



# ITL Reinforced Concrete Roll®

## ITL RCR® At Work

### ITL RCR® FOR OHIO CULVERT PIPE REPAIR



Culvert Before



Installation



Culvert After

### QUICK EASY INSTALLATION – FAST RETURN TO SERVICE

#### ITL RCR-7® EXTENDS LIFE OF PIPE WHILE REDUCING FUTURE MAINTENANCE COSTS

In July 2021, along SR 66 near Delphos, Ohio, Meredith Brothers and DOT workers scheduled this 60", 24' long culvert pipe for repair. Made of 8 gauge corrugated galvanized steel multi-plate pipe and installed approximately 30 years ago, it had thinned from years of water and sediment flow. ITL Reinforced Concrete Roll®, (ITL RCR®) was selected to repair, protect and extend the life of the pipe while minimizing disruption to traffic from the adjacent highway during installation.

The ITL RCR-7®, or 7mm thick material is ideal for culvert repairs. One roll of 16'4" x 65' 7" was pre-cut to 4' x 6' sheets and Hilti-fastened every 6" along the inside top edges and end of the pipe. Sheets down the length of the pipe were also overlapped by 6" and welded together with a hand-held propane torch. Further adding installation ease as well as pipe strength was ITL RCR's ability to mold well to the pipe corrugations during the hydration process. Tar was applied and sealed the top edges before ITL RCR® was hydrated to start the curing process. As ITL RCR® can be installed and subsequently cured in water, the pipe was returned to service immediately after completion of the installation.

#### STRONG & VERSATILE

ITL Reinforced Concrete Roll® is a dry powdered cement mix that is needle-punched between two sheets of non-woven polypropylene. When rolled out and hydrated, ITL RCR® takes shape into a durable structure suitable for reinforcement or protective lining.

#### WHAT OUR CUSTOMER HAD TO SAY:

"We pride ourselves on being solution providers and ITL RCR® was a great solution for the application and ease of installation. It took a half a day to line the 60" pipe. Our customer has indicated they will continue the use of ITL RCR® for future culvert linings."

**Jerry Frantz**  
Technical Sales Manager  
Meredith Brothers Inc.



#### U.S. Distribution Centers

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# ITL Reinforced Concrete Roll®

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### TECHNICAL DATA

ITL RCR®		Imperial	Metric
Roll Width/Length		16' 4" x 65' 7"	5m x 20m
Total Coverage		1,076 ft²	100m
Properties of geotextile	Test Method	Imperial	Metric
Grab Tensile Strength	ASTM D4632	80 lbs	356 N
Grab Tensile Elongation	ASTM D4632	50%	50%
Trapezoid Tear	ASTM D4533	30 lbs	133 N
CBR Puncture	ASTM D6241	210 lbs	934 N
Permittivity	ASTM D4491	2.2 sec <sup>-1</sup>	2.2 sec <sup>-1</sup>
WaterFlow Rate	ASTM D4491	160 gpm/ft²	6,519 l/min/m²
Apparent Opening Size (AOS)	ASTM D4751	70 USSieve	0.212mm
UV Stability @ 500 hrs	ASTM D4355	70%	70%
Properties of cement	Test Method	Imperial	Metric
Chemical Composition	XRF Spectroscopy	Sand-Cement Mix	Sand-Cement Mix
Initial Setting Time	PN-EN 196-3	≥ 25 minutes	≥ 25 minutes
Properties of ITL RCR® - Before Hydration	Test Method	Imperial	Metric
Thickness	ASTM D5199	0.51 inches	13.1 mm
Mass / Unit Area	ASTM D5993	397.1 oz/sq.yd	13,465 gsm
Tensile Strength	ASTM D6768	MD = 136 lbs/inch	MD = 23.9 N/mm
	ASTM D6768	TD = 191 lbs/inch	TD = 33.5 N/mm
	ASTM D4595	MD = 135 lbs/inch	MD = 23.6 N/mm
	ASTM D4595	TD = 188 lbs/inch	TD = 32.8 N/mm
Weight of RCR-12®	Certified Trade Scale	2,850 lbs/roll	1,290 kg/roll
Weight of RCR-7®	Certified Trade Scale	1,700 lbs/roll	770 kg/roll
Properties of ITL RCR® - After Hydration	Test Method	Imperial	Metric
Large-Scale Channel Testing Determination by Trapezoidal Channel	ASTM D6460	0.022 Manning's <i>n</i>	0.022 Manning's <i>n</i>
Compressive Strength - 24 hour cure	ASTM C109	5,303 psi	36.6 MPa
Compressive Strength - 7 day cure	ASTM C109	6,823 psi	47 MPa
Compressive Strength - 28 day cure	ASTM C109	7,222 psi	50 MPa
Peel Strength	ASTM D6496	6.94 lb/in	121.6 N/10cm
	ASTM D6496	5.77 lb/in	1,009.9 N/m
Thickness	ASTM D5199	0.54 inches	13.6 mm
Mass / Unit Area	ASTM D5261	486.1 oz/sq.yd	16,480 gsm
Flexural Strength	ASTM D8058	MD = 578 psi	MD = 3.98 MPa
	ASTM D8058	TD = 538 psi	TD = 3.71 MPa
Puncture Resistance	ASTM D4833	280 lbs	1,245 N
Puncture Resistance - Rigid Substrate	ASTM D5494	3,782 lbs	16,824 N
Index Flux (& Permeability)	ASTM D5887	3.20E-11 ft³/sec	9.74E-12 m³/sec
	ASTM D5887	5.25E-09 ft³/ft²/sec	1.60E-09 m³/m²/sec
Abrasion Resistance - Mass Loss	ASTM C1353	0.18 oz	5.17 grams
Tensile Strength	ASTM D6768	MD = 207 lbs/inch	MD = 36.2 N/mm
	ASTM D6768	TD = 255 lbs/inch	TD = 44.6 N/mm
	ASTM D4595	MD = 189 lbs/inch	MD = 33.1 N/mm
	ASTM D4595	TD = 228 lbs/inch	TD = 40.0 N/mm
Reaction to Fire	PN EN 12467:5.6	B,s1,d0	B,s1,d0
ITL RCR® Certifications	Test Method	Acceptance Number	
U.S. Department of Labor Mine Safety and Health Administration	Acceptance of Flame-Resistant Solid Products Taken into Mines	MSHA IC-375/02	

Contact us for a free product sample!

Leo Cortez

Product Manager

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Learn more at [itlrcr.com](http://itlrcr.com)

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