



LOCTITE®

**MAINTAIN, REPAIR, REBUILD, PROTECT
SOLUTIONS FOR THE OIL,
GAS, AND CHEMICAL
INDUSTRIES**

Henkel

Henkel Adhesive Technologies

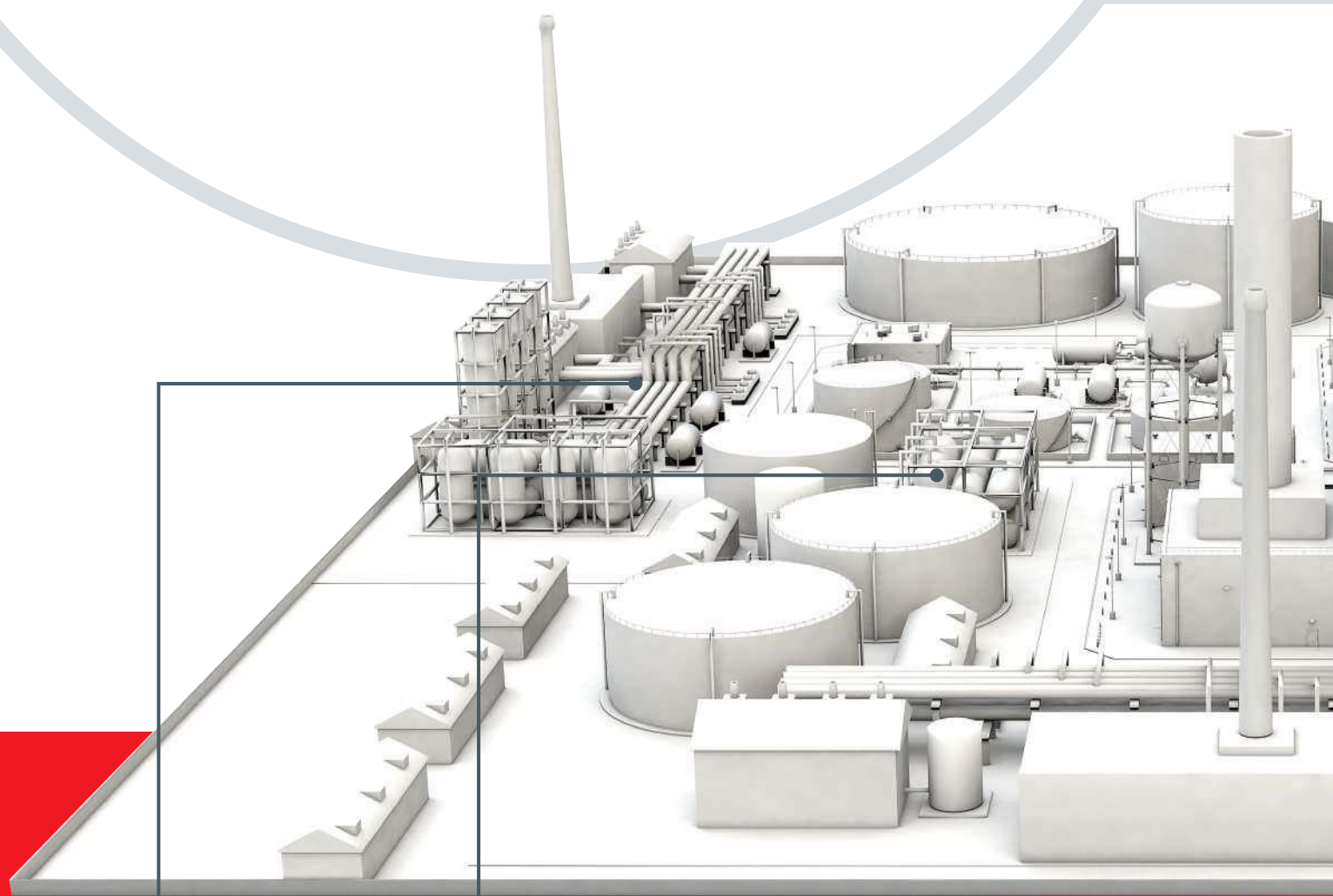
LOCTITE® – Complete Solutions for Oil, Gas, and Chemical Industry.

Repair, rebuild, maintain and protect your assets

Maximizing production and preventing unplanned downtime are critical in the oil, gas, and chemical industry. At LOCTITE® — the leading solution provider for adhesives, sealants and functional coatings worldwide — we understand the challenges you face because we know the oil, gas, and chemical industry inside and out.

With more than **50 years of experience** in oil, gas, and chemical industry, we'll help you keep your plants and equipment in top operating condition. Our **LOCTITE® brand** adhesives are known around the world for reliability and quality.

