



maxcomp

Pipe and Pressure Equipment, Composite Repair Systems

www.maxepoxy.com



MAXIMIZING ASSET EFFICIENCY

☐ MAXMETAL

☐ MAXCERAMIC

☐ MAXPRIMER

☐ MAXVISCO

☒ MAXCOMP

Engineered composite repair and structural reinforcement system

Is our engineered bi-directional fiberglass fabric-reinforced epoxy matrix composite repair and structural reinforcement system according to the ASME PCC-2 and ISO 24817 standards for pipe and pressurized equipment with temperature resistance up to 130 °C (266 °F). Maxcomp has an ABS Type Approval with intense quality control and technical certifications and demonstrates compliance with international and recognized standards and ABS Rules.

Our maxcomp versatile line of application-friendly composite systems provides a cost-effective and easy way to install, designed for applications on complex structure geometry.

✦ Engineered composite repair and structural reinforcement.

✦ For pipe and pressurized equipment.

✦ Maxcomp has an ABS Type Approval.

✦ Designed for applications on complex structure geometry.

MaxApplications:

Structural reinforcement
Concrete structures
Metal structures
Pressurized pipes
Pressurized equipment
Damages with loss of thickness
Through-Wall damages
Heat exchangers
Flare Lines



MAXCORROSION



MAXWEAR



MAXFRICTION



MAXABRASION



MAXWRAPPING



MAXSTRENGTH



MAXIMPACT



MAXTEMPERATURE



MAXEROSION



MAXEPOXY® MAX9182

Is an engineered composite repair and structural reinforcement system according to the ASME PCC-2 and ISO 24817 standards for your applications on pressurized equipment and pipes. MAX9182 has a temperature resistance of up to 130 °C (266 °F) and an ABS Type Approval

- ABS Type Approval
- ASME PCC-2 and ISO 24817
- Structural reinforcement
- Intense quality control tests
- Engineered composite repair
- Several widths options

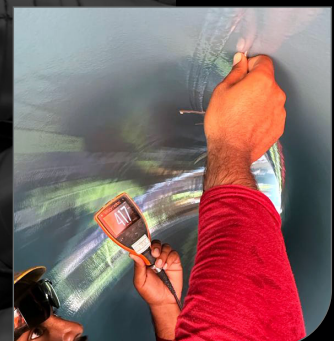


Quality Control

Safety is our number one concern and all Maxepoxy products, Technologies and procedures are focused in providing our customers with the most accurate and advanced safety protocols.

At the manufactory: With a state of the art laboratory and Chemical PhDs and throughout the most advanced testing methods, all production batches are fully tested with QC and traceability, according to the ISO 9001 standard certification.

At the field: Training Programs for composite applicator technicians, engineers, managers and trainers are provided and traced. A QC is conducted in the field at each installation according to rigorous standards to ensure a top flight repair.



MAXIMIZING ASSET EFFICIENCY

TEMP < 140 C	PAINABLE	ADHERENCE	STRUCTURAL REINFORCEMENT	WALL LOSS	DIAMETER LOSS	QUICK REPAIR	ABRASION	COMPRESSION	CORROSION	IMPACT	ASME PCC-2	PRESS < 5.000 PSI	EROSION	PRODUCT
●	●	●	●	●	●	●	●	●	●	●	●	●	●	MAX9182

As it is a certified product in accordance with ASME PCC-2 and ISO 24817 standards, their application is strictly monitored by the Engineering Departments and their quantitative calculation is carried out as diagnosed on a case-by-case basis.



SCAN TO DOWNLOAD
THE DIGITAL CATALOG

maxcomp

Composite wrap repair Success Cases

APPLICATIONS

maxcomp

Pipe and Pressure Equipment, Composite Repair Systems





Maximizing your asset's efficiency with the best quality composite repair systems.

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Industry: Oil & Gas - Offshore
Substrate: ASTM A333 Carbon Steel
Section geometry: 90° Elbow
Nominal diameter main line: 24 in
Nominal thickness: 17,48mm
Residual thickness of the wall: 14,10mm
Internal fluid: Process Liquid

Coatings: **MaxComp 9182**

challenge

Lines worn out by external corrosion causing loss of thickness, which can lead to rupture and total system failure.

Due to the high temperatures, the team had to use flame-retardant equipment.

Cause:

Due to the high gas pressure and contact with ocean air, the platform lines suffered external wear due to corrosion, reducing the thickness in one of the 90° curves, where the temperature of the liquids transported can exceed 70°.

solution

1. Depressurization and draining of the line for repair.
2. Application of abrasive blasting to clean and prepare the surface, creating the roughness necessary to fix the coating.
3. Choice of **MaxComp 9182** coating due to the epoxy matrix reinforced with bidirectional fiberglass fabric with resistance up to 130°, suitable for pressurized equipment and complex geometries.

