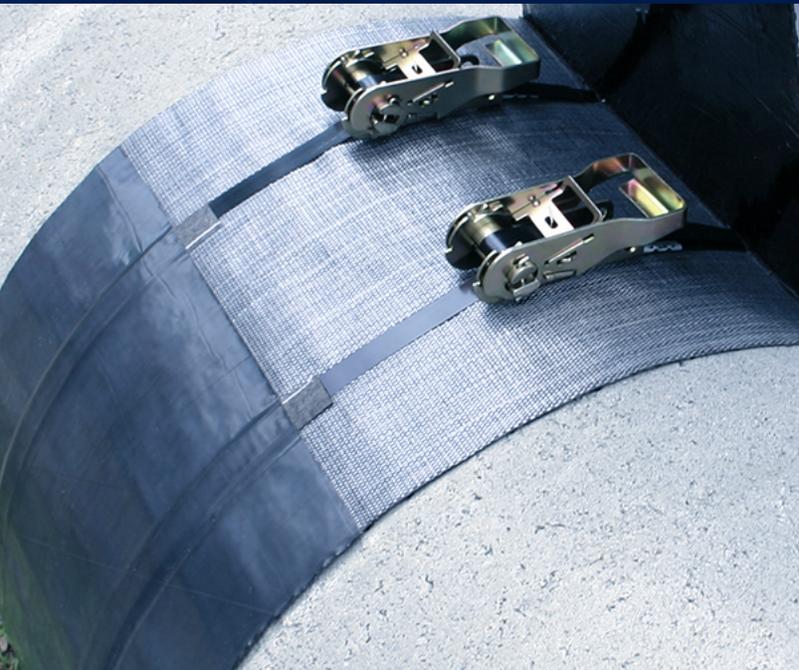




MacWrap Coupler for precast concrete structure joints

CONCRETE INFRASTRUCTURE



MarMac MacWrap is an advanced external joint coupler designed to permanently prevent infiltration at reinforced concrete pipe connections, manhole sections, box culverts, and many other round or elliptical concrete structures.

MacWrap integrates several unique components into a single, customizable, full-perimeter, external sealing band. Our specially formulated mastic provides a positive seal against infiltration. The coupler is reinforced by internalized woven polypropylene with a heavy duty polyethylene backing and secured with tensioning ratchets.

With tens of thousands of these couplers installed and performing successfully throughout North America, MacWrap has proven to be the premiere solution for the most challenging of installations, becoming the "go to" solution when it really matters. MarMac MacWrap is designed to be installed in the worst field conditions, succeeding where other products fail, and is appropriate for rehabilitation of failed joints as well as new installations.





MacWrap Coupler data sheet

Features & Benefits

- Strong, permanent, shear & puncture resistant
- Easily installed & immediately inspectable
- Protection from corrosion, acids & alkali
- Full-perimeter, positive seal = infiltration-proof, exfiltration-resistant

Applications

- Bell-and-spigot RCP
- RCP Repair
- Manhole Repair
- In-ground applications
- Tongue-and-groove RCP
- Manholes
- Box culverts
- Above-ground applications

Versions

- MacWrap for RCP
- MacWrap for Box Culverts
- Chemical Resistant MacWrap
- MacWrap for Manholes
- MacWrap Repair

Please refer to the appropriate section for specific MacWrap version details & availability.