Let us show you how our LOCTITE® brand can help you **reduce costs, increase reliability, and improve efficiency.**



PUMPS:

LOCTITE® adhesives and coatings to repair and rebuild

MECHANICAL PARTS:

BONDERITE® cleaners for effective cleaning

Why LOCTITE®?

As the leading solution provider for adhesives, sealants, and functional coatings worldwide, we work as a partner with the oil, gas, and chemical industry.

COMPLETE PRODUCT PORTFOLIO

A full range of solutions for the oil & gas industry.

INNOVATION

Solutions developed with our customers to help solve their toughest challenges.

TECHNICAL EXPERTISE

Engineering support to help you improve your operations.

GLOBAL REACH

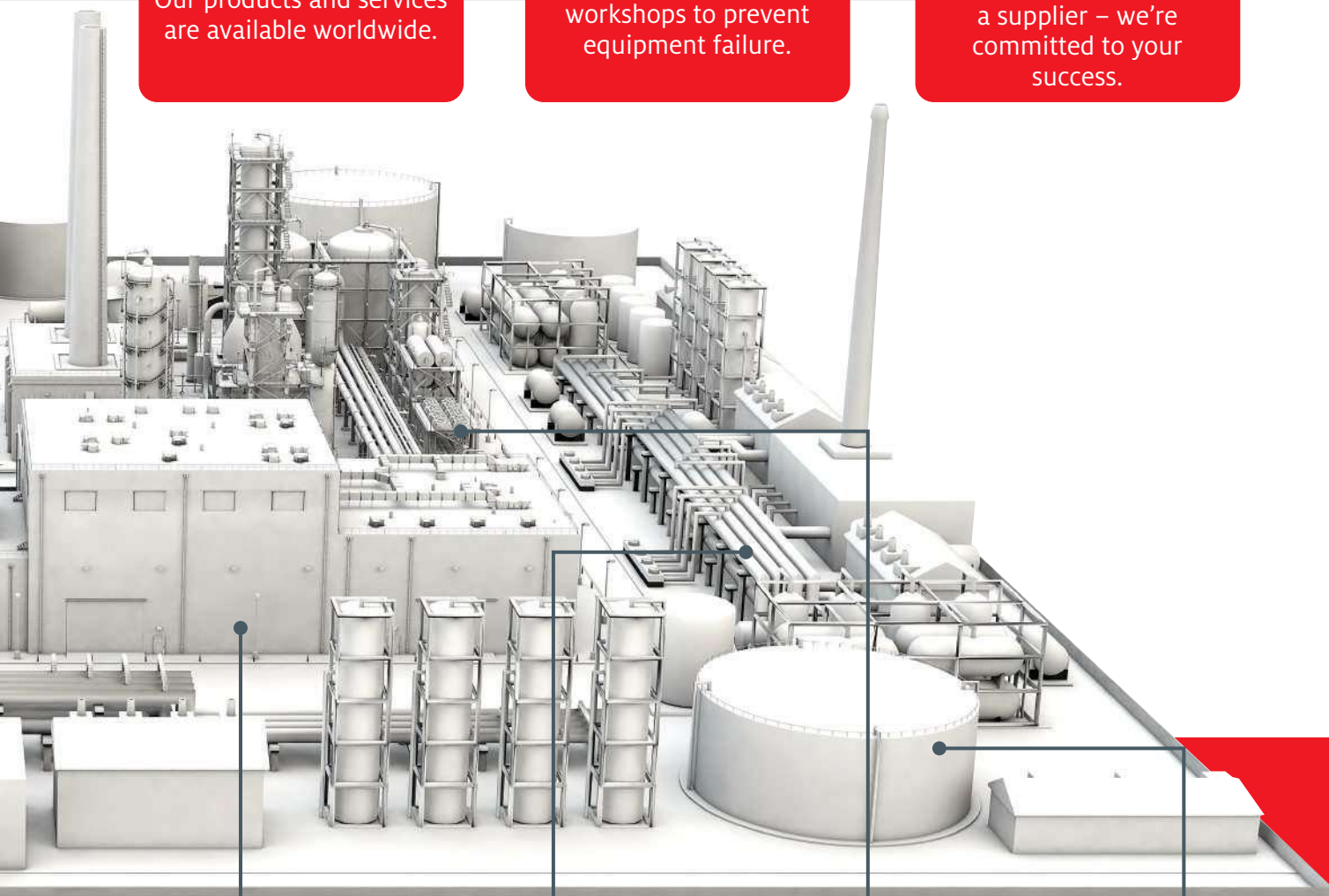
Our products and services are available worldwide.

TRAINING

On-site maintenance workshops to prevent equipment failure.

CUSTOMER PARTNERSHIP

LOCTITE® is more than a supplier – we're committed to your success.



