H | 68 | 2,100 | 199* | 9,689* | 228,985* | 23,200* | 548,000* | 5.3* | ✓ |
| **SikaBiresin® CR88** | SikaBiresin® CH88-6 | 100R / 32H | 140 | 550 | 202* | 8,703* | 269,826* | 15,692* | 425,751* | 4* | - |
| **SikaBiresin® CR94** | SikaBiresin® CH94-1 | 100R / 27H | 20 - 30 | 1,200 | 203* | 11,600* | 234,000* | 14,500* | 468,000* | 7.3* | - |
| | SikaBiresin® CH94-3 | 100R / 27H | 60 - 90 | 1,000 | 203* | 11,400* | 220,000* | 18,500* | 472,000* | 8.1* | - |
| | SikaBiresin® CH94-6 | 100R / 27H | 110 - 160 | 1,000 | 194* | 11,300* | 251,000* | 16,400* | 442,000* | 7* | - |
| **SikaBiresin® CR101** | SikaBiresin® CH101-2 | 100R / 20H | 40 - 60 | 1,500 | 196 (HDT)* | - | - | - | - | 4* | - |
| | SikaBiresin® CH101-3 | 100R / 13H | 85 - 95 | 2,500 | 214 (HDT)* | - | - | - | - | 2* | - |
| **SikaBiresin® CR107** | SikaBiresin® CH107-7 | 100R / 28H | 215 | 1,250 | 178* | 11,300* | 530,000* | 18,800* | 512,000* | - | - |
| **SikaBiresin® CR108 FR** | SikaBiresin® CH108-1 | 100R / 22H | 61 | 1,000 | 226* | 11,750* | 315,000* | 15,500* | 495,000* | 5.1* | ✓ |
| | SikaBiresin® CH108-4 | 100R / 24H | 222 | 1,375 | 203* | 8,500* | 275,000* | 18,800* | 490,000* | 4* | ✓ |
| | SikaBiresin® CH108-8 | 100R / 30H | 480 | 1,300 | 199* | 7,500* | 245,000* | 12,500* | 380,000* | 3.7* | ✓ |
| **SikaBiresin® CR111** | SikaBiresin® CH111-1 | 100R / 13H | 28 | 2,100 | 232 (HDT) | 11,400 | - | 13,900 | 440,000 | 4 | - |
| **SikaBiresin® L302** | SikaBiresin® L302-1 | 100R / 16H | 28 - 34 | 3,000 | - | - | - | - | - | 1.1 | - |
| **SikaBiresin® L337** | SikaBiresin® L337 | 100R / 16H | 45 - 60 | 4,000 | 238* | 27,285 (Lam.)* | - | 39,035 (Lam.)* | 1,300,000 (Lam.)* | - | |
| **TCC-205** | TCC-102 | 100R / 25H | 15 - 20 | 700 | 180 (MST) | 9,500 | - | 18,000 | - | 2 | - |
| | TCC-104 | 100R / 25H | 30 - 35 | 800 | 180 (MST) | 9,500 | - | 18,000 | - | 2 | - |
| **TCC-230** | TCC-102 | 100R / 17H | 5 - 10 | 4,400 | - | - | - | - | - | - | - |
| | TCC-104 | 100R/ 17H | 15 - 20 | 4,400 | - | - | - | - | - | - | - |

* Value based on room temperature cure followed by post-cure. See Product Data Sheet for specific post-cure schedule.
(Lam.): Value based on testing conducted on fiber reinforced laminate.

(HDT): Heat deflection temperature listed in place of Tg.
(MST): Maximum service temperature listed in place of Tg.