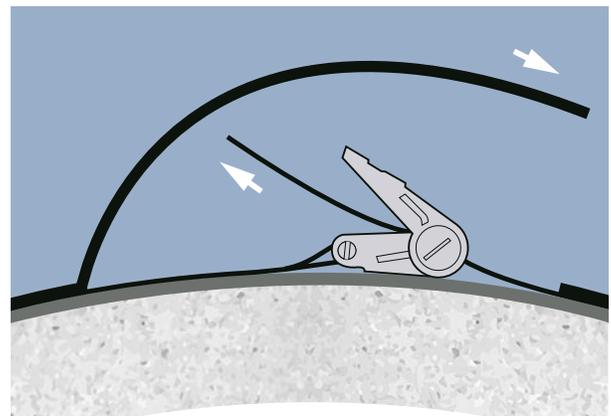
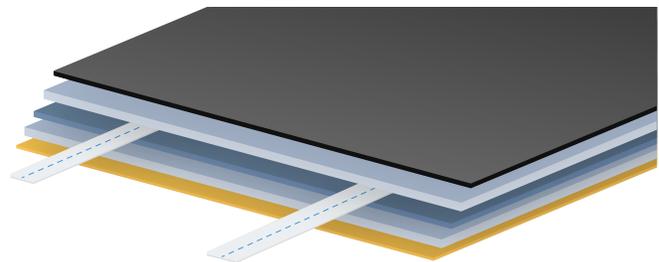
Specifications

MacWrap integrates several unique components into a single, full-perimeter, external sealing band. The coupler composition consists of:

- Heavy duty polyethylene backing
- Internal woven polypropylene reinforcement
- High-tensile compression bands
- Specially formulated mastic contact layer

MarMac MacWrap meets or exceeds all requirements of the industry standards for external joint seals of RCP and concrete structures set by:

- ASTM C 877, Type II
- ASTM C 1244





MacWrap Coupler data sheet

TYPICAL PROPERTIES	MIN	MAX
RUBBERIZED MASTIC		
Ash-inert matter	8.0%	15.0%
Volitiles	0.1%	2.0%
Softening temp	175 °F	
Specific gravity	0.95	1.05
Penetration	60 dmm	90 dmm
Flow	10 mm	10 mm
POLYETHYLENE BACKING		
Tensile strength	4000 psi	
Elongation at break	100%	
Tear resistance	1500 psi	
Water absorption		0.01%
REINFORCING MESH ELEMENT		
Tensile strength warp	75 lb/in	
Tensile strength fill	75 lb/in	
Elongation at break warp	20 lb/in	
Elongation at break fill	20 lb/in	

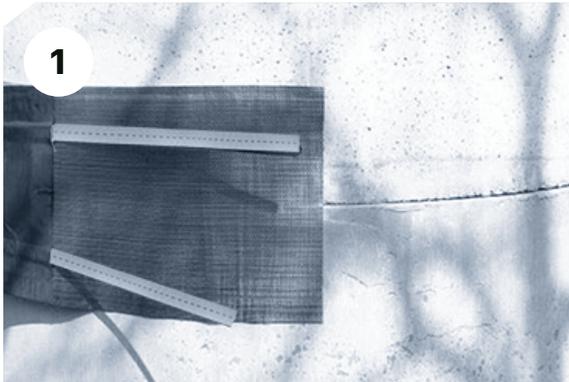
Storage

MacWrap Couplers should be stored carefully in their original packaging, out of direct sunlight, and protected from the elements. Keep away from direct heat, sparks, and open flame. For optimum results, couplers should be stored in a tepid (60-80°F) environment prior to installation.

Installation

Surface preparations: Inspect the outside of the joint. Brush and/or repair surface as needed to ensure there are no loose materials or voids. If installing on horizontal pipe, dig the bell hole for complete access to the joint.

The coupler shall be placed around the pipe, mastic side centered on the pipe joint, and then the protective release film shall be removed. The straps will then be tensioned and secured with preinstalled ratchet tensioners. The closing flap shall cover the service area and exposed straps, completing the installation. Backfill may commence immediately following the inspection of proper sealing band installation.



1

Clean Joint & Position

Clean the external surface of the joint to insure that foreign materials do not interfere with direct contact between the coupler and the joint.

Place and center coupler on the pipe joint.

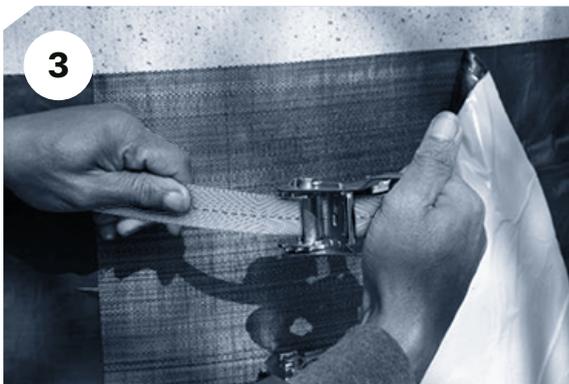


2

Remove Release Film & Apply

Peel the main release film from the (mastic side) main surface of coupler and the raised butyl reinforcement strips.

