



YOUR TRUSTED PARTNER FOR
ONSHORE WIND CONSTRUCTION

BUILDING TRUST
CONSTRUIRE LA CONFIANCE





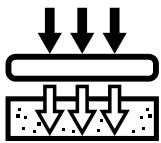
YOUR TRUSTED PARTNER

Wind energy is a key driver in the global shift toward renewable power. In recent years, the onshore wind sector has experienced strong growth in the demand for **reliable and efficient construction solutions**.

Wind energy is generated by converting the kinetic energy of moving air into electricity using wind turbines. These turbines must withstand not only static loads but also dynamic forces caused by the rotation of the blades. Additionally, they operate in some of the harshest and most isolated environments on the planet.

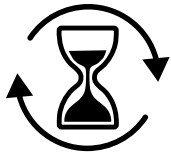
To maximize the efficiency and reliability of wind turbines, Sika has developed a comprehensive portfolio of solutions for wind power construction. With deep expertise in construction technologies, Sika offers a complete suite of products and services for wind energy projects – from the foundation of the wind tower to the blades of the turbine.

CHALLENGES IN ONSHORE WIND FARMS



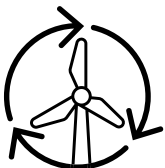
ACHIEVING RELIABLE LOAD TRANSFER

Onshore wind turbines face extreme static and dynamic forces, combined with challenging environmental conditions. Ensuring that towers remain stable under these stresses is a major challenge, especially as turbines grow taller and more powerful. Reliable load transfer from the tower to the foundation is critical to prevent structural failures and maintain safe operations.



DURABILITY AND LONG-TERM PERFORMANCE

Wind turbine foundations and tower components are constantly exposed to harsh environmental conditions, including moisture, temperature fluctuations, and chemical agents. Over time, these factors can degrade materials, corrode reinforcement, and weaken the structural integrity of the wind farm. Maintaining long-term durability under such conditions is a critical challenge for onshore wind energy projects.



OPERATIONAL EFFICIENCY AND LIFECYCLE MANAGEMENT

Managing the ongoing operation of wind turbines over decades presents significant challenges. Damage to foundations due to dynamic loads and settlement, and unexpected component failures can impact energy production, safety, and overall efficiency. Ensuring reliable performance throughout the turbine's lifecycle requires careful planning and proactive management of long-term operational risks.

YOUR CHALLENGES, OUR SOLUTIONS



CONTACT YOUR
SIKA EXPERT FOR
ADDITIONAL
INFORMATION

1

1

Robust, fatigue-resistant grouting solutions engineered to deliver exceptional load transfer, fast installation, and long-term stability for steel and hybrid tower foundations. Built to perform in the demanding realities of modern wind farms.

ULTRA-HIGH PERFORMANCE SOLUTIONS FOR STEEL & HYBRID TOWERS

Cementitious grouts & mortars
Epoxy grouts & adhesives

3

2

Comprehensive systems for durable, sustainable, and high-performing concrete towers. Engineered to withstand harsh climates and dynamic loads while enabling greater hub heights and optimized long-term strength.

TAILOR MADE SOLUTIONS FOR CONCRETE TOWERS

Cementitious grouts & mortars
Epoxy adhesives
Concrete protection



1

3

High-performance protection systems that enhance structural integrity, safety, and service life. By reducing deterioration and repair needs, they support continuous energy production with minimal downtime and maximum reliability.

MAINTENANCE, REPAIR & LIFECYCLE EXTENSION

Concrete repair	Corrosion protection
Crack repair	Structural strengthening
Waterproofing	

4

Next-generation admixture technologies designed to enhance strength, production efficiency, and long-term durability of precast tower segments and cast-in-place concrete. Perfect for building higher, stronger, and more resilient wind turbine structures.