System according to ASME PCC-2 and ISO 24817

results

Application of 330 mm of coating in 300 mm of line.

For 3 months, the lines were inspected by the maintenance team, with no reports of wear and pressure changes on the system's internal walls.



Initial appearance of the line



90° bend with abrasive blasting



330 mm of Maxcomp applied

SUCCESS CASE

MAX SOLUTIONS

Industry: Oil & Gas - Offshore
Substrate: ASTM A333 Carbon Steel
Section geometry: Straight
Nominal diameter main line: 4 in
Nominal thickness: 6mm
Internal fluid: Process Liquid

Coatings: **MaxComp 9182**

challenge

Line with major damage caused by internal and external corrosion and leakage.

Cause:

Due to the action of time and wear caused by the sea, in addition to an attempt at a palliative repair made by the internal team, the damage to the surface of the line presented an aggressive aspect of erosion (hole), making the repair challenging, in addition to the high temperatures of the gases passing through the line.

solution

1. Depressurization and draining of the line for repair.
2. Abrasive jet applied to prepare the surface, leveling and creating the necessary roughness in the coating application area.
3. Application of the coating with **MaxComp 9182** fiberglass fabric suitable for pressurized equipment with a high degree of corrosion.

System according to ASME PCC-2 and ISO 24817

results

The repairs were carried out in a few hours, with the leak being completely sealed using fiberglass lining.

The gas system returned to operation in less than 24 hours at full capacity and without new leaks.



Initial appearance of the line with the leak location



abrasive jet blasting



Maxcomp applied

Industry: Oil & Gas - Offshore
Substrate: Carbon Steel
Section geometry: Elbow
Nominal diameter main line: 4 in
Nominal thickness: 7,11mm
Internal fluid: Sea Water

Coatings: **MaxComp 9182**

challenge

Lines worn out due to internal corrosion with a damaged area of 10 mm, with a large leak of water used for cooling in the engine room.

Cause:

Due to the continuous flow of seawater in the cooling process, in addition to the corrosive damage caused by the sea air, with the oceanic air, the piping near the 90° bend suffers severe damage and with the high water pressure, a high external leak flow.



Initial appearance of the line

solution

1. Depressurization and draining of the line for repair.
2. Application of abrasive blasting to clean and prepare the surface, creating the roughness necessary to fix the coating.
3. Application of **MaxComp 9182** indicated for pressurized equipment and complex geometries, in addition to resistance to high temperatures and pressures.

System according to ASME PCC-2 and ISO 24817



90° bend with abrasive blasting

results

The system was turned back on a few hours after completing the repair and reinforcement with MaxComp 9182, when the machine room returned to full functionality.



Maxcomp applied

Industry: Oil & Gas - Offshore
Substrate: Carbon Steel
Section geometry: Straight (reduction)
Nominal diameter main line: 6 in
Nominal thickness: 7,11 mm
Internal fluid: Injection Water

Coatings: **MaxComp 9182**

challenge

High degree of corrosion and erosion external due to sea air, causing serious damage to a pipe reduction area. Due to the high temperatures, the team had to use flame-retardant equipment.

Cause:

The presence of microorganisms that induce corrosion and variations in temperature and pressure contribute to the deterioration of the metal surfaces of pipes.

The design pressure was 15 bar, with a temperature above 60°.

solution

1. Depressurization and draining of the line for repair.
2. Application of abrasive blasting to clean and prepare the surface, creating the roughness necessary to fix the coating, in addition to leveling areas with a high degree of corrosion.
3. Application of MaxComp 9182 was recommended due to the high temperature and water pressure indices in the piping.

System according to ASME PCC-2 and ISO 24817

results

The repair of the corroded surface occurred as planned and the system was restarted within a few hours to its full operating capacity, avoiding further damage to the platform's operation.



Initial appearance of the line



Reduction area with abrasive blasting



Maxcomp applied

Industry: Oil & Gas - Offshore
Substrate: Carbon Steel A106 Gr. B
Section geometry: Tee
Nominal diameter main line: 18 in
Nominal thickness: 9,53 mm
Internal fluid: Open Drain - hazardous

Coatings: **MaxComp 9182**

challenge

The leak was located in a section of the line where the flow could not be contained for the repair. The leak was located below the drain, approximately 150mm thick by 650mm in diameter. Due to the high temperatures, the team had to use flame-retardant equipment.

Cause:

The presence of microorganisms that induce corrosion and variations in temperature and pressure contributed to the deterioration of the drain surface and the failure to use adequate repairs made this leak more complex.

solution

1. Application of abrasive blasting to clean and prepare the surface, creating the roughness necessary to fix the coating, with post-application of the Maxmetal metallic coating for first sealing.
2. Application of MaxComp 9182 was recommended due to the high temperature and water pressure indices in the piping.