Place the exposed mastic (tail end) of the coupler on the joint. Pull the coupler around, spanning the joint, and creating the overlap at the top.



3

Feed Straps

Slide the compression band tails into the ratchet tensioners on the opposite end.



4

Tighten Straps

Using the proper tool, tighten the outside compression bands followed by the inside compression bands.



MacWrap Coupler data sheet



Remove Flap Release Film

Remove the release film from the protective closing flap.



Cover & Smooth

Cover the exposed portions of the compression bands with the protective flap.
Smooth the flap to ensure full contact.

MacWrap for RCP

MarMac's MacWrap for RCP (Reinforced Concrete Pipe) is a high performance, external joint coupler designed for the prevention of infiltration and resistance of exfiltration at joints of bell-and-spigot, tongue-and-groove, round, or elliptical RCP.

Applications

- Bell-and-spigot RCP
- Tongue-and-groove RCP

Availability

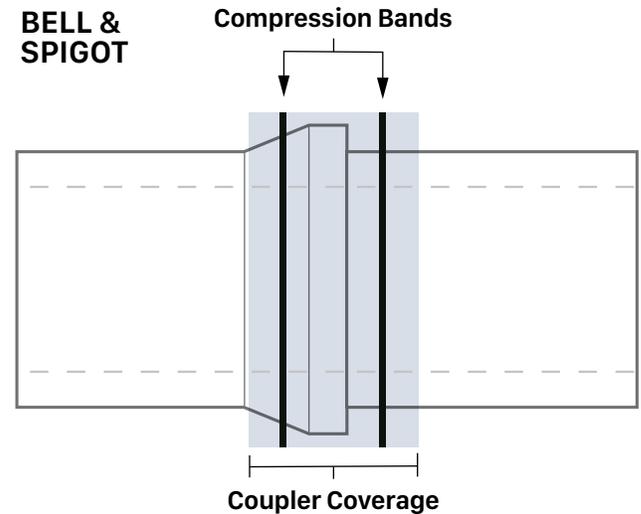
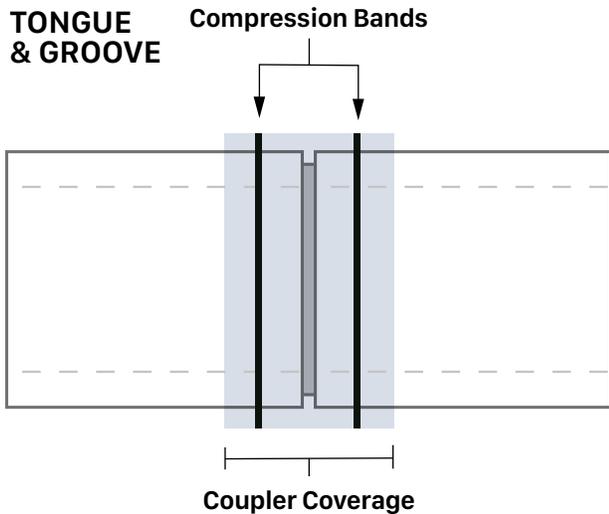
- Pipe sizes: 12-144"
- Standard, Chemical Resistant, or UV Resistant