ADVANCED ADMIXTURES FOR PRECAST SEGMENTS & FOUNDATIONS

Superplasticizers	Retarders & accelerators
Macro & micro fibers	Water reducers
Pumping agents	Mould release agents
Antifreeze agents	Air entraining agents
Curing compounds	





ULTRA-HIGH PERFORMANCE GROUTS FOR TOWERS

AS ONSHORE WIND TURBINES grow taller and more powerful, the demands placed on their foundations continue to rise.

At the heart of every safe and reliable installation lies a material that often goes unnoticed.

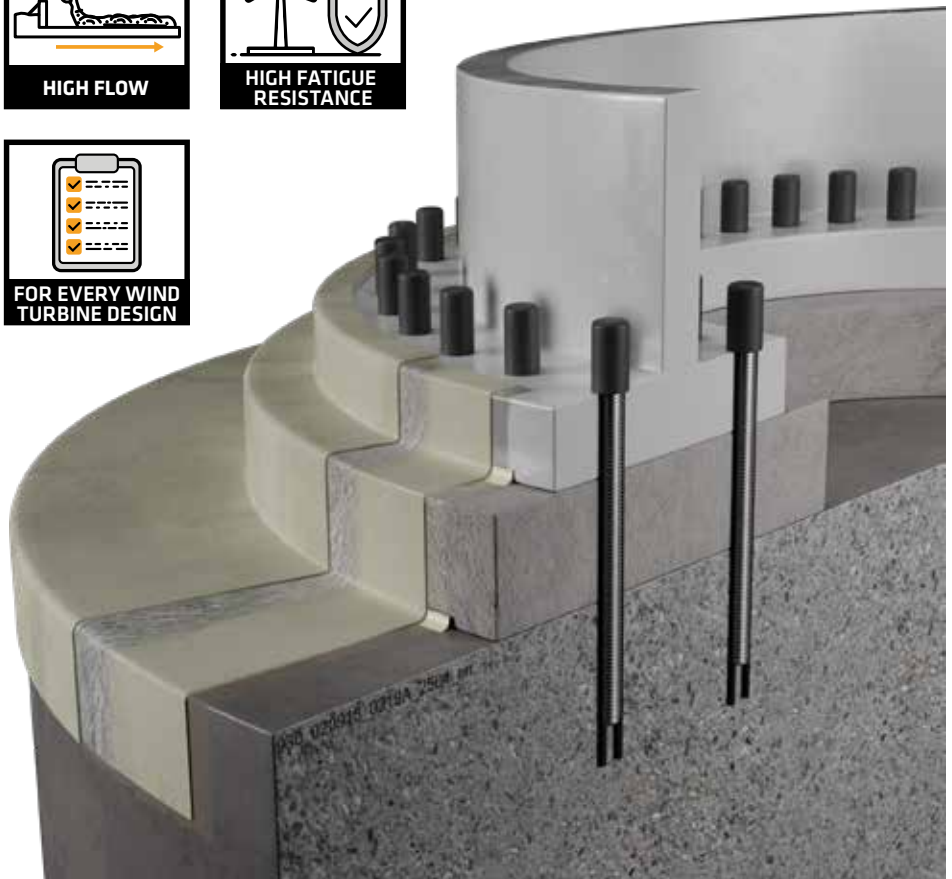
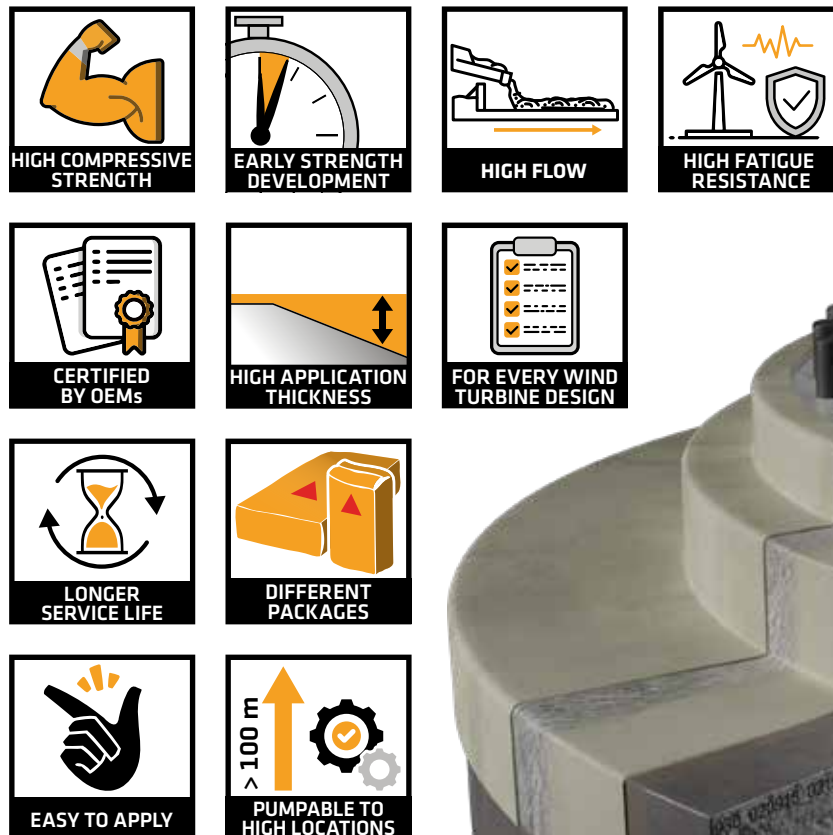
Ultra-high performance grout is the critical link between the wind turbine tower and its foundation. It ensures reliable load transfer, absorbs extreme static and dynamic forces, and provides the long-term stability every wind farm depends on.

