BUILD IN VALUE WITH SUPER·COR® STRUCTURAL STEEL PLATE.

NET ZERO BY 2050

AIL
Atlantic Industries Limited
We Support You.

Super•Cor GRS Bridge provides wider, safer roadway and increased flood resilience in Kelowna replacement

VIEW PROJECT PROFILE

Stream Crossing, Kelowna, BC

We've been adding value to some of the world's most successful infrastructure projects for over 60 years.

Grade Separation, Clyde River, PE

We're all about support.

Engineered structures from Atlantic Industries Limited (AIL) can support multiple lanes of highway traffic, the heaviest freight trains or the largest mining vehicles. However, those structures are only as strong as the people supporting them with full design and engineering services, on-time manufacturing and delivery and dependable field supervision. Our people have been supporting some of the world's largest infrastructure projects for over 60 years.

A Canada-wide network and international scope

With a Canada-wide network of sales teams, engineering offices and manufacturing facilities, AIL is a proven project partner ready to help you through every stage of your next infrastructure project. Plus, as a member of The AIL Group of Companies, we bring a world of resources and expertise to our projects in the transportation, public works, mining, development and forestry sectors.

AIL offers a wide range of efficient bridges — Structural Plate, Prefabricated, Modular — all engineered to deliver optimum performance and value for your application. We also provide supporting products like Corrugated Pipe, MSE Retaining Walls, Abutment Systems and Sound Barrier Walls. By design, our complete line of resilient and sustainable solutions are easy to ship and install with minimal equipment and labour requirements, making them ideal even in remote locations.

AIL | Canada's Bridge & Infrastructure Company™

For project assistance throughout Canada, call 1-877-245-7473. Outside Canada, call +1-778-335-7000.

Trail Underpass. St. Johnsbury, VT

SUPER·COR®
Structural Steel Plate

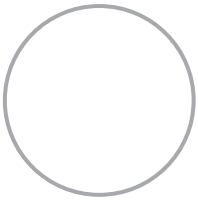
AIL is your single source for a comprehensive engineered package including specifications, drawings, structure, footings, headwalls, wingwalls and fascia finishes.

Box Structure

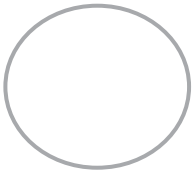
Standard Arch

Low Profile Arch

High Profile Arch



Round



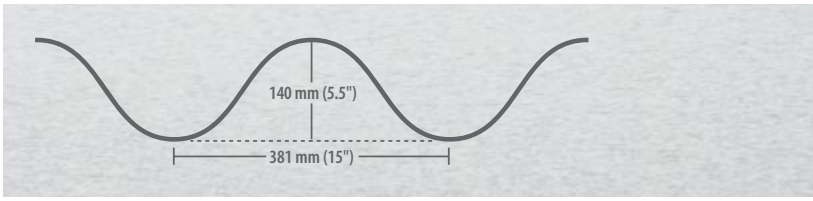
Ellipse

Suitable for medium-size applications.

RECOMMENDED FOR

- Grade Separations
- Road or Rail Underpasses
- Stream Crossings
- Box Structures
- Heavy Haul Road Crossings
- Stockpile Tunnels
- Bridge Rehabilitation
- Storage Structures
- Portals and Canopies
- Culvert Relines
- Wildlife Overpasses & Underpasses

Super·Cor® combines the advantages of lightweight construction with the superior strength and durability of deep-corrugated, galvanized steel to create some of the world's largest corrugated metal structures. With thousands of structures since the early 1990s, Super·Cor® is a proven choice for resilient and sustainable bridging solutions with a lower carbon footprint than concrete.



The larger, annular corrugations in Super·Cor® provide nine times the stiffness of conventional structural plate, allowing it to withstand the heaviest of loads. Not only is Super·Cor® the most versatile and economical corrugation on the market, it is also the most internationally accepted and widely used.

- Preferred solution to conventional bridges
- Ideal for Accelerated Bridge Construction
- Handles extreme loadings
- Optimal for spans of 6 m (20') to 20 m (65')
- Corrugation profile of 381 mm (15") pitch × 140 mm (5.5") depth
- Available in steel thicknesses of 4 mm (.16") to 8 mm (.32")
- Available in: Box Structures; Standard, Low or High Profile Arches; Rounds and Ellipses
- Bottomless designs are environmentally friendly
- Available with tested and approved protective coating systems
- Designed and manufactured to National Standards at our third-party quality-certified facility ISO 9001-2015

Wildlife Overpass, Banff, AB

VIEW PROJECT PROFILE

Lightweight and super strong, Super·Cor® is the most internationally accepted and widely used deep corrugation profile.

