



CARBONTECH

REVOWRAP 110

Our comprehensive global product lines offer suitable solutions on new construction and maintenance projects for tough and demanding environments.

Our reputable products are tested, validated, field proven and backed by a team of global professionals.

REVOWRAP 110

-50°C TO 160°C - YIELDING AMAZING PRESSURE CAPABILITIES

» PRODUCT OVERVIEW

Revowrap is an engineered composite solution used to restore damaged critical assets back to the original design specification of the equipment. Each repair is engineered using ASME PCC2 or ISO TS 24817 engineering codes for High risk non-metallic repairs. Carbontech engineers have the technology to perform FEA (Finite Element Analysis) on both the damaged piping systems and the Revowrap composite repair system. Revowrap provides re-enforcement of the piping in both the axial and hoop directions, and delivers uniform loading throughout the repair. The "Revowrap110®" composite systems are engineered to operate in working temperatures from -50°C to 160°C. Our composite systems can be applied by hand lamination or by infusion methods and may be applied to live piping systems without shutting down for the repair. Revowrap may be applied to any pipe size, most substrates and almost any piping configuration including tanks, vessels, flanges, and other compromised structural assets.

PRODUCT PERFORMANCE INDICATORS

ASME PCC 2 Compliancy	Fully Compliant
ISO TS 24817 Compliancy	Fully Compliant
Certification	TUV & ABS
Minimum Application Temperature	Please contact Carbontech Composite Systems' Engineering department for project-specific guidance
Maximum Application Temperature	Please contact Carbontech Composite Systems' Engineering department for project-specific guidance
Minimum Allowable Operating Temperature	-50°C
Maximum Allowable Operating Temperature	160°C
Maximum Allowable Operating Pressure	Design Specific
Shelf Life	2 Year - Extendable
Cure Time	Refer to Carbontech Engineering for specific cure regimes
Minimum Pipe Diameter	No Limitations
Maximum Pipe Diameter	No Limitations
Repair Lifespan	20 Years
Wall Loss Defects (Type A)	Permissible
Through Wall Defects (Type B)	Permissible



PRODUCT ISO TS-24817 & ASME PCC2 REPAIR SYSTEM QUALIFICATION DATA

FIBRE GLASS	TEST	TEST CODE	METRIC	IMPERIAL
	Ply Thickness [mm, inches]	ASTM D3039	0.57	0.02
	Tensile Modulus Circumferential [GPa, ksi]	ASTM D3039	17.0	2466
	Tensile Modulus Axial [GPa, ksi]	ASTM D3039	8.66	1256
	Tensile Strength Circumferential [MPa, ksi]	ASTM D3039	358.3	51.97
	Tensile strain to failure [%]	ASTM D3039	2.5	2.5
	In Plane Shear Modulus [GPa, ksi]	ASTM D3039	1.14	165.3
	Poisson's Ratio	ASTM D3039	0.46	0.46
	CTE [mm/mm/°C, In/In/°F] - Circumferential	ISO 11359-2	9.18×10^{-6}	5.11×10^{-6}
	CTE [mm/mm/°C, In/In/°F] - Axial	ISO 11359-2	13.4×10^{-6}	7.46×10^{-6}
	Heat Distortion Temperature [°C/°F]	ISO 75-3	260	500
	Shore D Hardness	ISO 868	87	87
	Lap Shear Strength - SA2.5 [MPa, psi]	ASTM D3165	13.24	1920
	Lap Shear Strength to Steel SSPC-SP3 [MPa, psi]	ASTM D3165	8.5	1233

PRODUCT ISO TS-24817 & ASME PCC2 REPAIR SYSTEM QUALIFICATION DATA

CARBON FIBRE	TEST	TEST CODE	METRIC	IMPERIAL
	Ply Thickness [mm, inches]	ASTM D3039	0.52	0.02
	Tensile Modulus Circumferential [GPa, ksi]	ASTM D3039	38.9	5642
	Tensile Modulus Axial [GPa, ksi]	ASTM D3039	37.3	5410
	Tensile Strength Circumferential [MPa, ksi]	ASTM D3039	426	61.79
	Tensile strain to failure [%]	ASTM D3039	1.1	1.1
	In Plane Shear Modulus [GPa, ksi]	ASTM D3039	1.1	159.5
	Poisson's Ratio	ASTM D3039	0.1	0.1
	CTE [mm/mm/°C, In/In/°F] - Circumferential	ISO 11359-2	5.32×10^{-6}	3.93×10^{-6}
	CTE [mm/mm/°C, In/In/°F] - Axial	ISO 11359-2	7.07×10^{-6}	2.96×10^{-6}
	Heat Distortion Temperature [°C/°F]	ISO 75-3	271	520
	Shore D Hardness	ISO 868	88	88
	Lap Shear Strength - SA2.5 [MPa, psi]	ASTM D3165	14.1	2045
	Lap Shear Strength to Steel SSPC-SP3 [MPa, psi]	ASTM D3165	11.1	1610
	Lap Shear Strength to Steel SSPC-SP2 [MPa, psi]	ASTM D3165	6.34	920