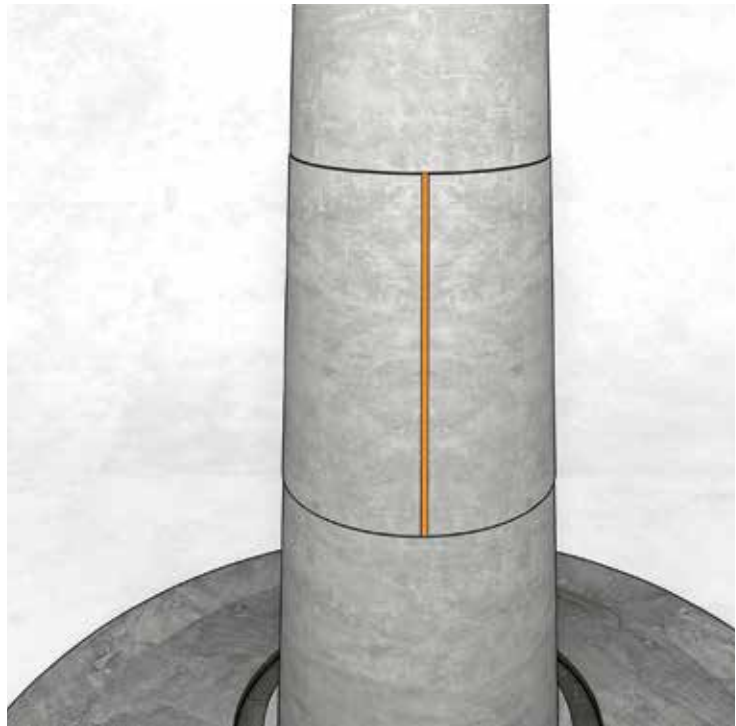
For all types of onshore wind turbines with steel, hybrid and concrete towers, the right grout enables fast installation, high early strength, and durable performance, even under

demanding onshore conditions. Outstanding flowability, pumpability, and shrinkage-compensated formulations allow efficient application and long-lasting, fatigue-resistant foundations.

