



MiniSpan
Corrugated Bridge
Structures

The image shows two corrugated metal bridge structures installed in a stream. The structures are made of dark, ribbed metal and are supported by concrete abutments. The surrounding area is a wooded area with some snow on the ground.

Quickly installed and economical
short span bridges

A blue rectangular overlay with a subtle pattern of white lines, containing white text.

MiniSpan Structures

MiniSpan structures provide an economical and rapid solution for a variety of stream crossings. MiniSpans are pre designed for a combination of spans from 1,520mm to 3,660mm and various live loads. They are supplied in individual sections up to 15m long and are easily assembled on-site with lapped connections. Factory-installed headwalls and steel footing options are also available on most MiniSpan products, further reducing overall installation time.

Featuring a bottomless design to preserve the aquatic habitat, MiniSpan products are both functional and 'fish friendly'. Additionally their long barrel length allows expansive road widths and better sight lines for improved driver safety.

TYPICAL APPLICATIONS

- Logging roads and secondary highways
- Municipal creek crossings
- Utility crossings
- Hiking trails and access roads



VERSATILE

Ideal for multiple applications and reusable



LIGHTWEIGHT

No need for specialized or heavy lifting equipment



ECONOMICAL

Provides a cost-effective stream crossing solution



DURABLE*

Manufactured using Hot-Dip Galvanized components

*Other coatings are available
*Head walls are zinc rich painted



EASY INSTALLATION

Pre-assembled at the factory for most sizes



FISH FREINDLY

Open bottom arch preserves the aquatic habitat



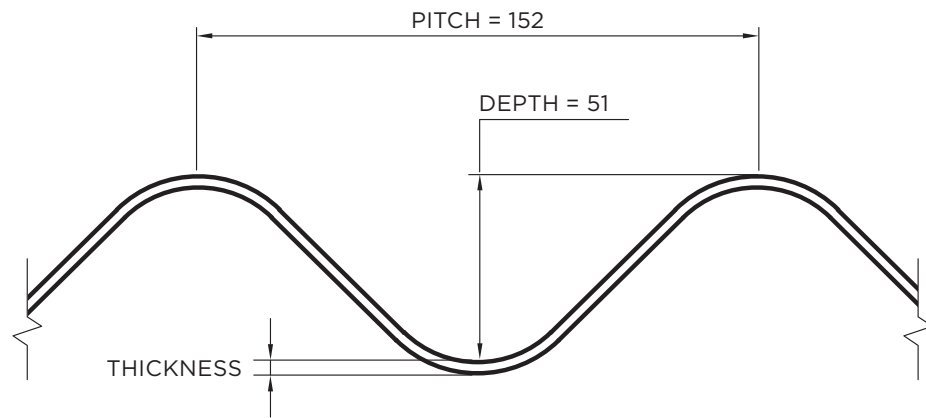
MiniSpan at a Glance

Available MiniSpan:

	Spans	Material
MiniSpan	1,520 - 3,660mm	152 x 51mm Hot-Dip Galvanized Corrugated Steel Structural Plate

MiniSpan Corrugation

152 x 51mm Corrugation



MiniSpan

Loading and Cover Requirements

Structure No.	Inside Span	Inside Rise	End Area	Minimum Steel Thickness	Minimum Footing Width x Thickness	Minimum Cover						Maximum Cover
						CL 625	CL 625-ONT/ BCL 625	L-75	L-100	L-150	L-165	
						mm	mm	mm	mm	mm	mm	
MS-01	1520	810	0.98	3.0	670 x 5	600	600	600	800	800	800	4300
MS-02	1830	970	1.39	3.0	670 x 5	600	600	600	800	800	900	4300
MS-03	2130	1120	1.86	3.0	670 x 6	600	600	600	800	800	1000	4300
MS-04	2440	1270	2.42	3.0	670 x 6 795 x 7 ¹	600	600	600	800	900	1100	4000
MS-05	2740	1440	3.07	3.0	670 x 6 795 x 8 ¹	600	600	700	800	900	1100	3500
MS-06	3050	1600	3.81	3.0	670 x 6 795 x 8 ¹	600	600	700	900	1000	1200	3000
MS-07	3350	1750	4.65	3.0	795 x 8 915 x 9 ¹	600	600	700	900	1000	1300	3000
MS-08	3660	1910	5.48	3.0	795 x 8 915 x 10 ¹	700	700	800	900	1000	1300	2500