REVOWRAP 110

PACKAGING INFORMATION

FABRIC - CARBON FIBRE	
PRODUCT CODE	DESCRIPTION
RCT-50-10	320Gsm Carbon Looped Tape: T0.4mm x W-50mm x L-100Meter
RCT-80-10	320Gsm Carbon Looped Tape: T0.4mm x W-80mm x L-100Meter
RCT-100-10	320Gsm Carbon Looped Tape: T0.4mm x W-100mm x L-100Meter
RCT-150-10	320Gsm Carbon Looped Tape: T0.4mm x W-150mm x L-100Meter
RCT-250-9	320Gsm Carbon Looped Tape: T0.4mm x W-250mm x L-50Meter

FABRIC - FIBRE GLASS	
PRODUCT CODE	DESCRIPTION
QUADS00-100-9	500 Gsm quad glass tape: T-0.62mm x W-100mm x L-50 Meter
QUADS00-250-9	500 Gsm quad glass tape: T-0.62mm x W-250mm x L-50 Meter
QUADS00-330-9	500 Gsm quad glass tape: T-0.62mm x W-330mm x L-50 Meter

PRIMER	
PRODUCT CODE	DESCRIPTION
R110-P-A-1	Revowrap110 Primer, Part A, 250g
R110-P-B-1	Revowrap110 Primer, Part B, 68g
R110-P-A-2	Revowrap110 Primer, Part A, 500g
R110-P-B-2	Revowrap110 Primer, Part B, 131g

SATURATOR	
PRODUCT CODE	DESCRIPTION
R110-S-A-1	Revowrap110 Saturator, Part A, 260g
R110-S-B-1	Revowrap110 Saturator, Part B, 68g
R110-S-A-2	Revowrap110 Saturator, Part A, 510g
R110-S-B-2	Revowrap110 Saturator, Part B, 131g

REVOWRAP 110

» ADVANTAGES

- Fast, non-invasive repair - doesn't require hot work
- Repairs done live - no unplanned downtime
- Can handle complex geometries
- Resistant to harsh chemicals

» USES

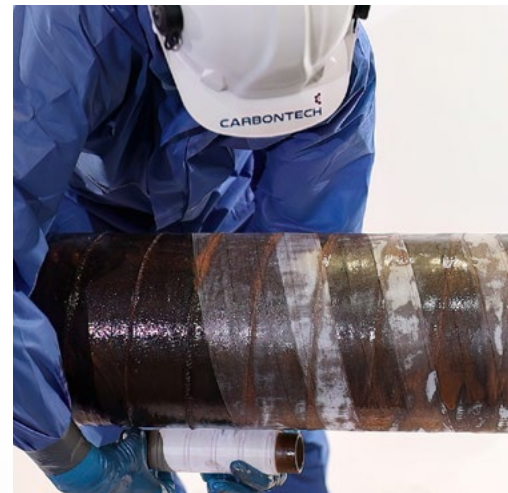
- Internal corrosion
- External corrosion
- Mechanical damages
- Weld anomalies

» INDUSTRIES

- Oil and gas facilities
- Petrochemical plants
- Chemical plants & sub sea
- Transmission pipelines

CONCLUSION

Revowrap is available in a range of widths and lengths and is designed for variants of pipe diameters and defect ranges. Revowrap may be applied in continuous spiral wraps [used for continuous lengths of pipe], circumferential wraps for localised defects and weld defects]. Revowrap 110 is the ideal solution for pipes where corrosion, mechanical damage or support abrasion has reduced the remaining wall thickness to below the MAOP. Once applied Revowrap 110 restores the pipe integrity back to the original design specification and also provides excellent corrosion and abrasion protection.



THE CARBONTECH INNOVATIVE PRODUCT RANGE

Revowrap 80	High performance quad-axial glass and carbon fibre pipe wrap system used with ambient temperature 2-part epoxy system.
Revowrap 110	High performance carbon fibre pipe wrap system used with an high temperature 2-part epoxy system.
Revowrap 185	High performance carbon fibre pipe wrap system used with ultra high temperature 2-part epoxy system.
Revowrap 225	High performance carbon fibre pipe wrap system used with ultra high temperature 2-part epoxy system.
Revoshield 124	High performance fibre glass coating system used with super strength 2-part epoxy system.
Revowrap 175 Putty	Medium viscosity high compression strength putty used for the profiling of Revowrap® systems.
Revostrap	A 20 second leak repair system for low to medium pressure.
Revomat	An intelligent post cure system for high temperature wrap systems.
SPITZE Clamp	Temporary repair of live high-pressure leaks without having to shut down or isolate the system.



CARBONTECH

The place chemistry, engineering and global expertise are brought together to drive progressive innovation in advanced composite technologies for the emergency repair of critical assets **"There is nothing generic about us"** we don't just sell pipe wraps; we provide accurate engineering backing to deliver tailored solutions.

Sound and responsible engineering is the basis on which we build our company, products and services. It is the core to our success and it is the foundation on which we have engineered and manufactured our innovative and bespoke products.

We strive by a zero-failure philosophy and warrant our engineered composite solutions are tested, proven and validated. We vow to provide dependable, responsible and accurate information regarding the capabilities of our systems.



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