Hybrid and concrete towers require grout to be pumped over 100 m to internal joints, an extreme challenge that demands exceptional stability and long-distance pumpability. Sika's proven formulations ensure consistent performance at height, enabling safe and reliable installation for next-generation tower designs.

BENEFITS OF SIKA SOLUTIONS





Sika solution	Main Characteristics
SikaGrout®-9400	Ultra-high strength, fatigue resistant cement-based grout for onshore wind turbines with steel towers
SikaGrout®-9320 BE	Ultra-high strength, fatigue resistant cement-based grout designed for steel & hybrid towers with reduced CO ₂ footprint
SikaGrout®-295	High performance, cementitious grout for onshore wind turbines with concrete towers
Sikadur®	Epoxy adhesives for precast segment bonding

16 STEPS TO SUCCESSFUL GROUTING



1. CONFIRM THE QUANTITY OF GROUT NEEDED

Count the number of bags to ensure that the right amount of grout is available before starting the mixing of the material. This value needs to be recorded by the grouting contractor before the procedure begins.



2. RECORD WEATHER CONDITIONS AND CHECK NECESSARY PROTECTION MEASURES FOR THE APPLICATION

During the application, the substrate and ambient temperatures should be recorded and controlled. Ambient humidity also needs to be taken into consideration for the water ratio and the curing methods. The values should be recorded by the grouting contractor before and during the grouting works.

If rain is expected, a shelter or tent must be installed before pouring the grout to avoid any rain damage.



3. TIMING AND PLANNING FOR BREAKS

Breaks should be planned so that there is no interruption in mixing; maintain a continuous pouring process per foundation and avoid stop-go during the application. The detailed plan should be indicated by the contractor for each specific project so that breaks are accommodated for.



4. CONFIRM POWER AND WATER SUPPLIES

Power for equipment should be approved for use for each project. Always conform to local laws and restrictions when using diesel powered equipment. When using an electric motor, check to see if the voltage requirement is available on the job site. Check to confirm if there is an adequate supply of clean water on the job site to fill the bowser or IBC containers.



5. SUBSTRATE PREPARATION

Cleaning the substrate with high water pressure. This is essential to ensure that no loose particles will block the areas where the grout needs to flow.



6. INSPECTION OF THE SUBSTRATE

The concrete substrate in the area to be grouted should be inspected in advance to check for cracks and other defects and should be repaired accordingly for each specific project.



7. INSTALLATION AND CHECKING THE FORMWORK

Install the formwork and seal it. It should be waterproof to avoid leaks.



8. PREPARATION OF THE EQUIPMENT

- a. Ensure that the equipment is functioning correctly.
- b. Verify that the right amount of grout and water is available. Account for at least 10 % of excess material.
- c. Check to see if the OC devices are ready.
- d. Check the hose, including its length, arrangement, and couplings. Do not use hydraulic hoses.
- e. Prepare the grout lines. You can lubricate them with cementitious slurry made of cement and water or a pre-batch slurry.
- f. Verify that the substrate is properly prepared and pre-wet before starting the pumping procedure.
- g. The mixing of the SikaGrout® must be done only with clean water, without any other additional products. Refer to the latest product data sheet of the grout before starting the mixing process.
- h. The SikaGrout® can be mixed with a low hand drill mixer for very small quantities or using a force action mixer. (Refer to the product data sheet for detailed instructions).



9. QUALITY CONTROL

The required QC protocol must be agreed before starting the grouting works with the supervisor responsible. The grouting contractor must fill in the quality control sheets during the grouting works.



10. GROUTING PROCESS: MIXING AND PUMPING

Mix the grout with the right amount of water according to the ambient conditions. Once a homogeneous mix is achieved, normally after 5 minutes of mixing, start pumping.



11. QUALITY CONTROL: FILL THE CHECK LIST



12. CURING OF THE GROUT

The application should be protected from wind, rain, frost and direct sunlight. The curing period is dependent on ambient conditions. The application should be moistened to avoid premature drying in warm, dry weather conditions. Once the grout is ready, cure it under a layer of water (recommended to be kept for at least 3 days).