FLOORS:

LOCTITE® concrete repair and coatings to protect against chemical attacks

PIPES AND VALVES:

LOCTITE® adhesives and coatings to prevent leaks and corrosion and resist wear

HEAT EXCHANGERS:

LOCTITE® coatings to prevent corrosion

TANKS:

LOCTITE® coatings and flexible sealants for long-term surface protection and reliability

TANKS

CORROSION PROTECTION FOR TANK ROOF

SITUATION:	SOLUTION	BENEFITS
Roofs on tanks become corroded in saline environment, resulting in severe corrosion and through-holes. This can slow down operation and cause an accident.	<ul style="list-style-type: none"> • TEROSON® MS 930 - Flexibility allows for sealing of welded joints • LOCTITE® EA 3478 to repair through-holes • LOCTITE® PC 7332 for protection 	<ul style="list-style-type: none"> • Better reliability due to flexibility of sealing solution • Long-term tank roof patch repair

TANK ROOF PATCH REPAIR

SITUATION:	SOLUTION	BENEFITS
Through-holes can develop on the roofs of tanks, due to water accumulation and corrosive environments, which reduce plate thickness.	<ul style="list-style-type: none"> • TEROSON® MS 930 - Flexibility allows for sealing of welded joints • LOCTITE® EA 3478 to repair through-holes • LOCTITE® PC 7332 for protection 	<ul style="list-style-type: none"> • Better reliability due to flexibility of sealing solution • Long-term tank roof patch repair



TANK BOTTOM SEALING

SITUATION:	SOLUTION	BENEFITS
Moisture and water enters gaps between the tank annular plate and concrete base which corrodes and damages the bottom of the tank.	<ul style="list-style-type: none"> • TEROSON® MS 930 – Flexible sealant for gap filling between metal plate and concrete base • LOCTITE® SF 754 - Before sealing, converts existing rust into protective primer on metal plate 	<ul style="list-style-type: none"> • High elongation capability • Excellent adhesion with metal plate and concrete • UV resistant makes it ideal for exterior application

LEAKAGE REPAIR WIND GIRDER

SITUATION:	SOLUTION	BENEFITS
Tanks get corroded under insulation and lead to leakage around the wind girder. This leads to continuous leakage of fuel and a safety hazard.	<ul style="list-style-type: none"> • Fast curing, easy to mix and apply Metal Rebuild Solutions such as LOCTITE® EA 3478 or LOCTITE® EA 3463 • Topcoat with a Protective Coating LOCTITE® PC 7227 	<ul style="list-style-type: none"> • Leakage is sealed and strengthened, no replacement necessary • Reduced downtime, increased life of wind girder and extended corrosion protection



PIPES

THREAD SEALING FOR OIL PIPE

SITUATION:	SOLUTION	BENEFITS
Piping often encounters poor performance due to harsh chemical environments. Other solutions do not reliably prevent galling and leakage.	<ul style="list-style-type: none"> • LOCTITE® Thread Sealants such as LOCTITE® 5113 - General-purpose solution, typically used for lubricating and sealing threaded pipes and pipe fittings 	<ul style="list-style-type: none"> • Reliable sealing solution • High lubricity prevents thread galling and never slows down operation • Allows for easy disassembly



PIPE EXTERNAL CORROSION PROTECTION

SITUATION:	SOLUTION	BENEFITS
Small cracks and corrosion on piping results in thinned external pipe walls.	<ul style="list-style-type: none"> • LOCTITE® EA 3478 - After proper preparation, apply over the thin cracks • Topcoat with a Protective Coating such as LOCTITE® PC 7255 	<ul style="list-style-type: none"> • Decreased downtime • Less production losses • Strong repair against corrosion

UNDER PIPE SUPPORT

SITUATION:	SOLUTION	BENEFITS
There is a metallic wear pad, mismatched underneath the pipe, which is reducing wall thickness, due to galvanic corrosion. This is a large safety concern around the plant.	<ul style="list-style-type: none"> • LOCTITE® EA 3478 – Superior metal filled epoxy resin system is ideal for metal rebuilding. Does not rust • LOCTITE® PC 7227 GY - Ceramic fillers provide maximum protection against wear 	<ul style="list-style-type: none"> • Increased life of pipes, making them more reliable • Resistant to corrosion, chemical attacks and abrasion • Solutions can be used on the pipe support, as well as the facility's piping

INFRASTRUCTURE

PLANT EQUIPMENT CORROSION PROTECTION

SITUATION:	SOLUTION	BENEFITS
Many areas inside a plant corrode, including trenches, foundations, pump bases, floors, walls of storage tanks and battery room floors.	<ul style="list-style-type: none"> • LOCTITE® PC 7319 - after surface preparation, apply to concrete and/or metal 	<ul style="list-style-type: none"> • Advanced two-part epoxy is designed to protect against chemical attacks and corrosion • Creates a safer work environment