Intermodal Hub, Kleinberg, ON

Haul Road Crossing, near Grants, NM

VIEW PROJECT PROFILE

Deep Cover Stream Crossing, Highway 725, Josephine Creek, AB

Stream Crossing, Enderby, BC

BEST·KOTE™
Revêtement pour pont enterré

Premium coatings to extend the service life of structures in aggressive environments.

Building on the years of proven performance of polymer-coated corrugated steel pipe, AIL has partnered with some of the world's leading developers of coatings to provide Best·Kote® Structural Plate Coating. For extended service life of Super·Cor® structures, Best·Kote® offers superior protection and long-term durability.

- +75 YEAR service life
- Economical solution for extended service life of structure; ideal for aggressive environmental conditions
- Protects against corrosion, abrasion and inorganic acid, salts or alkali (diluted)
- Can be applied to all or part of a structure
- Special bolts and fasteners maintain integrity of coating during assembly

Best·Kote® offers long-lasting 360° protection against corrosion, abrasion and inorganic acid, salts or alkali (diluted).

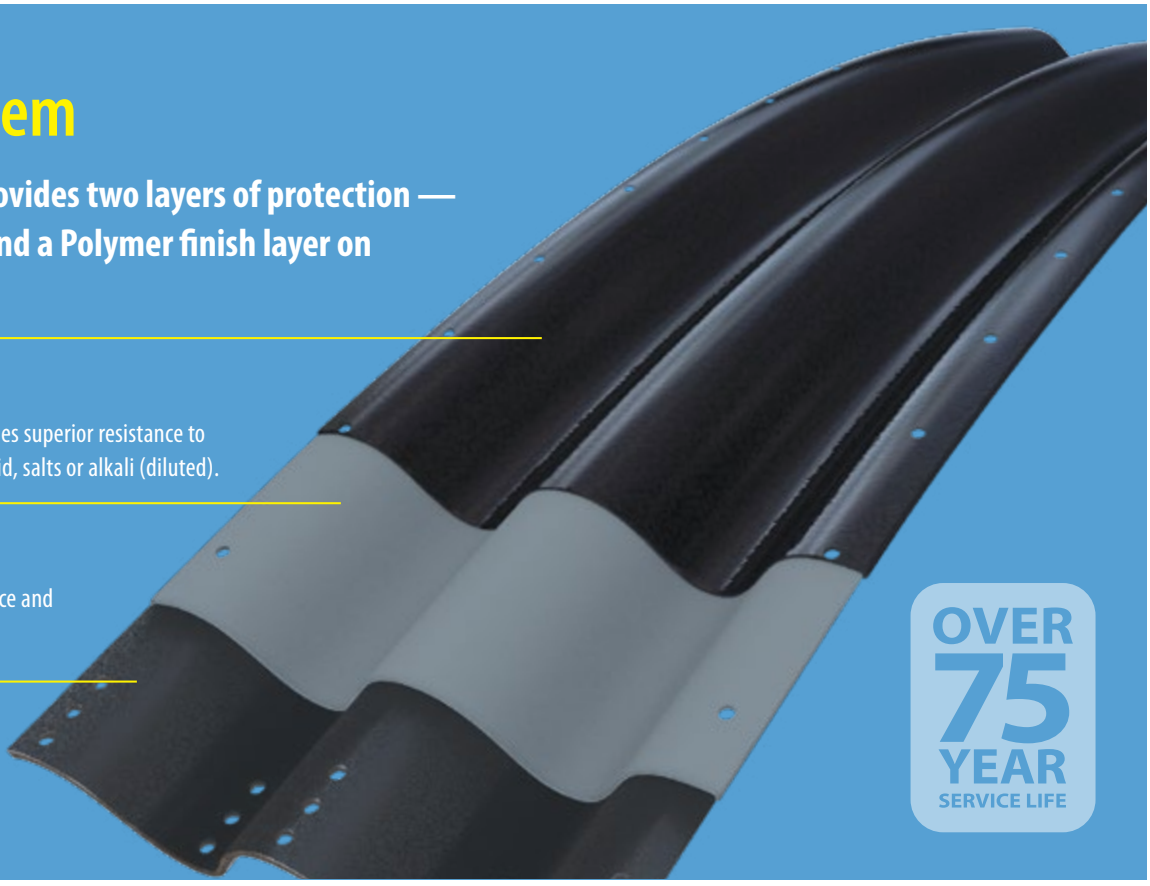
Polymer System

This coating system provides two layers of protection — a zinc-rich base layer and a Polymer finish layer on top of the steel plate.