MacWrap Coupler data sheet

PIPE ID	T&G OD	T&G OC	LENGTH	COUPLER LENGTH
RCP (C-76, B WALL) W/ RATCHET STRAPS				
12"	16"	50"	58"	62"
15"	19.5"	31"	69"	73"
18"	23"	72"	80"	84"
21"	26.5"	83"	91"	95"
24"	30"	94"	102"	106"
27"	33.5"	105"	113"	117"
30"	37"	116"	124"	128"
33"	40.5"	127"	135"	139"
36"	44"	138"	146"	150"
42"	51"	160"	168"	172"
48"	58"	182"	190"	194"
54"	65"	204"	212"	216"
60"	72"	226"	234"	238"
66"	79"	248"	256"	260"
72"	86"	270"	278"	282"
78"	93"	292"	300"	304"
84"	100"	314"	322"	326"
90"	107"	336"	344"	348"
96"	114"	358"	366"	370"
102"	121"	380"	388"	392"
108"	128"	402"	410"	414"
120"	140"	440"	448"	452"
132"	154"	484"	492"	496"
144"	168"	528"	536"	540"





MacWrap Coupler data sheet

MacWrap for Manholes

MarMac's MacWrap for Manholes is an advanced, external joint coupler specifically designed for preventing infiltration and resisting exfiltration at connections of precast manhole sections.

Applications

- Precast manhole sections

Availability

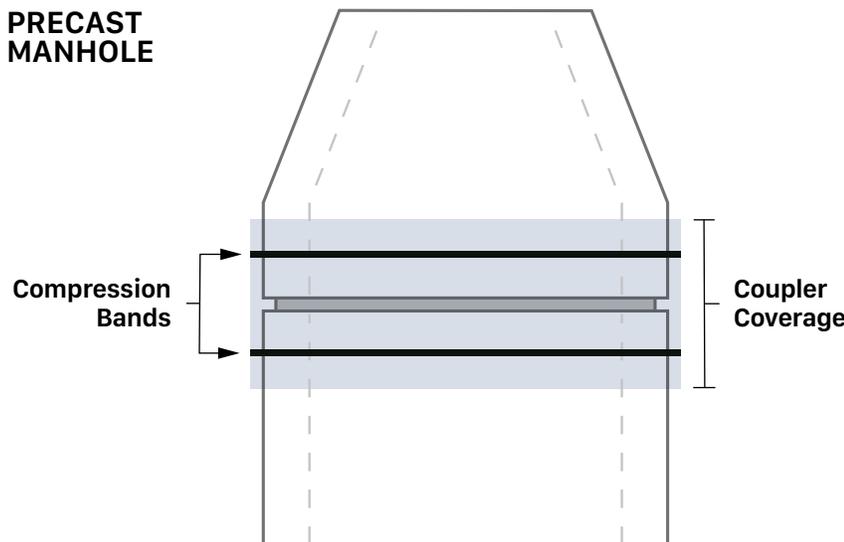
- Manhole sizes: 48-120"
- Standard, Chemical Resistant, or UV Resistant



PIPE ID	T&G OD	T&G OC	LENGTH	COUPLER LENGTH
MANHOLES (C-76, B WALL) W/ RATCHET STRAPS				
48"	58"	182"	190"	194"
60"	72"	226"	234"	238"
72"	86"	270"	278"	282"
84"	100"	314"	322"	326"
96"	114"	358"	366"	370"
108"	128"	402"	410"	414"
120"	140"	440"	448"	452"

* Contact MarMac for additional sizes & availability

PRECAST MANHOLE





MacWrap Coupler data sheet

MacWrap for Box Culverts

MarMac's MacWrap for Box Culverts is an external sealing band that creates a full perimeter seal on all four sides of a stormwater detention system. A specially formulated, aggressive mastic combines with integrated compression bands, making MacWrap among the best methods of preventing infiltration of subsurface materials into a box culvert. MacWrap for Box Culverts is designed to be both leak and puncture resistant against aggressive backfills.



Applications

- Precast box culverts
- 4-Sided precast structures
- Stormwater retention & detention systems

Availability

- Box culvert sizes: All sizes
- Standard, Chemical Resistant, or UV Resistant

MacWrap Repair Coupler

MarMac's MacWrap Repair Coupler is an advanced, external joint coupler, specifically designed to repair compromised joints of precast structures while simultaneously preventing infiltration. MacWrap Repair couplings can be used for the rehabilitation of tongue & groove and bell & spigot reinforced concrete pipe as well as manhole sections, restoring the integrity of damaged joints.