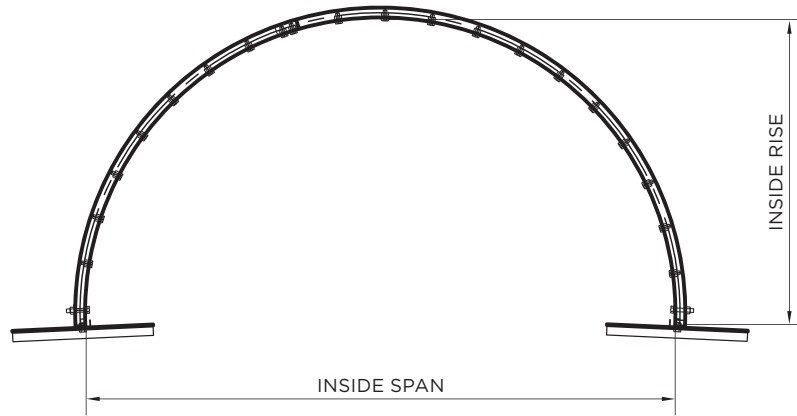
NOTE:

1. Footing size for L-165 live load
2. Minimum soil bearing capacity = 250 kPa
3. Components other than corrugated sheet/plate are painted with zinc rich paint

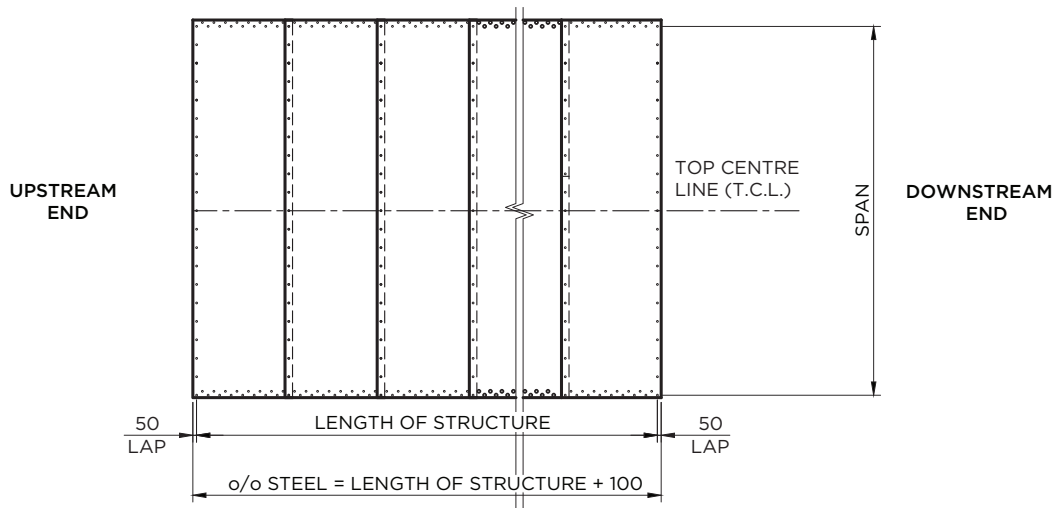
Installation of MiniSpan is fast and efficient with lightweight, pre-assembled structures