Polymer Finish Layer
Ethylene Acrylic Acid Polymer provides superior resistance to corrosion, abrasion and inorganic acid, salts or alkali (diluted).

Zinc-Rich Base Layer
Provides excellent corrosion resistance and barrier protection.

Steel Plate



AIL's Buried Metal Bridges offer many advantages over concrete structures and girder-style bridges.

- Save time and money on all aspects of the structure: material, shipping, foundations and footings, labour and equipment and life cycle maintenance
- "Greener" alternatives to concrete structures
- Seamless, wider and safer road surface than girder-style bridges
- More flexible and resilient to climate change weather events than concrete structures
- Minimized site impact
- Ideal for Accelerated Bridge Construction
- Customized geometries to meet site-specific requirements
- Lightweight, easy to ship and install
- Larger, stronger for the heaviest loads
- Can accept a range of backfill materials
- A proven technology with global acceptance
- Value Engineering opportunities
- Equally suitable for urban, rural and remote locations

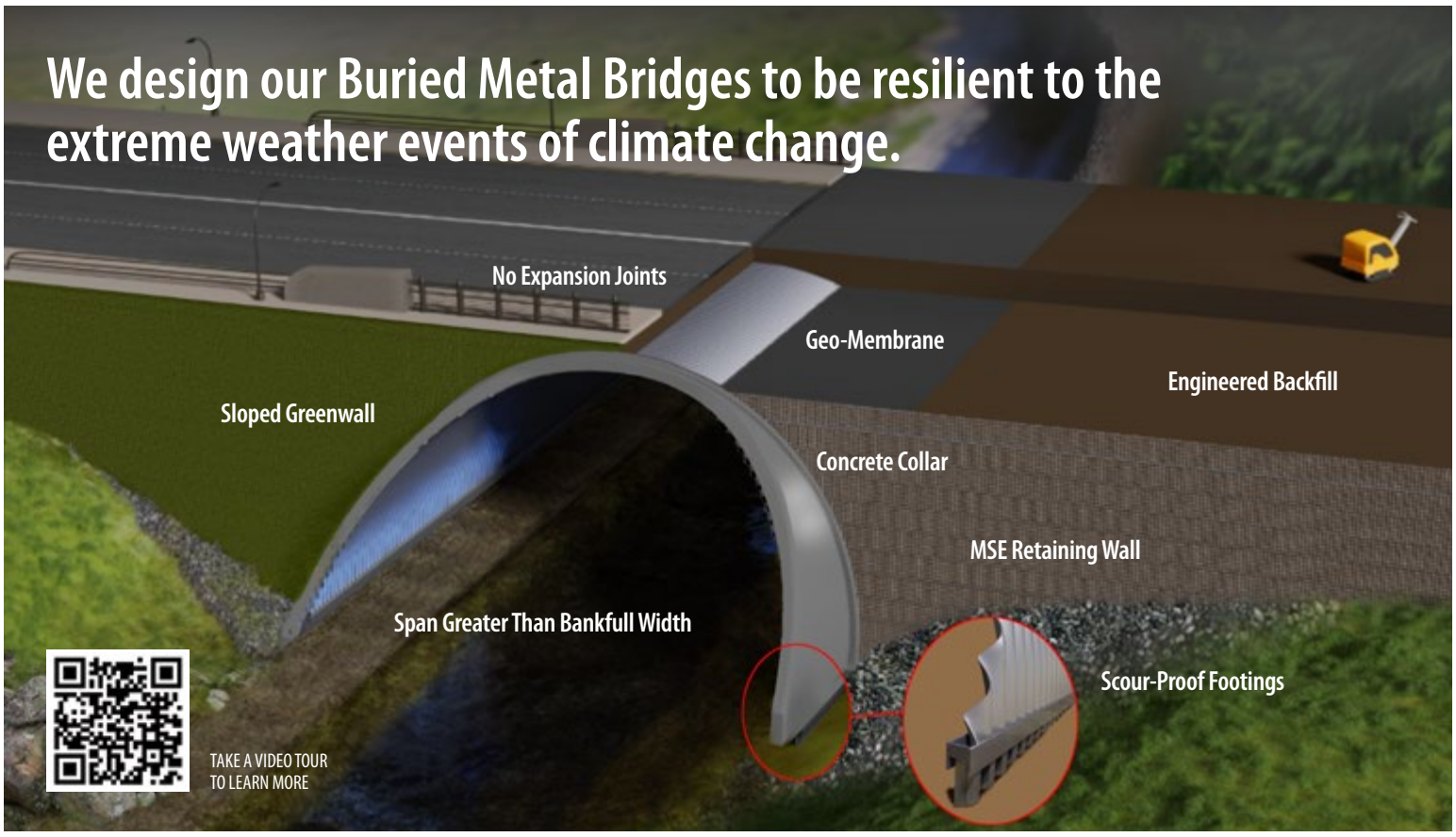
VIEW ALL BURIED METAL BRIDGE BENEFITS

Buried Steel Bridges have a substantially lower life cycle carbon footprint than concrete bridges.

- Steel is the world's most recycled material*