JETTY STRUCTURE REPAIR OF CONCRETE ROAD AND EXPANSION JOINTS

SITUATION:	SOLUTION	BENEFITS
Edges and surfaces on a jetty structure break due to impact in coastal environments. The solution needs to bond to existing surfaces including old concrete and rusted reinforcement, as well as withstand other chemicals.	<ul style="list-style-type: none"> • LOCTITE® PC 9416 - Ideal for long-term repairs on exposed or damaged reinforced concrete 	<ul style="list-style-type: none"> • Increased reliability • Increased worker safety • Long-term repair of jetty • Solution can be used in other applications within the facility



INFRASTRUCTURE

SULFUR PIT REPAIR/ PROTECTIVE COATING

SITUATION:	SOLUTION	BENEFITS
Regular concrete patch work was not withstanding the harsh working environments inside the sulfur pit. There was a loss of integral strength and extended corrosion.	<ul style="list-style-type: none"> • LOCTITE® SF 754 - After surface preparation, apply to convert rust and serve as a base • LOCTITE® PC 9416 - Apply to repair corrosion 	<ul style="list-style-type: none"> • Fast repair and protection resulting in reduced downtime • Restore damaged sulfur pit and defend from further future damage

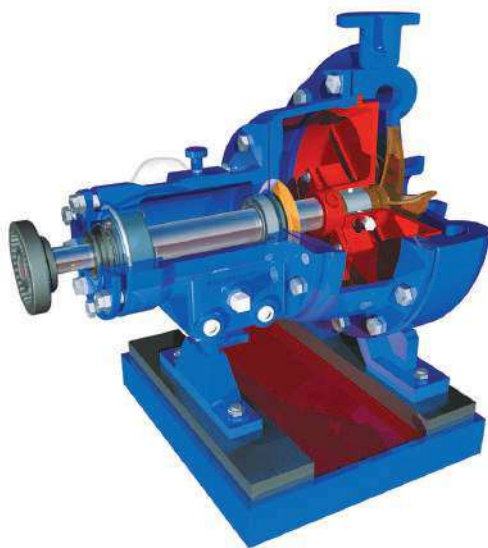


BASE FRAME AND CONCRETE CORROSION PROTECTION

SITUATION:	SOLUTION	BENEFITS
Motor body and base frames are severely corroded due to chemicals in its environment.	<ul style="list-style-type: none"> • LOCTITE® PC 7319 - After surface preparation, apply on the motor and base frame 	<ul style="list-style-type: none"> • Provides excellent resistance to chemical environment, protecting the motor and base frame. • Creates a safer work environment



Rotating Equipment



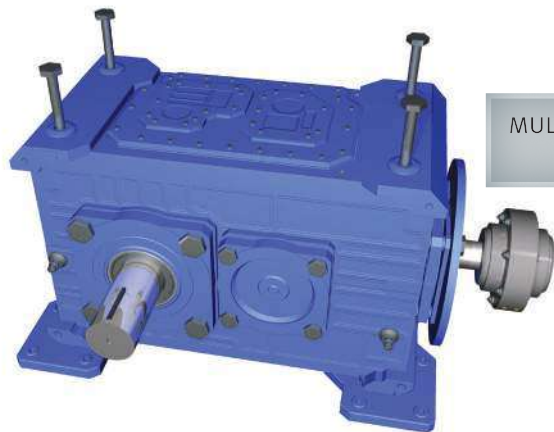
COOLING WATER PUMP

CRUDE OIL PUMP

OTHER HYDROCARBON
PROCESSING PUMPS

PUMP REPAIR

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
Corrosion inside pump housing Pitting holes Loss of efficiency	WEAR AND CORROSION PROTECTION: LOCTITE® adhesives and protective coatings Pump Maintenance and Training Program	<ul style="list-style-type: none"> • Improved pump efficiency • Cost savings compared to new pump • Increased Mean Time Between Failure



MULTIPLE EQUIPMENT
WITH GEARBOXES

GEARBOX MAINTENANCE

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
Leakage at flange Leakage at fittings and other threaded connections	FLANGE/THREAD SEALING: LOCTITE® Cleaners, Gasket Removers, Flange Sealants, Thread Sealants Gearbox maintenance and training program	<ul style="list-style-type: none"> • Fast solution – gearbox can be returned to service quickly • Reliable sealing solution for all flange shapes

Additional rotating equipment we maintain:

- Compressors
- Engines and turbines
- Ventilators and fan blades
- Centrifuges
- Conveyor systems



Our LOCTITE® solutions provide:

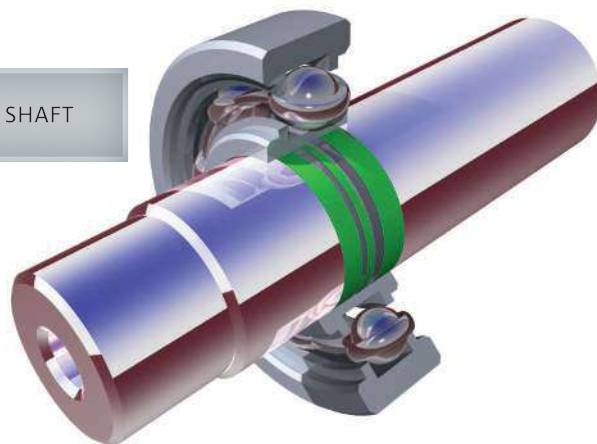
- Corrosion protection
- Improved efficiency
- Increased reliability



SHAFT REPAIR

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
Worn shaft at bearing seat due to overload at bearing area	METAL REPAIR: LOCTITE® Cleaners and Superior Metal Shaft Maintenance and Training Program	<ul style="list-style-type: none"> • Cost savings by bringing water pump back to service quickly • High compression strength of Superior Metal acts like a new shaft

WATER PUMP SHAFT



Henkel Engineering Services

Detailed in-plant surveys that identify potential cost savings and maintenance improvements.

<https://www.henkel-adhesives.com/ae/en/industries/industrial-maintenance-repair.html>

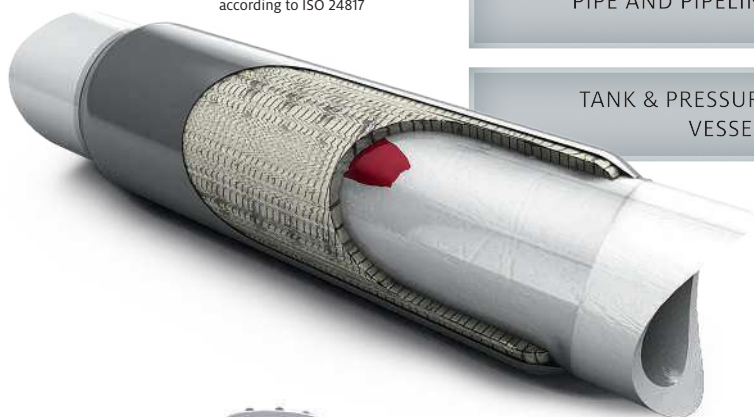
Static Equipment



LOCTITE® Composite Pipe Repair
 Certified according to ISO 24817 and
 ASME PCC-2 Standard
 Also Certified by TÜV Rheinland
 according to ISO 24817

PIPE AND PIPELINES

TANK & PRESSURE
 VESSELS



COMPOSITE PIPE REPAIR

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
External & internal corrosion or through wall defect	LOCTITE® COMPOSITE PIPE REPAIR: LOCTITE® Corrosion Inhibitor, Superior Metal, Glass & Carbon Fiber Tape, Hand Lay Up Resin, Sprayable Ceramic	<ul style="list-style-type: none"> • Extend pipe lifetime up to 20 years • Avoid future corrosion • Fast and cost-efficient repair compared to welding

HEAT EXCHANGER REPAIR

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
MILD STEEL: Corrosion and scale up at tube and cover STAINLESS STEEL: Galvanic corrosion	CORROSION PROTECTION: LOCTITE® Brushable Ceramic Coating	<ul style="list-style-type: none"> • Fast return to service reduces costs • Reliable coating at standard and elevated temperatures • Avoid future electrical conductivity

TUBE HEAT EXCHANGER

FRONT PLATE AND COVER



Additional static equipment we maintain:

- Reactors
- Fired heaters
- Screens and filters
- Metal and concrete construction



Our LOCTITE® solutions provide:

- Corrosion protection
- Longer equipment life
- Cost savings



TANK COATING

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
Corrosion and contamination of inside walls of metal tanks	CORROSION PROTECTION: LOCTITE® Corrosion Inhibitor, Sprayable Protective Coatings	<ul style="list-style-type: none"> • Long-term surface protection increases reliability • Lower maintenance costs due to less frequent re-coating

TANK INTERIOR



CONCRETE FLOOR COATING

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
Surface not resisting chemical aggression from hydrocarbons, causing cracks in coatings Risk of leaking into the ground	CONCRETE REPAIR AND FOUNDATION COATING: LOCTITE® Concrete repair and coating product range	<ul style="list-style-type: none"> • Highly reliable concrete coating protects against chemical aggression • Eliminated and reduced risk of leakage into the ground

CONCRETE FLOORS
THROUGHOUT PLANT

FOUNDATIONS



Information and Resources

Maintenance guides, application videos, catalogs, case studies and more – just a click away.