System according to ASME PCC-2 and ISO 24817

results

The leak repair took place very carefully and within the initial project expectations, with the system returning to full functionality within a few hours after the work was completed.



temporary structure reinforcement in the Tee...



...and the leak



Reduction area with abrasive blasting



Maxcomp applied

Industry: Oil & Gas - Offshore
Substrate: Carbon Steel A106 Gr. B
Section geometry: Tee
Nominal diameter main line: 2 in
Nominal thickness: 5,54 mm
Internal fluid: Process Liquid

Coatings: **MaxComp 9182**

challenge

The valve structure was completely covered by corrosion due to the action of wind and sea air, causing loss of thickness and a high possibility of leakage

Cause:

The presence of corrosion-inducing microorganisms due to sea air and variations in temperature and pressure contributed to the deterioration of the register surface, leading to the need for more aggressive preventive maintenance.

solution

1. Application of abrasive blasting surface preparation - cleaning, roughening and leveling, for greater effectiveness in fixing the elastic coating.
2. The application of MaxComp 9182 was recommended due to the high temperature and pressure of the water in the pipe.

System according to ASME PCC-2 and ISO 24817

results

Preventative maintenance through the application of Maxcomp coating achieved the expected results, eliminating all possibilities of leaks in the T region, with the system being monitored since then, in order to avoid leaks.



Initial appearance of the line



Abrasive jet blasting



Maxcomp applied

Industry: Oil & Gas - Offshore
Substrate: 25cr Super Duplex Stainless Steel
Section geometry: Main line straight
Nominal diameter main line: 40 x 36 in
Nominal thickness: 12,7 mm
Internal fluid: Sea Water

Coatings: **MaxComp 9182**

challenge

Two cracks after a 90° bend in the main pipe responsible for transporting seawater to cool pumps, causing a leak. The entire service was carried out in an area that was difficult to access and required depressurization of the system for the repair.

Cause:

The presence of corrosion-inducing microorganisms due to sea air and variations in temperature and pressure within the pipe contributed to a decrease in the thickness of the main pipe.



Initial appearance of the line with the high pressure leak

solution

1. Application of abrasive blasting to clean and create the roughness necessary to fix the coating.
2. The application of MaxComp 9182 was recommended due to the high temperature and pressure of the water in the piping.

System according to ASME PCC-2 and ISO 24817



Abrasive blasting site showing leaks

results

100mm of Maxcomp was used to completely seal and structurally reinforce the region of the line that was already showing a decrease in thickness. The application of the coating exceeded expectations, eliminating any possibility of new leaks at the site.



Maxcomp applied

SUCCESS CASE

MAX SOLUTIONS

Industry: Oil & Gas - Offshore
Substrate: Carbon Steel
Section geometry: Curve
Nominal diameter main line: 3 in
Nominal thickness: 6,35 mm
Internal fluid: Diesel Oil

Coatings: **MaxComp 9182**

challenge

The high system pressure and high internal liquid temperature caused severe damage to the system tubes, requiring extensive surface preparation.

Cause:

The high pressure of the diesel oil transport system, as well as the high temperature of the liquid inside the pipe, in addition to the sea air caused by the location very close to the ocean, caused severe corrosive damage.

solution

1. Application of abrasive blasting to clean and surface leveling for adequate preparation when receiving the coating.
2. The application of MaxComp 9182 was recommended due to the high system pressures and high diesel oil temperatures.

System according to ASME PCC-2 and ISO 24817

results

120mm of Maxcomp was used to eliminate any possibility of leakage, creating a new surface layer on the pipe, from the straight line to the coating of the 90° curve.



Initial appearance of the line with severe corrosion



Abrasive blasting leveling the surface



Maxcomp applied

SUCCESS CASE

MAX SOLUTIONS

Industry: Oil & Gas - Offshore
Substrate: Carbon Steel A-106 Gr. B
Section geometry: Curve
Nominal diameter main line: 12 in
Nominal thickness: 9,53 mm
Internal fluid: Oil Recovered

Coatings: **MaxComp 9182**

challenge

The high pressures and temperatures of the line to be repaired due to the type of liquid transported, requiring depressurization of the system, required careful surface preparation work to better fix the coating.

Cause:

The high pressure of the recovered oil transport system and the high temperatures of the liquids inside the pipe, in addition to the sea air, caused severe internal and external corrosive damage to the system.



Initial appearance of the line

solution

1. Application of abrasive blasting to clean and roughen the surface for adequate preparation upon receipt of the coating.
2. The application of MaxComp 9182 was recommended due to the high system pressures and high temperatures of the liquid transported in the lines.

System according to ASME PCC-2 and ISO 24817



Abrasive blasting

results

The choice of Maxcomp to eliminate any possibility of leakage created a new layer of coating on the pipe, with the system returning to full operation hours later.