## HIGH-TEMPERATURE RESISTANT LAMINATION SYSTEMS

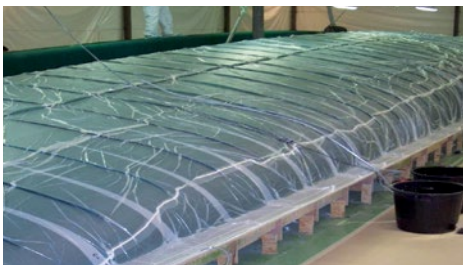
| Product | Hardener | Mix Ratio (by weight) | Pot Life (min) | Viscosity (cps) | Tg (°F) | Tensile Strength (psi) | Tensile Modulus (psi) | Flexural Strength (psi) | Flexural Modulus (psi) | Elongation (%) | Flame Retardant |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **SikaBiresin® CR128** | SikaBiresin® CH128-2 | 100R / 22H | 35 - 50 | 2,500 | - | - | - | - | - | 3* | - |
| | SikaBiresin® CH128-4 | 100R / 27H | 120 - 140 | 1,500 | 278 (HDT)* | - | - | - | - | - | - |
| **SikaBiresin® CR161** | SikaBiresin® CH161-6 | 100R / 31H | 125 - 155 | 450 | 327* | 5,100* | 465,000* | 8,800* | 392,000* | - | - |
| **SikaBiresin® CR163** | SikaBiresin® CH163-2 | 100R / 25H | 50 - 75 | 3,225 | 331* | 33,690 (Lam.)* | 2,593,000 (Lam.)* | 44,540 (Lam.)* | 2,296,000 (Lam.)* | 1.8* | - |
| | SikaBiresin® CH163-6 | 100R / 24H | 180 - 210 | 4,500 | 450* | 56,090 (Lam.)* | 3,504,000 (Lam.)* | 76,200 (Lam.)* | 3,504,000 (Lam.)* | - | - |
| **SikaBiresin® CR216** | SikaBiresin® CH216-50 | 100R / 53H | 1,500 | 700 | 396* | 5,084* | 292,640* | 12,442* | 489,574* | 1.9* | - |
| **SikaBiresin® CR226** | SikaBiresin® CH226-20 | 100R / 50H | 730 | 553 | 416* | 3,572* | 292,640* | 9,059* | 467,510* | 1.3* | - |

* Value based on room temperature cure followed by post-cure. See Product Data Sheet for specific post-cure schedule.
(Lam.): Value based on testing conducted on fiber reinforced laminate.

(HDT): Heat deflection temperature listed in place of Tg.

# INFUSION SYSTEMS
## EPOXY SOLUTIONS FOR COMPOSITE TOOLS AND PARTS

Sika's infusion solutions are designed to meet the highest standards of production, process efficiency, and end-use performance, resulting in final tools and parts that provide superior weight-to-strength ratio. These two-component, epoxy-based systems offer optimal viscosity and are available in a wide range of working times to maximize efficiency of the infusion process, regardless of part size. While post-curing will achieve ultimate performance, several of Sika's standard infusion systems provide good physical properties with just a basic room temperature cure. Our range of high-temperature resistant infusion systems provide excellent thermal resistance, achieving Tgs ranging from 280°F to 416°F.



## STANDARD INFUSION SYSTEMS

| Product | Hardener | Mix Ratio (by weight) | Pot Life (min) | Viscosity (cps) | Tg (°F) | Tensile Strength (psi) | Tensile Modulus (psi) | Flexural Strength (psi) | Flexural Modulus (psi) | Elongation (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| **SikaBiresin® CR72** | SikaBiresin® CH72-1 | 100R / 18H | 34 | 633 | 154* | 8,992* | 271,239* | 16,420* | 445,545* | 4* |
| | SikaBiresin® CH72-2 | 100R / 18H | 43 | 390 | 163* | 10,239* | 259,791* | 14,917* | 408,682* | 6.3* |
| | SikaBiresin® CH72-3 | 100R / 18H | 52 | 410 | 159* | 10,695* | 271,214* | 13,899* | 409,770* | 6.5* |
| **SikaBiresin® CR76** | SikaBiresin® CH76-9 | 100R / 32H | 550 - 570 | 280 | 170* | 10,684* | - | 19,040* | 450,000* | 4* |
| **SikaBiresin® CR86** | SikaBiresin® CH86-2 | 100R / 27H | 25 - 35 | 266 | 183* | 8,653* | 237,572* | 17,278* | 444,808* | 4.5* |
| | SikaBiresin® CH86-3 | 100R / 27H | 90 - 120 | 250 | 178* | 7,480* | 254,861* | 15,419* | 419,367* | 3.6* |
| | SikaBiresin® CH86-6 | 100R / 27H | 180 - 250 | 250 | 171* | 10,263* | 241,990* | 15,951* | 432,003* | 6.5* |
| **SikaBiresin® CR88** | SikaBiresin® CH88-6 | 100R / 32H | 140 | 550 | 202* | 8,703* | 269,826* | 15,692* | 425,751* | 4* |

* Value based on room temperature cure followed by post-cure. See Product Data Sheet for specific post-cure schedule.