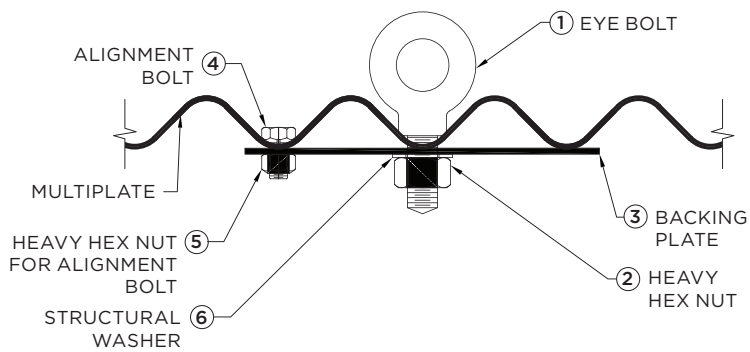
MINISPAN CROSS SECTION



MINISPAN PLAN VIEW



MINISPAN PRE ASSEMBLY



Assembly Options

MiniSpan Type	Shop Assembly		Field Assembly
	Complete	Arch Only	
MS-01	●	●	●
MS-02	●	●	●
MS-03	●	●	●
MS-04	●	●	●
MS-05		●	●
MS-06		●	●
MS-07			●
MS-08			●

Installation

1. Foundation Preparation

To support the footing plates a properly prepared foundation is essential for a successful MiniSpan installation. The elevation, grade and alignment of the footing plates are dependent on the foundation.

Foundation material of poor or non-uniform bearing capacity must be removed to prevent differential footing settlement. Replacement foundation soils must provide a uniform support with a minimum 250 kPa bearing capacity.

2. Footing Design

MiniSpan structures are typically designed so that the footing plates bear directly on the bedding. If required, a concrete footing should be designed by a local qualified structural engineer, using available soils data, un-factored footing loads provided by Armtec, and appropriate design methods.

It's the responsibility of the owner to design the required scour protection, position the footings and detail the protective layer of armour rock/rip rap accordingly.

3. Assembly and Installation

MiniSpan structures are assembled in place or preassembled and lifted into place onto the prepared foundation. The total assembled weight of the structure is noted on the Bill of Material. Factory installed lifting lugs are provided. Slings must be of sufficient length to ensure that the minimum lift angle is 60°.

If concrete footings are required, the MiniSpan is lowered onto the cast-in-place or precast footings after they are installed to the correct grade and alignment. Contractor drills holes into the top surface of the footings, matching the holes pre-drilled in the footing plate or channel. The structure is then bolted to the footing using 19mm diameter x 100mm long concrete anchors.

4. Backfill and Footing Protection

To protect the critical backfill, a geotextile should be placed on the outside of the structure over the granular foundation and footing plate. To protect the footings and foundation from scour, a layer of angular armour rock/rip rap should be placed inside the structure, above the footing plates. The owner's engineer shall make site specific design for scour protection.

NOTE:

- Obtaining permits for diversion work(s) and installation of the MiniSpan is the responsibility of the owner
- Foundation should be investigated by a qualified local geotechnical engineer



NO NEED FOR SPECIALIZED OR HEAVY LIFTING EQUIPMENT



HEADWALLS AND STEEL FOOTINGS ARE AVAILABLE ON ALL MINISPAN STRUCTURES

5. Backfilling and Compacting

Areas close to the sides of the structure shall be compacted using vibrating or tamping equipment **running parallel with the length** of the structure at all times. Granular fill material shall be at optimum moisture content during compaction. Each fill layer shall be compacted to at least 95% Standard Proctor Density.

When the backfill reaches 3/4 of the rise, spreading and compaction over the top crown must be done in a direction **perpendicular to the length** of the structure until the finished height of the critical backfill zone is reached.

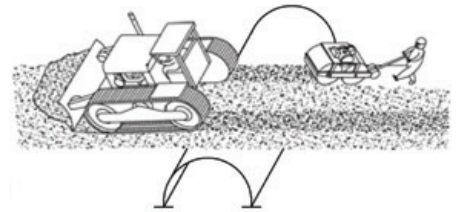
A minimum of 200mm of backfill must exist at all times between the spreading equipment and the structure. This layer of backfill must be built up evenly from both sides. The equipment used shall not be heavier than a 20,900 lb dozer with 600mm cover for spreading material and not heavier than a 1,500 lb walk behind compactor with 200mm cover for compaction.