Continue with this curing method until the final set of the grout (determined at the time at which one cannot penetrate the grout with a pointed trowel). Consider the strength development curve at different temperatures to decide when the formwork can be removed or when the bolts can be stressed.



13. CLEANING TOOLS

Clean all tools and application equipment with water immediately after use. The hardened material may only be removed mechanically.



14. WASTE DISPOSAL

Dispose of unwanted material responsibly through licensed waste disposal contractors, in accordance with local legislation and/or regional authority requirements.

(For detailed information, refer to the material safety data sheet).



15. CONTINGENCIES: SOLUTION PROPOSALS

Check with Sika Specialists for further details.



16. FINAL INSPECTION

MAINTENANCE, REPAIR & LIFECYCLE EXTENSION

Extending the service life of wind turbines is essential as renewable energy demand grows. Foundations face weather, dynamic loads, and long-term wear, making proactive maintenance key to preserving structural integrity and minimizing downtime. By protecting foundations early and effectively, operators reduce repair needs, lower lifecycle costs, and keep energy production running smoothly. With Sika's proven solutions for protection and repair, wind farms can operate safely, reliably, and sustainably for many years.





CONCRETE REPAIR SOLUTIONS

ONSHORE WIND TURBINE FOUNDATIONS endure extreme environmental conditions and continuous mechanical loads throughout their lifespan.

Over time, these factors can lead to structural deterioration, including cracking in concrete, corrosion of reinforcement, and overall weakening of foundation components. If left unaddressed, these issues can compromise structural integrity and safety, potentially reducing the turbine's operational efficiency and lifespan. Therefore, timely damage assessment and repair are essential to maintaining the foundation's strength and reliability.

Effective structural repair restores the foundation's stability, ensuring long-term performance and operational safety. By applying advanced repair and reinforcement techniques, existing damages can be mitigated while preventing future deterioration. This proactive approach not only enhances structural safety but also reduces maintenance costs and extends the service life of wind energy infrastructure. Regular monitoring and timely interventions are key to ensuring the continued efficiency and sustainability of onshore wind farms.



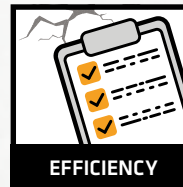
BENEFITS OF SIKA SOLUTIONS



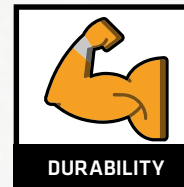
FULL PRODUCT RANGE
Includes all material technologies and accessories.



COMPATIBILITY
Compatible with other Sika systems.



EFFICIENCY
Comprehensive solutions for all types of damage – even the smallest cracks.



DURABILITY
High quality materials offering long-lasting protection.

Sika solution	Main Characteristics
Sika MonoTop® and SikaEmaco®	1-component, fiber-reinforced, low shrinkage structural repair mortars for re-profiling damaged concrete and restoring structural integrity
Sikadur®	2-component, epoxy-based adhesives to ensure structural bonding during repair
Sikadur® and SikaInject®	2-component, epoxy- and PU-based injection resins to structurally repair cracks

WATERPROOFING SOLUTIONS

WATERPROOFING IS ESSENTIAL TO ensuring the longevity, durability, and structural integrity of onshore wind turbine foundations.

Exposure to moisture, freeze-thaw cycles, and harsh environmental conditions can lead to concrete deterioration, reinforcement corrosion, and costly repairs. By implementing advanced waterproofing solutions, wind farm operators can proactively prevent water infiltration, protect against chemical and mechanical damage, and enhance the resilience of turbine foundations, ultimately reducing maintenance needs and maximizing operational efficiency.

Sika's comprehensive range of waterproofing technologies is designed to meet the demanding conditions of wind energy infrastructure. From flexible membrane systems and liquid-applied coatings to waterproofing admixtures, joint sealants, and high-performance injection grouts, our solutions provide superior protection against water ingress. Engineered for easy application and long-lasting durability, these watertight systems ensure seamless performance and extended service life, even in the most challenging environments.