Comprised of the same construction materials as standard MacWrap, the width of MacWrap Repair Couplers is increased to 24", the thickness is increased by approximately 50%, and four compression bands are utilized versus the standard two.

Applications

- Reinforced concrete pipe repair
- Manhole repair

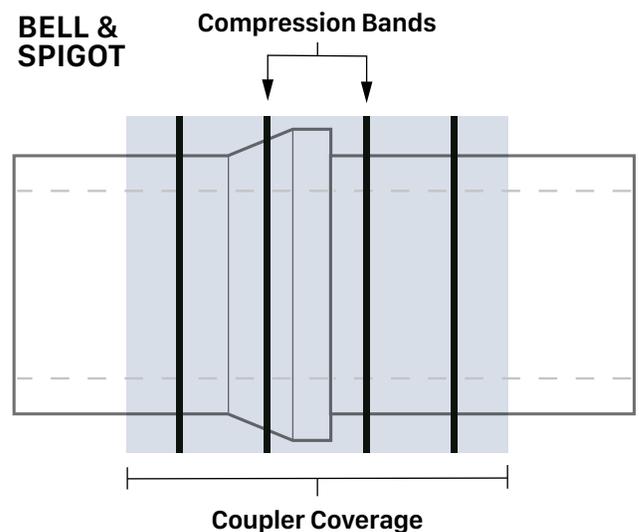
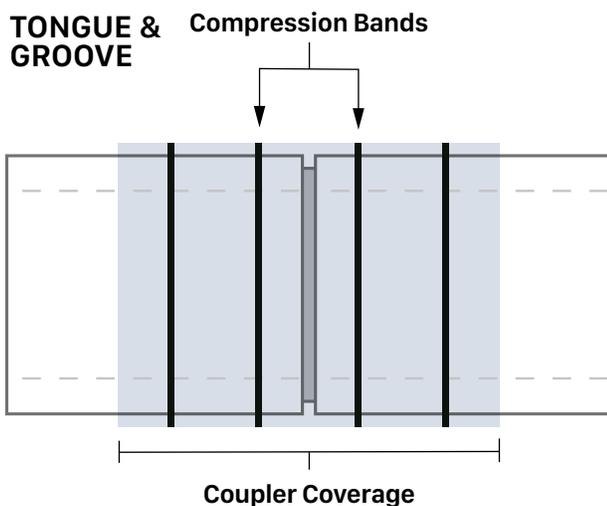
Availability

- Pipe sizes: 12-144"
- Standard, Chemical Resistant, or UV Resistant



MacWrap Coupler data sheet

PIPE ID	T&G OD	T&G OC	WIDTH	LENGTH	COUPLER LENGTH
RCP & MANHOLES (C-76, B WALL) W/ RATCHET STRAPS x4					
12"	16"	50"	24"	58"	62"
15"	19.5"	61"	24"	69"	73"
18"	23"	72"	24"	80"	84"
21"	26.5"	83"	24"	91"	95"
24"	30"	94"	24"	102"	106"
27"	33.5"	105"	24"	113"	117"
30"	37"	116"	24"	124"	128"
33"	40.5"	127"	24"	135"	139"
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42"	51"	160"	24"	168"	172"
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66"	79"	248"	24"	256"	260"
72"	86"	270"	24"	278"	282"
78"	93"	292"	24"	300"	304"
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96"	114"	358"	24"	366"	370"
102"	121"	380"	24"	388"	392"
108"	128"	402"	24"	410"	414"
120"	140"	440"	24"	448"	452"
132"	154"	484"	24"	492"	496"
144"	168"	528"	24"	536"	540"