## HIGH-TEMPERATURE RESISTANT INFUSION SYSTEMS

| Product | Hardener | Mix Ratio (by weight) | Pot Life (min) | Viscosity (cps) | Tg (°F) | Tensile Strength (psi) | Tensile Modulus (psi) | Flexural Strength (psi) | Flexural Modulus (psi) | Elongation (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| **SikaBiresin® CR86** | SikaBiresin® CH138-10 | 100R / 27H | 309 | 530 | 280* | 8,340* | 222,459* | 12,768* | 366,186* | 5* |
| **SikaBiresin® CR161** | SikaBiresin® CH161-6 | 100R / 31H | 125 - 155 | 450 | 327* | 5,100* | 465,000* | 8,800* | 392,000* | - |
| **SikaBiresin® CR216** | SikaBiresin® CH216-50 | 100R / 53H | 1,500 | 700 | 396* | 5,084* | 292,640* | 12,442* | 489,574* | 1.9* |
| **SikaBiresin® CR226** | SikaBiresin® CH226-20 | 100R / 50H | 730 | 553 | 416* | 3,572* | 292,640* | 9,059* | 467,510* | 1.3* |

*Value based on room temperature cure followed by post-cure. See Product Data Sheet for specific post-cure schedule.

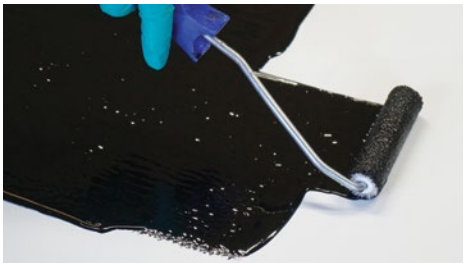
Sika's lamination systems provide excellent bonding to all common fabric reinforcements, resulting in high-grade laminates with exceptional strength.

Sika's infusion systems enable the creation of composite tools and parts that meet the highest performance standards and provide superior weight-to-strength ratio.

# SURFACE COATS

## EPOXY AND POLYESTER SOLUTIONS FOR MOLD MAKING

Sika offers a range of specially formulated surface coats for mold making applications. These two-component epoxy and polyester-based systems are designed to create durable, abrasion-resistant tooling surfaces, providing a void-free barrier for seamless mold or part creation. With excellent resistance to mechanical, thermal, and chemical stress, our surface coats will help ensure longevity of your plug, mold, or tool, while producing detailed and accurate reproductions. Our standard surface coat range is designed for room temperature curing applications, while our high-temperature resistant systems must be heat-cured to achieve optimal properties.



## STANDARD SURFACE COATS

| Product | Technology | Hardener | Mix Ratio (by weight) | Mixed Color | Pot Life (min) | Density (lbs/gal) | Shore D Hardness | Heat Deflection Temperature (°F) | Tensile Strength (psi) | Flexural Strenth (psi) | Flexural Modulus (psi) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **ES-218** | 2-C Epoxy | ES-218 | 100R / 14H | White | 22 | 11.6 | 83 | 114 | 4,132 | 7,110 | 414,800 |
| **TCC-352** | 2-C Epoxy | TCC-102 | 100R / 15H | Light gray | 20 | 11.9 | 89 | - | 7,500 | - | - |

## HIGH-TEMPERATURE RESISTANT SURFACE COATS

| Product | Technology | Hardener | Mix Ratio (by weight) | Mixed Color | Pot Life (min) | Density (lbs/gal) | Shore D Hardness | Heat Deflection Temperature (°F) | Tensile Strength (psi) | Flexural Strength (psi) | Flexural Modulus (psi) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **APG 1750 S** | 2-C Polyester | MEKP | 100R / 2H | Orange, black | 22 | 10.7 | 87* | - | - | - | - |
| **ES-215** | 2-C Epoxy | ES-215-1 | 100R / 18H | Black | 16 | 11 | 88 - 90* | 301* | 7,101* | 8,108* | 339,700* |
| | | ES-215-2 | 100R / 22H | Black | 83 | 10.3 | 87 - 88* | 307* | 3,593* | 9,253* | 379,100* |
| | | ES-215-IHG | 100R / 17H | Black | 180 - 220 | 11 | 88 - 90* | 382* | 4,938* | 8,416* | 428,400* |
| **ES-221** | 2-C Epoxy | ES-221 | 100R / 13H | Black, white | 22 | 12.4 | 90* | 230* | 7,591* | 13,998* | 740,800* |
| **ES-224** | 2-C Epoxy | ES-224 | 100R / 9H | Gray | 60 | 14.8 | 89 - 90* | 174* | 4,912* | 10,140* | 680,000* |
| **ESG-215** | 2-C Epoxy | ESG-215 | 100R / 14H | Black | 35 - 50 | 11 | 90* | 268* | 6,276* | 11,500* | 667,400* |
| | | ESG-215-T | 100R / 15H | Black | 35 - 50 | 10.4 | 90* | 371* | 7,101* | 8,416* | 428,400* |
| **SP-707** | 2-C Epoxy | SP-707 | 100R / 15H | Gray | 23 | 11.6 | 90* | 229* | 11,640* | 19,560* | 509,800* |