Maxcomp applied

Industry: Oil & Gas - Offshore
Substrate: Carbon Steel A106 Gr. B
Section geometry: Curve
Nominal diameter main line: 8 in
Nominal thickness: 9,53 mm
Internal fluid: Process Liquid

Coatings: **MaxComp 9182**

challenge

Temperatures above 70° and pressures above 16 bar made it necessary to depressurize the entire section of the system, requiring an extensive surface preparation area, in addition to reinforcing the coating at the junction.

Cause:

The high pressure of the system and the temperature of the process liquid, in addition to the sea air, caused a severe leak near the junction of the system section.

solution

1. Application of abrasive blasting to clean the fluids from the leaked liquid over a larger area, in addition to creating greater surface roughness.
2. The application of MaxComp 9182 was recommended due to the high system pressures and high liquid temperatures. With reinforcement in the amount of coating closest to the junction region.

System according to ASME PCC-2 and ISO 24817

results

After a cautious surface preparation process, the application of Maxcomp resolved the leak, with the system returning to normal operation within a few hours.



Initial appearance of the line the hole near the junction



Abrasive blasting cleaning the surface



Maxcomp applied

MAX SOLUTIONS APPLIED

maxcomp

Pipe and Pressure Equipment, Composite Repair Systems

Engineered bi-directional Fiberglass fabric-reinforced epoxy matrix composite repair and structural reinforcement system for pipe and pressurized equipment, according to the **ASME PCC-2** and **ISO 24817** standards, with temperature resistance up to 130 °C (266 °F). maxcomp has an ABS Type Approval with intense quality control and technical certifications and demonstrates compliance with international and recognized standards and ABS Rules. Maxcomp versatile line of application friendly composite systems provide a cost-effective and easy way to install.

For pipe and pressurized equipment

Maxcomp has an ABS Type Approval

Designed for applications on complex structure geometry



WHO WE ARE

We go above and beyond by providing innovative solutions

MaxEpoxy is a global company whose products and services are meticulously engineered to not only meet but exceed the demands of the harshest industrial environments. With an unwavering commitment to quality, the company offer unparalleled resistance to a multitude of challenges including abrasion, erosion, corrosion, and chemical attack.



As it is a certified product in accordance with ASME PCC-2 and ISO 24817 standards, their application is strictly monitored by the Engineering Departments and their quantitative calculation is carried out as diagnosed on a case-by-case basis.



Engineered composite repair and structural reinforcement system

max 9182 is an engineered composite repair and structural reinforcement system that complies with ASME PCC-2 and ISO 24817 standards for your applications on pressurized equipment and pipes with temperatures up to 130 °C (266 °F). The numerous technical certifications and ABS Type Approval of MAX9182 prove that it is subject to rigorous quality control.

Maximizing your benefits

Versatile composite repair

Used to repair and reinforce a variety of pipes and pressurized equipment

Certified by ASME PCC-2 and ISO 24817

It is a high-quality product that you can trust

Type Approved by ABS

Intense quality control and technical certifications

Easy to apply

Allowing repairs of different geometries

Maximizing your applications

- Structural reinforcement
- Concrete structures
- Metal structures
- Pressurized pipes
- Pressurized equipment
- Damages with loss of thickness
- Through-Wall damages
- Concrete structures
- Heat exchangers
- Flare Lines

SURFACE PREPARATION

Abrasive Blast ISO Sa 2½ or SSPC-SP 11 Level 1

Surface profile: 45 µm (minimum)

PACKING

MAX 9182.02	2.0 kg
MAX 9182.05	4.5 kg
MAX 9182.08	3.5 kg

STORAGE

Storage Temperature 18 to 25 °C

Shelf Life 2 years

DIMENSIONS (mm x mm x m)

MAX 9182.02	4 x 50 x 20
MAX 9182.05	4 x 130 x 20
MAX 9182.08	2 x 200 x 20

TENSILE PROPERTIES (25 °C)

Circumferential modulus of elasticity (0°)	26.3 GPa
Axial modulus of elasticity (90°)	15.6 GPa
Circumferential tensile strength limit (0°)	402 MPa
Axial tensile strength limit (90°)	102 MPa
Circumferential Fault Deformation	Greater than 1%
Axial Fault Deformation	Greater than 1%

PROPERTIES

Shear module ASTM D5379	3.4 GPa
Hardness Shore D ASTM D2583	80
Glass transition temperature	176 °C
Short term lap shear ASTM D5868	7.4 MPa
Long term lap shear ASTM D5868	5.0 MPa
Compression module ASTM D6641	31 GPa
Impact Resistance ISO 24817/ASME PCC2	Approved with 10 layers
Energy release rate ISO 24817/ASME PCC2	132 J/m²
Short term survival test ISO 24817/ASME PCC2	Approved

