

**TRINITY
COMPOSITES, LLC**

Enviro-Span Load Test Results



1250 Gateway Drive
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Enviro-Span is a product line within Trinity Composites, LLC.

Enviro-Span Properties

Two types of testing have been completed on Enviro-Span as follows:

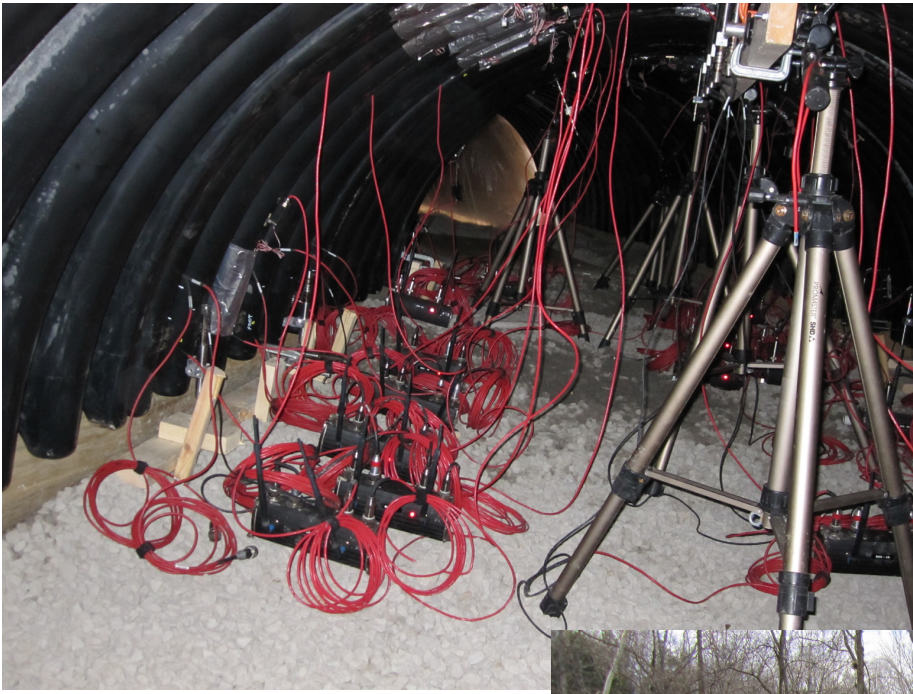
1. **Finite Element Analysis (FEA) for a live load rating of L150** (BC 150 imperial ton 5-axle configuration) using .91 metres (36 inches) of uncompacted fill. The results indicated combined stresses from axial thrust and bending moment that are within Canadian Bridge Code limits for all wheel loading cases examined.
2. **Field installation and strain gauge testing for a live load rating of L100** (BC 100 imperial ton 5-axle configuration) using .91 metres (36 inches) of uncompacted fill. The axle loading was approximately 56,000 pounds per axle on the back two axles.

Table 1. Material Design Properties and Field Test Results

TYPICAL DESIGN PROPERTIES OF LMR M15XX POLYMERS USED TO MANUFACTURE				Results from L100 Live Load Testing of Enviro-Span 2150mm Arch ⁽¹⁾⁽²⁾	
PROPERTY	ASTM Method	U.S. Units	SI Units	U.S. Units	SI Units
Tensile Strength	D638	6.79 Kpsi (+/-0.5)	46.8 MPa (+/- 3.4)	Straight 0.72 Kpsi	4.84 Mpa
				Wedge 1.08 Kpsi	7.56 Mpa
Compression Strength	D695	8.48 Kpsi (+/-0.41)	58.4 MPa (+/-2.8)	Straight 3.36 Kpsi	23.04 Mpa
				Wedge 3.16 Kpsi	21.88 Mpa
CTE, 0°-50°C	E831	48.8E-6 in/in/°F (+/-1.3E-6)	87.8E-6 m/m/°C (+/-2.34E-6)		
Density	D792	0.03735 lb/in ³ (+/-0.0002)	1.034 g/cc (+/- 0.006)		
Flammability Rating	UL	HB			

Notes:

1. Actual Tension, Compression and Shear values experienced by the installed crossing with a margin of safety factor included. These was based on the peak measured values.
2. Field installation and strain gauge testing for a live load rating of L100 (BC 100 imperial ton 5-axle configuration) using .91 metres (36 inches) of uncompacted fill. Axle load was approximately 56,000 pounds per axle.
3. Live load results are based on information provided by a third party testing firm: Bridge Diagnostics, Inc.



The logo for ENVIRO SPAN Modular Culvert Systems. The word "ENVIRO" is in a bold, green, italicized sans-serif font. To its right is a large, stylized arch that is yellow on the outside and green on the inside. Below the arch, the word "SPAN" is written in a larger, bold, green, italicized sans-serif font. Underneath "SPAN", the words "Modular Culvert Systems" are written in a smaller, green, italicized sans-serif font.

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