Visit: <https://www.henkel-adhesives.com/ae/en/industries/industrial-maintenance-repair.html>

Cleaning Solutions

GENERAL CLEANING

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
Heavy contamination on equipment and floors due to hydrocarbon spills	BONDERITE® Cleaners	<ul style="list-style-type: none">• Heavy duty all-in-one cleaners for equipment and floor cleaning applications
		EQUIPMENT AND MECHANICAL PARTS
		HEAT EXCHANGER, PIPES & TANKS
		FLOORS



Additional cleaning solutions we provide:

- Tank cleaning
- Pipe cleaning
- Mechanical parts cleaning



Our BONDERITE® solutions provide:

- Improved efficiency
- Increased reliability
- Improved safety



CORROSION INHIBITION

	YOUR CHALLENGE	OUR SOLUTION	BENEFITS
TUBES AND PUMPS	Severe equipment corrosion during acidization and cleaning processes	BONDERITE® S-AD Corrosion Inhibitor Product Range	<ul style="list-style-type: none"> • Protect tubing and equipment during acidizing process • Reduce the attack of pickling acids, extending equipment lifetime • Improved efficiency and reduced cost
BOILER, HEAT EXCHANGER, CRACKING UNIT, DISTILLATION TOWER	Loss of metal strength decreasing equipment efficiency, increasing costs		



On-Site Training

Our maintenance workshops can help your staff improve safety and reliability, and reduce costs.

Visit: <https://www.henkel-adhesives.com/ae/en/industries/industrial-maintenance-repair.html>

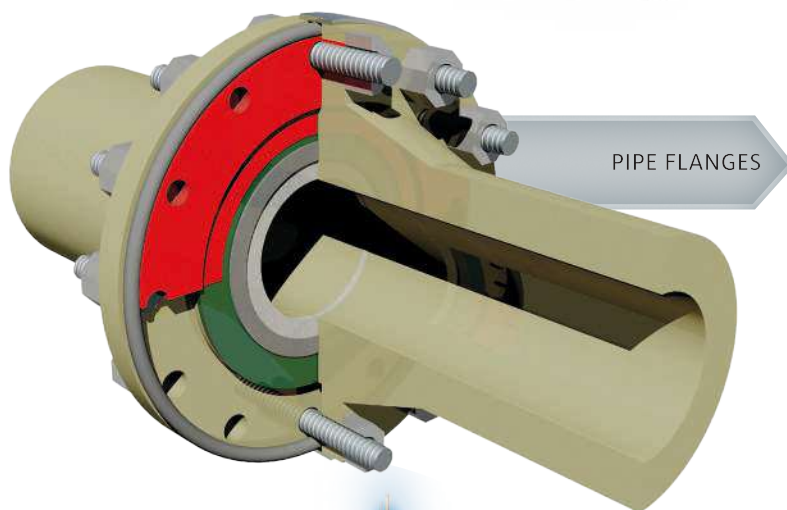
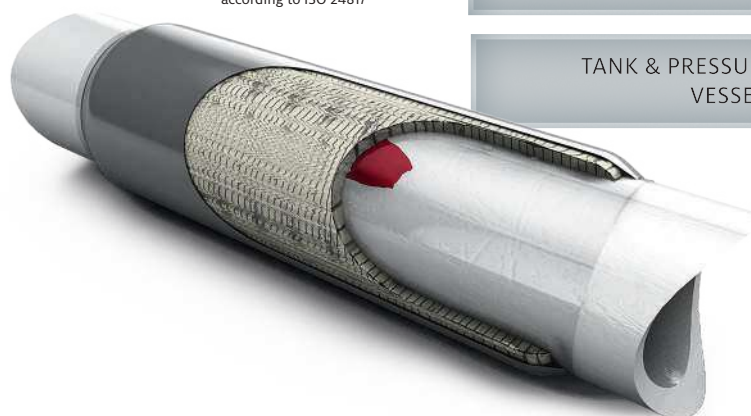
Upstream Onshore & Offshore Facilities



LOCTITE® Composite Pipe Repair
 Certified according to ISO 24817 and
 ASME PCC-2 Standard
 Also Certified by TÜV Rheinland
 according to ISO 24817

PIPE AND PIPELINES

TANK & PRESSURE
 VESSELS



PIPE FLANGES

COMPOSITE PIPE REPAIR

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
External & internal corrosion or through wall defect	LOCTITE® COMPOSITE PIPE REPAIR: LOCTITE® Corrosion Inhibitor, Superior Metal, Glass & Carbon Fiber Tape, Hand Lay Up Resin, Sprayable Ceramic	<ul style="list-style-type: none"> • Extend pipe lifetime up to 2, 10 or 20 years, as required • Avoid future corrosion • Fast and cost efficient repair compared to welding

FLANGE SEALING

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
Crevice corrosion caused by moisture Bi-metallic corrosion of flange face Corrosive necking of bolts Failure of gasket or gasket face	FLANGE SEALING REPAIR SYSTEM: LOCTITE® Instant Adhesive for O-Ring Bonding LOCTITE® Sprayable Ceramic	<ul style="list-style-type: none"> • Increased pipeline system integrity • Prevent flange degeneration • Simple, cold work solution • Eliminate flange replacement • In situ repair