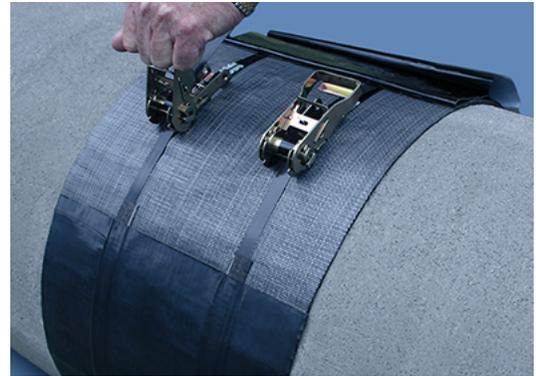




MacWrap Coupler data sheet

Chemical Resistant MacWrap

MarMac's Chemical Resistant MacWrap (MacWrap CR) is a permanent, external sealing band for reinforced concrete pipe of all sizes and shapes. MacWrap CR is backed by a proprietary coextruded barrier film, resistant to hydrocarbons and most known chemical pollutants, and is designed to be used in areas where these pollutants are present and concentrated. MacWrap CR is typically specified for gravity flow applications, such as stormwater and sanitary sewer installed in contaminated soils, especially those contaminated by hydrocarbons. MacWrap CR is designed to prevent inflow/infiltration and exfiltration at the joint. In addition, MacWrap CR is proven to maintain the joint integrity, even given less than perfect bedding conditions.



Applications

- Sanitary sewer
- Elevated hydrocarbon areas & contaminated soil

Availability

- Reinforced concrete pipe
- Precast manhole sections
- Box culverts & 4-sided precast structures

Specifications

MacWrap CR's barrier film laminated to the outside of the coupler has been tested per ASTM F739 against a battery of chemicals at 95% concentration for permeation resistance with excellent results, including benzene, toluene, and other hydrocarbon-based solvents. MacWrap CR is certified to meet the properties of Chemical Resistance. A summary list of test results is as follows:

MACWRAP CR TEST RESULTS - ASTM F 739

CHEMICAL	RESULT	CHEMICAL	RESULT
1,1,1-Trichloroethane 71-55-6	Pass	2-Aminodiphenylamine {2-ADP} 534-85-0	Pass
1,2,-Dichlorobenzene 95-50-1	Pass	2-Aminoethanol 141-43-5	Pass
1,2-Dichloroethane 107-06-2	Pass	2-Butanone 78-93-3	Pass
1,2-Dihydroxyethane 107-21-1	Pass	2-Chloropropylene Oxide 106-89-8	Pass
1,3 Butadiene 106-99-0	Pass	2-Mercaptoethanol 60-24-2	Pass
1,3-Dimethylbenzene 108-38-3	Pass	4-Aminodiphenyl 92-67-1	Pass
1,4-Diaminobenzene 106-50-3	Pass	4-Phenylaniline 92-67-1	Pass
1-Butanol 71-36-3	Pass	A-Methyl Styrene 98-83-9	Pass
1-Vinyl-2 pyrrolidinone 88-12-0	Pass	Acetic Acid 64-19-7	Pass