If the backfill is not to be placed immediately to the finished elevation, a wearing and traveling surface is to be built over the critical backfill zone in order to maintain a minimum allowable cover.

Figure 1: Backfilling and Compacting

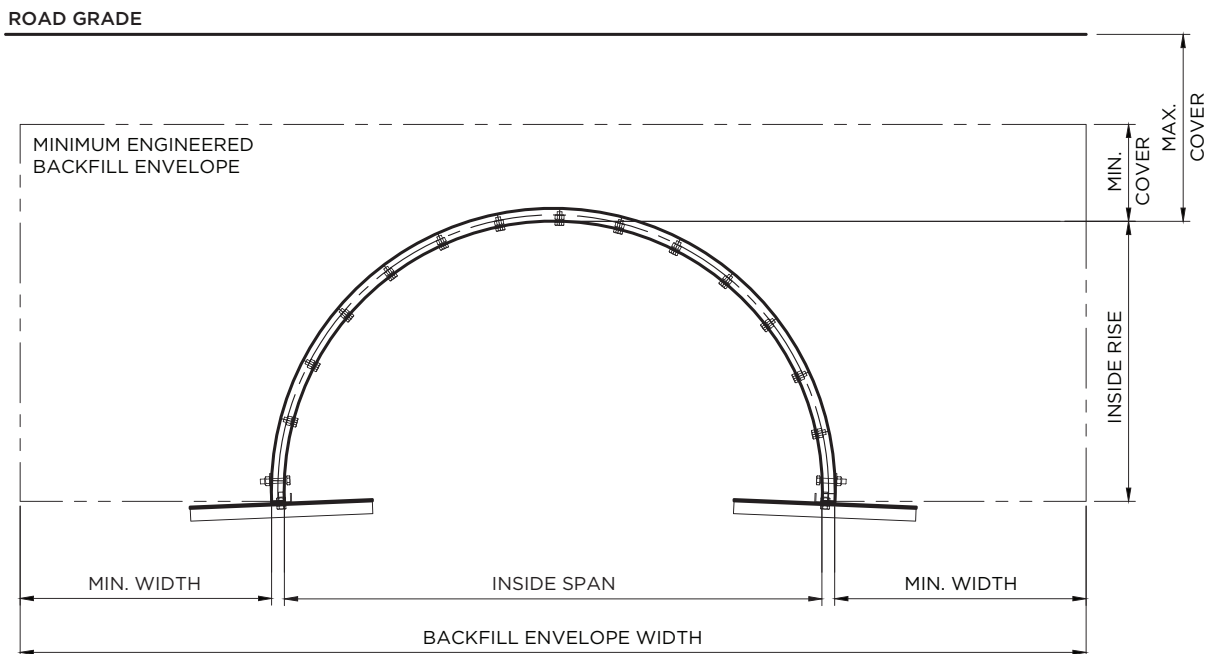


Backfill and compaction parallel to arch up to 3/4 rise above top of footing.



Backfill and compaction perpendicular to arch from 3/4 rise above top of footing to finished grade.

Figure 2: Typical backfill envelope



NOTE:
See drawings for required dimensions

ATLANTIC

Shediac, NB
Sackville, NB
Truro, NS
Bishop's Falls, NL
St. John's, NL

CENTRAL

Cambridge, ON
Comber, ON
Forest, ON
Guelph, ON
Orangeville, ON
Peterborough, ON
Sudbury, ON
Thunder Bay, ON
Walkerton, ON
Woodstock, ON
St-Augustin, QC
St-Clet, QC

PRAIRIES

Calgary, AB
Edmonton, AB
Grande Prairie, AB
Ponoka, AB
Redwater, AB
Winnipeg, MB
Regina, SK
Saskatoon, SK

WESTERN

Dawson Creek, BC
Genelle, BC
Langley, BC
Nanaimo, BC
Prince George, BC



Platinum member

Find out how a **MiniSpan Structure** can be used on your next project.

Call **1-800-565-1152** or visit **armtec.com**