Additional Onshore & Offshore support we provide:

- Staff training on correct application method
- On-site consulting and support for application and project development



Our LOCTITE® solutions provide:

- Longer equipment lifetime
- Cost savings
- Increased reliability



CORROSION & WEAR PROTECTION

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
External corrosion and aggressive environment Aging of plant facility and equipment due to corrosion	CORROSION PROTECTION WITH LOCTITE® PROTECTIVE COATINGS: LOCTITE® Sprayable Ceramic LOCTITE® Brushable and Sprayable Coatings	<ul style="list-style-type: none"> • Long-term surface protection increases reliability • Lower maintenance costs due to less frequent re-coating

STEEL CONSTRUCTION

PIPEWORK & TANKS



GENERAL MAINTENANCE

YOUR CHALLENGE	OUR SOLUTION	BENEFITS
Leakage of rotating equipment and tubing Loosening of bolts and fastener	LOCTITE® MACHINERY ADHESIVES: LOCTITE® Thread Sealants for Tubing LOCTITE® Flange Sealants for Rotating Equipment LOCTITE® Threadlocker for all equipment	<ul style="list-style-type: none"> • Eliminate tubing and equipment leakage • Increase plant and equipment reliability • Increase equipment safety by locking fasteners and bolts in place

TUBING

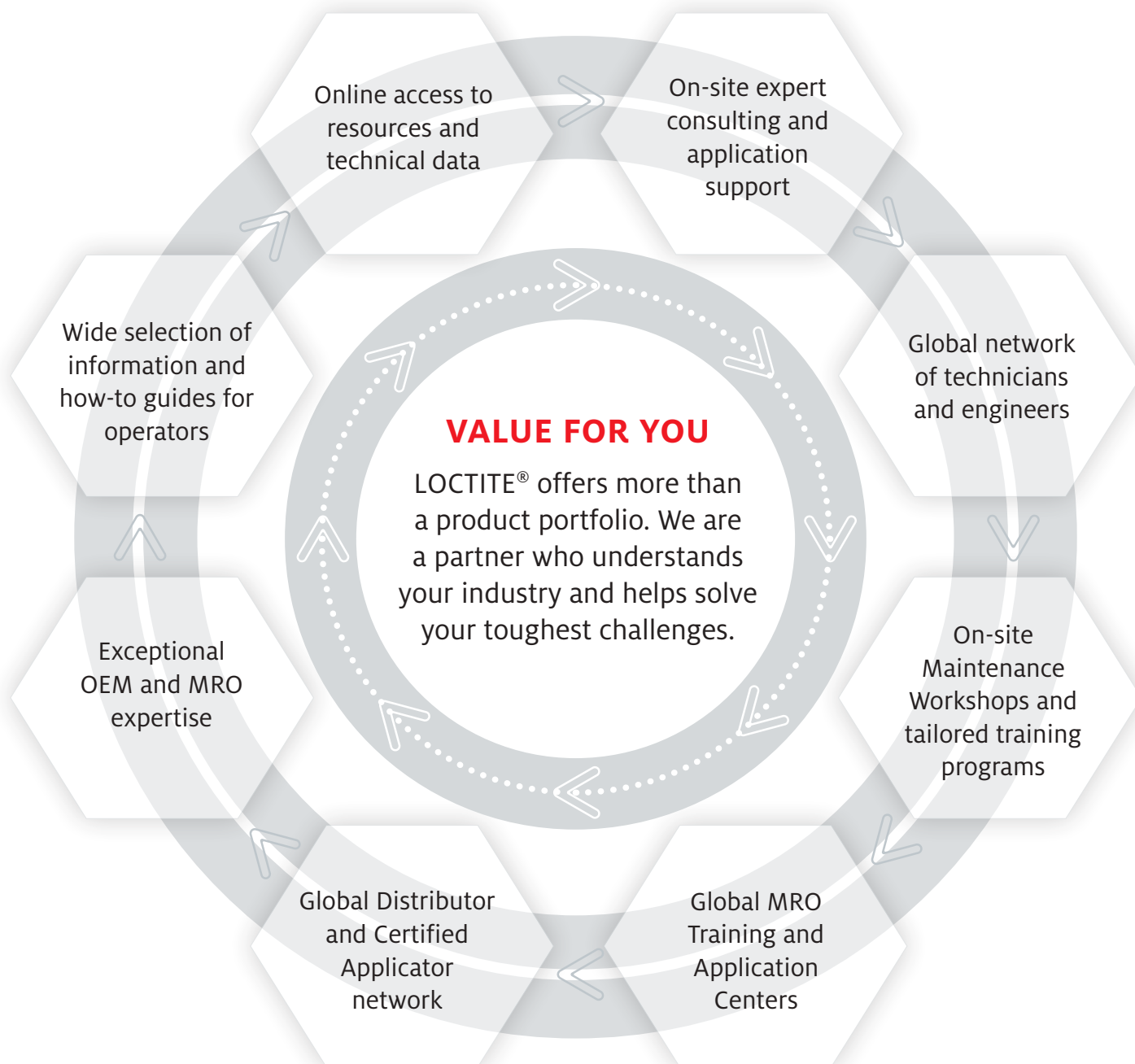
ROTATING EQUIPMENT



Reduce Your Costs

More than 90% of our customers realize above-target cost savings after just 4 months. Let us do the same for you.