MacWrap Coupler data sheet

MACWRAP CR TEST RESULTS - ASTM F 739

CHEMICAL	RESULT	CHEMICAL	RESULT
Acetic Anhydride 108-24-7	Pass	Cyanoethylene 107-13-1	Pass
Acetone 67-64-1	Pass	Cyanomethane 75-05-8	Pass
Acetonitrile 75-05-8	Pass	DMAC 127-19-5	Pass
Acrolein 107-02-8	Pass	Denatured Ethanol Mixture	Pass
Acrylic Acid 79-10-7	Pass	Dibutyl phthalate 84-74-2	Pass
Acrylonitrile 107-13-1	Pass	Dichloromethane 75-09-2	Pass
Alkylate Mixture	Pass	Diethylamine 109-89-7	Pass
Allyl Alcohol 107-18-6	Pass	Diethylene Oxide 109-99-9	Pass
Allyl Chloride 107-05-1	Pass	Diethylethanolamine 100-37-8	Pass
Aluminium Potassium Sulfate 12 Hydrate 7784-24-9	Pass	Dimethyl Ketone 67-64-1	Pass
Ammonia Gas 7664-41-7	Pass	Dimethyl Sulfate 77-78-1	Pass
Ammonium Hydroxide 1336-21-6	Fail	Dimethyl Sulfide 75-18-3	Pass
Aniline 62-53-3	Pass	Dimethyl-Acetamide 127-19-5	Pass
Aqua Fortis 7697-37-2	Pass	Dimethylamine 124-40-3	Pass
Azabenzene 110-86-1	Pass	Dimethylene Oxide 75-21-8	Pass
Battery Acid 7664-93-9	Pass	Dimethylformamide 68-12-2	Pass
Benzene 71-43-2	Pass	Epichlorohydrin 106-89-8	Pass
Benzyl Chloride 100-44-7	Pass	Ethanamine 121-44-8	Pass
Biethylene 106-99-0	Pass	Ethanoic Acid 64-19-7	Pass
Bis (2-chloroethyl) Sulfide 505-60-2	Pass	Ethanolamine 141-43-5	Pass
Black Liquor Mixture	Pass	Ethenyl Benzene 100-41-4	Pass
Blood and Body Fluids	Pass	Ethyl Acetate 141-78-6	Pass
Butyl Alcohol 71-36-3	Pass	Ethyl Benzene 100-41-4	Pass
Butyl Methyl Ether 1634-04-4	Pass	Ethyl Chloroformate 541-41-3	Pass
Carbolic Acid 108-95-2	Pass	Ethyl Ethanoate 141-78-6	Pass
Carbon Bisulfide 75-15-0	Pass	Ethyl-S-Dimethylaminoethyl Methylphosphonothiolate 50782-69-9	Pass
Carbon Disulfide 75-15-0	Pass	Ethylene Dichloride 107-06-2	Pass
Carbon Oxychloride 75-44-5	Pass	Ethylene Glycol 107-21-1	Pass
Caustic Soda 1310-73-2	Pass	Ethylene Oxide 75-21-8	Pass
Chlorine Gas 7782-50-5	Pass	Ferric Chloride 7705-8-0	Pass
Chlorobenzene 108-90-7	Pass	Formaldehyde 50-00-0	Pass
Chloroform 67-66-3	Pass	Formonitrile 74-90-8	Pass
Chloromethane 74-87-3	Pass	Gasoline 8006-61-9	Pass
Chlorosulfonic Acid 7790-94-5	Pass	Glutaric Dialdehyde 111-30-8	Pass
Chlorovinylarsine Dichloride 541-25-3	Pass	Gluteraldehyde 111-30-8	Pass
Chromic Acid 1333-82-0	Pass	Hexahydrobenzene 110-82-7	Pass
Cumene 98-82-8	Pass	Hexamethylene Diisocyanate 822-06-0	Pass
Cumene Hydroperoxide 80-15-9	Pass	Hexamethylene diamine 124-09-4	Pass