* Value based on room temperature cure followed by post-cure. See Product Data Sheet for specific post-cure schedule.

Sika's surface coats are easy to apply with a brush or roller. APG 1750 S is also capable of spray application.

# SIKA ADVANCED RESINS
## THE LEADING BRAND FOR TOOLING AND COMPOSITE SOLUTIONS

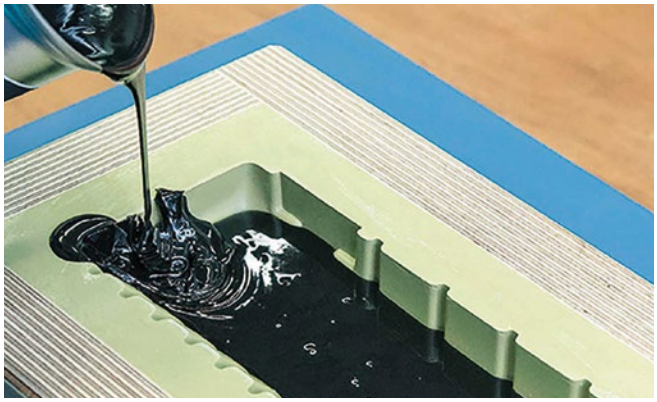
Sika's Advanced Resins group is a leading formulator of high-performance resins for the tooling and composite materials industry. With over 75 years of expertise in the development of high-quality epoxy and polyurethane resins, we aim to provide our customers with best-in-class materials and sales support to enable their consistent technical and commercial success.

Sika Advanced Resins offers solutions for every stage of composite manufacturing, from the model and prototype phase, all the way to final part production. Our products are trusted worldwide across a wide range of industries, such as automotive and transportation, marine, aerospace, sports and leisure, renewable energy, construction, foundry model making, and more.

## OUR CORE COMPETENCIES

### TOOLING BOARDS AND PASTES

Sika offers a complete portfolio of high-quality tooling boards and paste systems for model and mold making, providing users with dimensionally stable and easy-to-machine solutions.

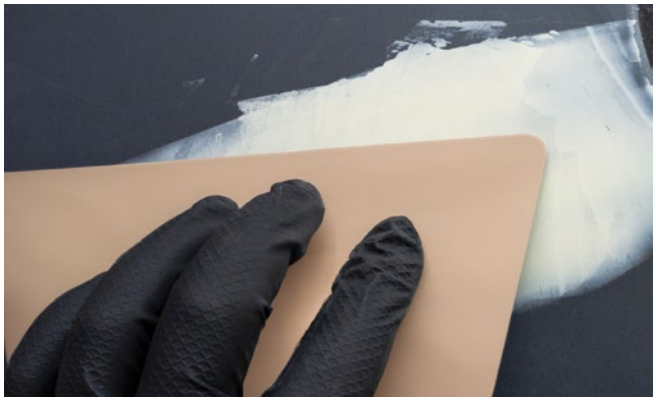


### CASTING SYSTEMS

Sika's casting solutions are two-component polyurethane and epoxy systems suitable for a wide range of applications and industries. These systems provide fast and cost-efficient part production for prototyping, vacuum forming molds, foundry patterns, and sheet metal forming tool applications.

### LAMINATING AND INFUSION SYSTEMS

Sika's laminating and infusion resins are specially designed for the production of high-performance composite tools and parts. These systems provide excellent application properties and bond well to all common fabric reinforcements, resulting in high-grade composites with superior strength properties.