- Less energy is used in the production and shipping of Buried Steel Bridges than concrete bridges
- Buried Steel Bridges can be built in significantly less time, reducing disruption time and detours and expediting construction schedules
- Buried Steel Bridges require less maintenance than concrete beam bridges
- Zinc used in galvanizing is a naturally occurring material and is 100% recyclable**

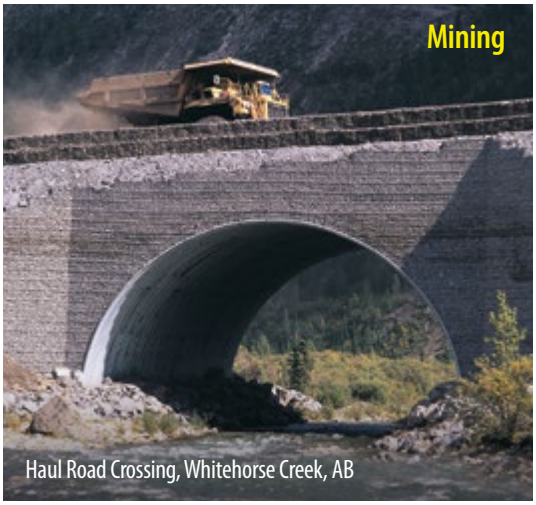
*Reference: www.aisc.org
**Reference: https://galvanizeit.org/hot-dip-galvanizing/is-galvanizing-sustainable/hdg-environmental-advantages

We design our Buried Metal Bridges to be resilient to the extreme weather events of climate change.



TAKE A VIDEO TOUR TO LEARN MORE

Applications Gallery



Strong

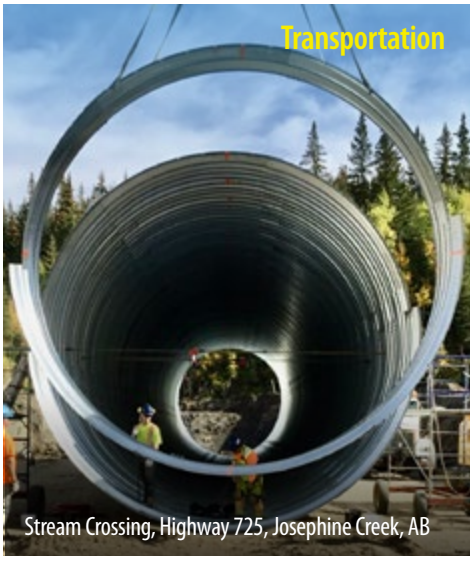
Larger, annular corrugations allow Super•Cor® structures to withstand the heaviest of loads.

Versatile

Long spans, shallow covers, a variety of shapes and reinforcement options extend Super•Cor's application range.

Durable

Heavy-duty galvanized coating is bonded to surface. Optional Best•Kote® Polymer Coating can extend service life to over 75 years.



Economical

Super•Cor® is easy to ship and install with local crews and equipment, even in remote locations.

Very Low Maintenance

Unlike conventional structures, which frequently require retrofits, Super•Cor® is virtually maintenance-free.