MacWrap Coupler data sheet

MACWRAP CR TEST RESULTS - ASTM F 739

CHEMICAL	RESULT	CHEMICAL	RESULT
Hexane 110-54-3	Pass	Monochlorosulfuric Acid 7790-94-5	Pass
Hydrochloric Acid 7647-01-0	Pass	Motor Fuel 8006-61-9	Pass
Hydrofluoric Acid 48% 7664-39-3	Pass	Muriatic Acid 7647-01-0	Pass
Hydrogen Chloride 7647-01-0	Pass	Mustard (HD) 505-60-2	Pass
Hydrogen Floride Gas 99% 7664-39-3	Pass	N,N-Dimethylformamide 68-12-2	Pass
Hydrogen Phosphide 7803-51-2	Pass	N-Butyl Acetate 123-86-4	Pass
Hydrogen Sulfide 100% Vapor 7783-06-4	Pass	N-Ethylethanamine 109-89-7	Pass
Iodomethane 74-88-4	Pass	N-Hexane 110-54-3	Pass
Isophorone Diamine {IPDA} 2855-13-2	Pass	N-Methyl-2Pyrrolidone 872-50-4	Pass
Isopropenyl Benzene 98-83-9	Pass	N-Pentane 109-66-0	Pass
Isopropyl Alcohol 67-63-0	Pass	Naphtha Mixture	Pass
Isopropyl Benzene 98-82-8	Pass	Nerve agent (VX) 50782-69-9	Pass
Isopropyl Methanefluorophosphonate 107-44-8	Pass	Nitric Acid 7697-37-2	Pass
Isopropylamine 75-31-0	Pass	Nitrobenzene 98-95-3	Pass
JP 5 Jet Fuel 8008-20-6	Pass	Nitrobenzol 98-95-3	Pass
JP 8 Jet Fuel 84742-47-8	Pass	O-Cresol 95-48-7	Pass
Kerosene Mixture	Pass	O-Xylene 95-47-6	Pass
Lewisite (L) 541-25-3	Pass	Oleum 8014-95-7	Pass
M- Xylene 108-38-3	Pass	Orthophosphoric Acid 7664-38-2	Pass
Methanol 67-56-1	Pass	P-Phenylenediamine {PPDA} 106-50-3	Pass
Methyl Acetate 79-20-9	Pass	P-Xylene 106-42-3	Pass
Methyl Alcohol 67-56-1	Pass	Pentane 109-66-0	Pass
Methyl Benzene 108-88-3	Pass	Perchloroethylene 127-18-4	Pass
Methyl Chloride 74-87-3	Pass	Phenol @43 C 108-95-2	Pass
Methyl Chloroform 71-55-6	Pass	Phenyl Hydride 71-43-2	Pass
Methyl Chloroformate 79-22-1	Pass	Phenylamine 62-53-3	Pass
Methyl Ethyl Ketone 78-93-3	Pass	Phosphoric Acid 7664-38-2	Pass
Methyl Iodide 74-88-4	Pass	Phosphorous Oxychloride 10025-87-3	Pass
Methyl Isobutyl Ketone 108-10-1	Pass	Phosphorus Trichloride 7719-12-2	Pass
Methyl Methacrylate 80-62-6	Pass	Picoline 108-99-6	Pass
Methyl Pyrrilidone 872-50-4	Pass	Potassium Hydroxide 1310-58-3	Pass
Methyl Sulfate 77-78-1	Pass	Propylene carbonate 108-32-7	Pass
Methyl tert Butyl Ether 1634-04-4	Pass	Pyridine 110-86-1	Pass
Methylamine 40% 74-89-5	Pass	Reformate Naphtha Mixture Sarin (GB) 107-44-8	Pass
Methylene Dichloride 75-09-2	Pass	Sodium Chlorate 7775-09-9	Pass
Methylene Oxide 50-00-0	Pass	Sodium Chromate Tetrahydrate 10034-82-9	Pass
Monochloroacetic Acid 79-11-8	Pass	Sodium Hydroxide 1310-73-2	Pass
Monochloroethylene 75-01-04	Pass	Styrene Monomer 100-42-5	Pass



MacWrap Coupler data sheet

MACWRAP CR TEST RESULTS - ASTM F 739

CHEMICAL	RESULT	CHEMICAL	RESULT
Sulfur Dioxide 7446-09-5	Pass	Titanium Tetrachloride 7550-45-0	Pass
Sulfur Trioxide 99% 7446-11-9	Pass	Toluene 108-88-3	Pass
Sulfuric Acid 7664-93-9	Pass	Toluene diisocyanate 584-84-9	Pass
Tetraboron Lam 2052-49-5	Pass	Trichloroethylene 79-01-6	Pass
Tetrachloroethylene 127-18-4	Pass	Triethylamine 121-44-8	Pass
Tetrachlorotitanium 7550-45-0	Pass	Trifluoroacetic Acid 76-05-1	Pass
Tetrahydrofuran 109-99-9	Pass	Vinyl Acetate 108-05-4	Pass
Tetramethylammonium Hydroxide 75-59-2	Pass	Vinyl Chloride 75-01-04	Pass

For more information, additional instructions, or questions regarding MacWrap Couplers, visit marmac.com/MacWrap or scan the QR code on the first page.

CAUTION: Prior to use, please read the Manufacturer Warranty & Disclaimer found at marmac.com/cp/disclaimer.

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