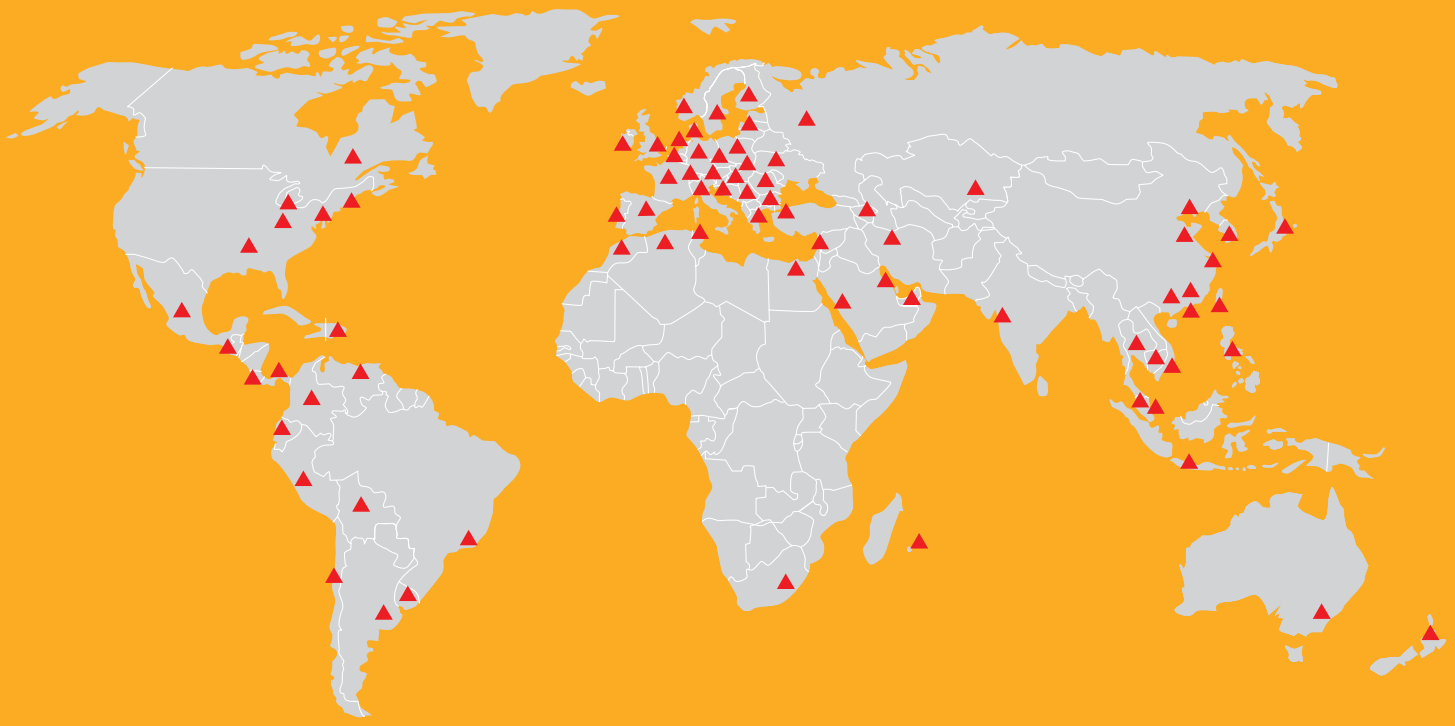


### FILLING AND FAIRING COMPOUNDS

Sika provides the industry's most unique and diverse range of filling and fairing compounds. Our product line includes high-performance, two-component polyester and epoxy systems capable of meeting requirements in applications ranging from the most basic pinhole filling, to full fairing/surfacing and complex structural repairs.

**Scan to learn more about Sika's tooling and composite solutions!**

# GLOBAL BUT LOCAL PARTNERSHIP



**NORTH AMERICAN PLANT LOCATIONS**
Eaton Rapids, Michigan
Lakewood, New Jersey
Lyndhurst, New Jersey
Marion, Ohio
Grandview, Missouri
Montreal, Quebec

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**NORTH AMERICAN SILICONE COMPETENCE CENTER**
995 Towbin Avenue
Lakewood, NJ 08701

**CONTACT US:**
sikaindustry.com/advancedresins

**CUSTOMER SERVICE**
1-800-688-7452

**TECHNICAL SERVICE**
tsmh@us.sika.com

## SIKA ADVANCED RESINS. A PARTNER YOU CAN TRUST.

Building trust is paramount in our aim to provide our customers with industry-leading solutions and sales support. Pro's Choice is a leading manufacturer of composite-based, custom-fit, goalie masks. Scan the QR code below to hear from owner, Dom Malerba, as to why he trusts Sika's epoxy lamination systems to help ensure his masks perform to the highest safety and quality standards.

**Scan to see our partnership and products in action!**





BUILDING TRUST