Environmentally Friendly

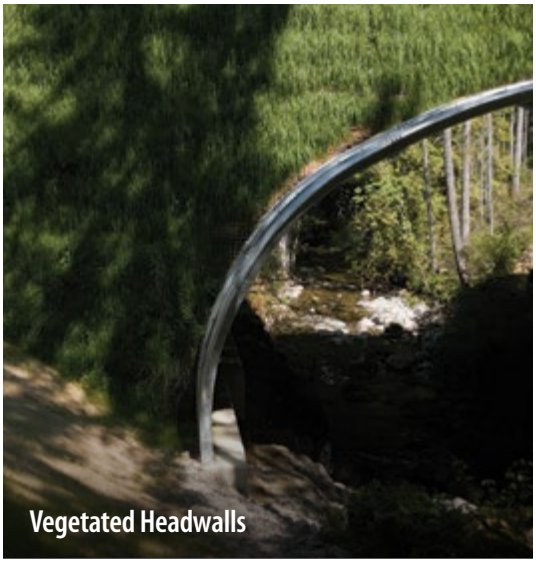
Made from recycled and recyclable steel, Super•Cor® structures typically install with less impact on stream beds and fish habitat.

Aesthetic treatments and more for today's Buried Metal Bridges

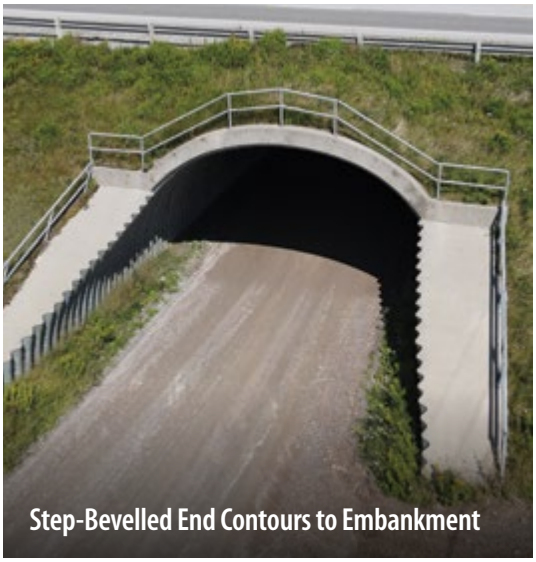
AIL's buried metal bridges and tunnels offer many opportunities to bring enhanced aesthetics to your projects, inside and out. From interior finishes and lighting to exterior end treatments and even urban greenways over top, take a look at what's available in our design aesthetics toolbox.

VIEW COMPLETE DESIGN IDEAS GALLERY


Interior Finishes and Architectural Lighting


Vegetated Headwalls

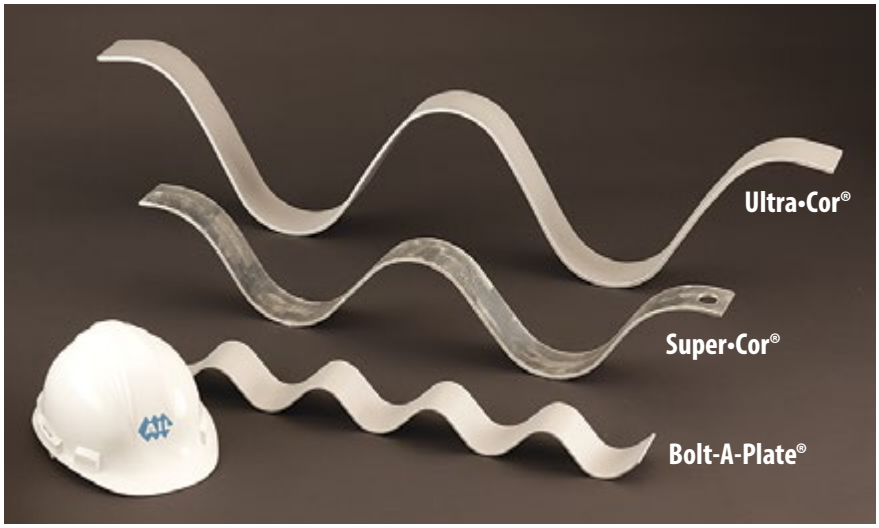

Urban Greenways


Step-Bevelled End Contours to Embankment


Precast Panel, Cast-in-Place, Masonry or Natural Stone Headwalls

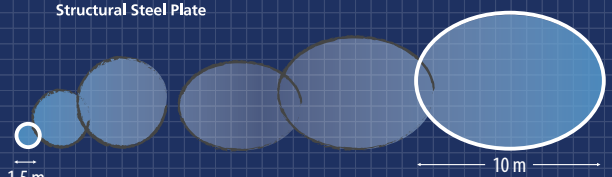
A structural plate for every application.