BENEFITS OF SIKA SOLUTIONS



FULL PRODUCT RANGE

Includes all material technologies and accessories.



COMPATIBILITY

Compatible with other Sika systems.



DURABILITY

Resistant to harsh climatic conditions at wind farms.



EASY APPLICATION

No need for special equipment.

Sika solution	Main Characteristics
Sikalastic®	High-performance, liquid-applied polyurethane or cementitious waterproofing membranes
Sikaflex®	Moisture-curing, elastic polyurethane sealants

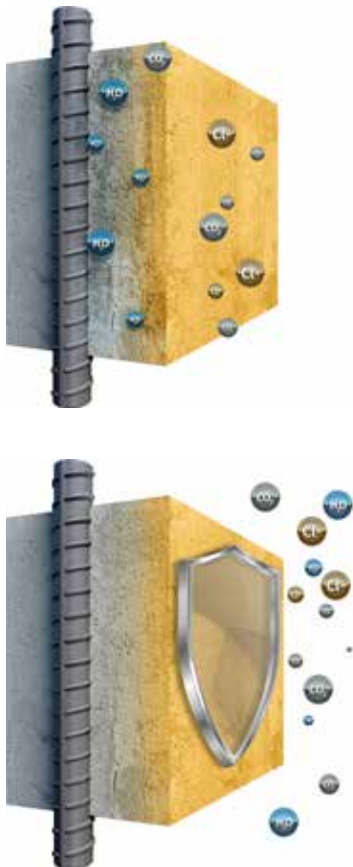


SOLUTIONS FOR CORROSION PROTECTION

STEEL REINFORCEMENT IS THE backbone of wind turbine foundations and precast tower elements, but it is also highly vulnerable to corrosion caused by carbonation, chloride ingress, and moisture penetration.

Once corrosion sets in, it can rapidly compromise structural integrity, safety, and service life, leading to costly repairs or even premature failure. Proactive corrosion protection is therefore critical in extending the lifespan of wind energy infrastructure, ensuring that turbines continue to perform reliably in demanding onshore environments.

Our advanced corrosion protection solutions provide a comprehensive approach to safeguarding steel reinforcement in concrete. From corrosion-inhibiting admixtures and protective coatings to galvanic anodes and hydrophobic treatments, these technologies effectively block aggressive agents, mitigate corrosion cells, and maintain the passive layer around steel bars. Designed for long-term durability, ease of application, and sustainability, our systems deliver a robust defense that ensures wind turbine foundations and tower components remain safe, resilient, and efficient throughout their entire service life.



BENEFITS OF SIKA SOLUTIONS



No need for special equipment.
Minimize downtime.



Offers maximized service life to structures.



Compatible with other Sika systems.



Solutions for every type of corrosion risk.
Low CO₂ footprint.
Available in different colors.

Sika solution	Main Characteristics
Sikagard®	Silane-based corrosion inhibitors and water repellents
Sikagard®	Protective acrylic coatings with crack bridging
Sika® Ferrogard®	Galvanic anodes

SOLUTIONS FOR STRUCTURAL STRENGTHENING

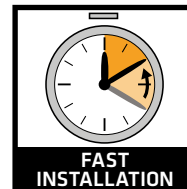
WITH THE GROWING DEMAND for renewable energy, extending the service life of existing wind turbines has become more important than ever.

Full replacements are costly and resource-intensive, while strengthening existing foundations offers a sustainable, economical, and efficient way to ensure continued reliability and safety. By reinforcing foundations, operators can maintain performance, adapt to higher loads, and support the transition toward a cleaner energy future.

Sika's advanced CFRP strengthening systems offer a proven solution for upgrading existing foundations with speed and efficiency. Lightweight yet extremely strong, these materials are easy to transport and install and they significantly reduce downtime during the strengthening process. Backed by a comprehensive portfolio and decades of global experience, Sika ensures that wind energy infrastructure remains strong, resilient, and ready for the future.