Visit: <https://www.henkel-adhesives.com/ae/en/industries/industrial-maintenance-repair.html>



LOCTITE® MACHINERY ADHESIVES

- Threadlocking
- Thread Sealants
- Gasketing
- Retaining



REBUILDING, PROTECTING AND COATING

- Metal-Filled Compounds
- Concrete Repair
- Wear-Resistant Coatings



BONDING AND SEALING WITH LOCTITE®

- Epoxies
- Polyurethanes
- Instant Adhesives
- Industrial Sealants



SUPPLEMENTARY MAINTENANCE PRODUCTS

- Cleaners
- Metal Pretreatment
- Anti-Seize and Lubricants



PRODUCT	ITEM NUMBER	PACK SIZE	COLOR	FEATURES	EXTRUSION RATE (G/MIN)	TECHNOLOGY	SKIN OVER RANGE (MINUTES)	TEMPERATURE RANGE	SHORE HARDNESS	TENSILE STRENGTH (PSI)	ELONGATION AT BREAK (%)	LAP SHEAR STRENGTH ON STEEL (PSI)
TEROSON® MS 930NA	2138430	290 ML	WHITE	*PRIMERLESS, GOOD UV/ WEATHER RESISTANCE, PAINTABLE, SOLVENT/ ISOCYANATE-FREE*	300	SILICONE	25	-60°F TO 175°F (-50°C TO 80°C)	A 30	200	380	145
	2138431		BLACK									

LOCTITE® EA 3463™
10 MINUTE REPAIR EPOXY

LOCTITE® EA 3478™
SUPERIOR METAL



COLOR	Metallic Black		Dark Grey	
MAXIMUM TEMPERATURE	350°F (175°C)		302°F (150°C)	
WORKING TIME	3 min.		20 min.	
CURE TIME	10 min.		6 hrs.	
COMPRESSIVE STRENGTH	7,200 psi		9,900 psi	
	IDH	PACKAGE SIZE	IDH	PACKAGE SIZE
	209681	4 oz. stick	209822	1 lb. kit
			831721	4 kg kit

LOCTITE® PC 7332™
NORDBAK® WEAR™
RESISTANT COATING

LOCTITE® PC 9416™
FLOOR FILL

COLOR	Grey	COLOR	Grey
MAXIMUM TEMPERATURE	248°F (120°C)	MAXIMUM TEMPERATURE	225°F (107°C)
WORKING TIME	30 min.	COMPRESSIVE STRENGTH	13,100 psi
CURE TIME	6 hrs.	WORKING TIME	35 min.
IDH	PACKAGE SIZE	FUNCTIONAL CURE	16 hrs.
2751067	10 kg kit	CHEMICAL RESISTANCE	Good
		IDH	PACKAGE SIZE
		235632	10 lb. kit
		235633	40 lb. kit

LOCTITE® SF 754

DESCRIPTION	Rust converter
COLOR	Milky
TEMPERATURE RANGE	N/A
DRY TIME	N/A

IDH	PACKAGE SIZE
234981	1 qt. bottle
234984	5 gal. pail

**LOCTITE® 5113™
SEALANT WITH PTFE**

TYPE	Non-hardening
IDH	1527514
PACKAGE SIZE	1 pt. can

**LOCTITE® PC 7319™
NORDBAK® CHEMICAL
RESISTANT COATING****LOCTITE® PC 7255™
NORDBAK® SPRAYABLE
CERAMIC****LOCTITE® PC 7227™
NORDBAK® BRUSHABLE
CERAMIC**

COLOR	Grey	Green	Grey
MAXIMUM TEMPERATURE	150°F (66°C)	200°F (93°C)	200°F (93°C)
WORKING TIME*	20 min.	40 min.	30 min.
CURE TIME	24 hrs.	6 hrs.	24 hrs.

IDH	PACKAGE SIZE
209816	12 lb. kit

IDH	PACKAGE SIZE
2462905	1125 ml. cartridge - Green
2464244	1125 ml. cartridge - Grey

IDH	PACKAGE SIZE
209626	2 lb. kit - Grey
209625	6 lb. kit - Grey



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