BENEFITS OF SIKA SOLUTIONS



**FAST
INSTALLATION**

Fast application and curing.
Minimal downtime for energy production.



LIGHTWEIGHT

Does not increase weight during strengthening.



**LONG-TERM
PERFORMANCE**

Durable systems for extended service life.

Sika solution	Main Characteristics
Sika® CarboDur®	Carbon fiber plates for structural strengthening
SikaWrap®	Carbon fiber fabric for structural strengthening
SikaDur®	2-component epoxy adhesives for structural strengthening



SOLUTIONS FOR CONCRETE ADMIXTURES

PRECAST CONCRETE ELEMENTS PLAY a crucial role in the construction of concrete and hybrid wind turbine towers as well as their foundations, offering precision, efficiency, and durability.

However, to meet the demanding conditions of wind energy infrastructure, advanced concrete admixtures are essential in optimizing the performance of these precast components. By improving workability, strength development, and durability, admixtures enable superior crack resistance, reduced shrinkage, and enhanced load-bearing capacity, ensuring the long-term stability of wind turbine structures.

Sika's specialized admixtures such as high-range water reducers, accelerators, and durability-enhancing additives significantly improve concrete quality, production efficiency, and sustainability. These solutions allow for faster demolding, reduced curing times, and increased early strength, which are vital for the rapid and cost-effective production of precast components. Additionally, by enhancing freeze-thaw resistance, mitigating shrinkage, and reducing permeability, admixtures contribute to longer service life and reduced maintenance needs, ensuring reliable performance in even the harshest environmental conditions.



BENEFITS OF SIKA SOLUTIONS



High early strength for rapid demolding.



Optimized mixing and placement performance.



Improved resistance to cracking and shrinkage.



Improved performance with fibers and reduced permeability.

Sika solution	Main Characteristics
Sika® ViscoCrete®	Superplasticizer to improve workability and increase strength and durability of high performance concrete
SikaPump®	Pumping agent to enhance pumpability and reduce pumping pressure, especially in case of difficult mix designs and unfavourable grading curves
Sika® ViscoFlow®	Superplasticizer for production of mass concrete and realization of extended workability times
SikaFume®	Additive based on silica fume to enhance durability
SikaFiber®	Micro- and macrofibers for enhanced durability and reinforcing of concrete

YOUR SINGLE SOURCE SUPPLIER



ROOFING



CONCRETE



JOINT SEALING



SHOTCRETE



GROUTING & ANCHORING



CONCRETE REPAIR & PROTECTION



STRUCTURAL STRENGTHENING



TUNNELING



FLOOR & WALL SYSTEMS



WATERPROOFING SYSTEMS



MASONRY



MINING

CONTACT US FOR MORE INFORMATION



Sika Canada Inc., a member of the Sika Group, is a leader in the field of speciality chemicals for construction and manufacturing industries. Our product lines feature high quality roofing systems, concrete admixtures, mortars and resins, sealants and adhesives, structural strengthening components, industrial and decorative flooring, as well as protective coatings and waterproofing systems. Our expertise is borne out of a global presence and served by strong, local support. Sika has earned the trust of our customers for over 100 years, by delivering the highest standards of commitment and partnership.

*Our most current General Sales Conditions shall apply.
Please consult the most current local Product Data Sheet prior to any use.*

SIKA CANADA INC.
Head Office
601 Delmar Avenue
Pointe-Claire, Quebec
H9R 4A9

Other locations
Boisbriand (QC)
Brantford; Cambridge; Sudbury; Toronto (ON)
Edmonton (AB); Surrey (BC)

1-800-933-7452
www.sika.ca

© Sika Canada Inc. / 06.2026

BUILDING TRUST
CONSTRUIRE LA CONFIANCE