We specialize in Value Engineering cost-effective solutions for applications of all types. Our high-quality products, engineering excellence and innovative designs are key to delivering the best results for our clients.



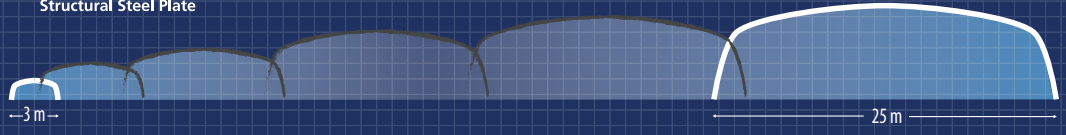
From the smallest structure to the world's largest Buried Metal Bridge — AIL has it covered.

BOLT·A·PLATE®
Structural Steel Plate



With spans that can reach 10 m, Bolt-A-Plate® is recommended for smaller applications. Available in a wide range of shapes.

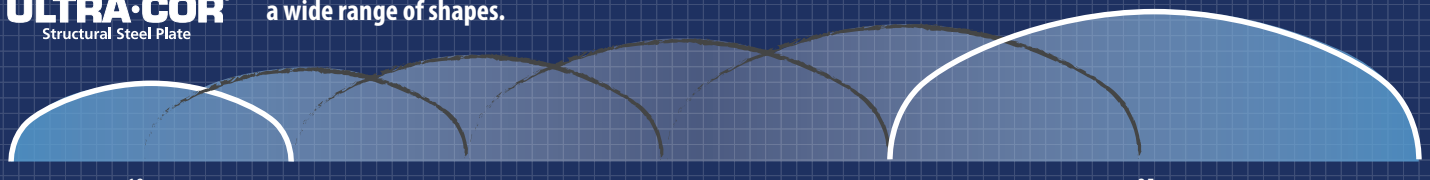
SUPER·COR®
Structural Steel Plate



Deep-corrugated Super•Cor® is ideal for medium-sized applications, with spans able to reach 25 m. Available in a wide range of shapes.

ULTRA·COR®
Structural Steel Plate

The ultra-deep corrugations of Ultra•Cor® make it ideal for the largest and most extreme applications, with spans able to exceed 35 m. Available in a wide range of shapes.

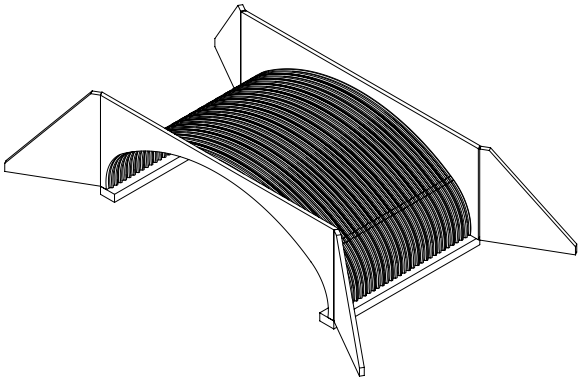


Super•Cor® Arches are optimal for spans of 6 m (20') to 20 m (65'). They can be installed with minimal environmental impact.

High-profile Super•Cor® arches are ideal for grade separations or in applications requiring large end areas or wider spans.

Your complete solution.

AIL is your single source for a comprehensive engineered package including the structure, footings, headwalls, wingwalls, fascia finishes and guiderail systems.



Rail Underpass under construction, Vicksburg, MO

SAVE TIME AND MONEY
Super•Cor® structures erect quickly with less labour and transportation costs. In some cases, it is not necessary to interrupt vital 24-hour traffic.

Mine Portal, Enterprise Creek, BC

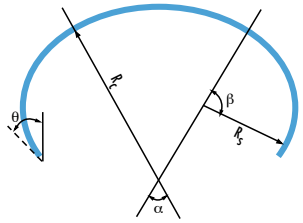
Stream Crossing, Enterprise Creek, BC

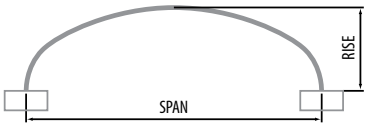
Geotextile Reinforced Soil (GRS) Bridge, Port Alberni, BC

Stream Crossing under construction, Kelowna, BC

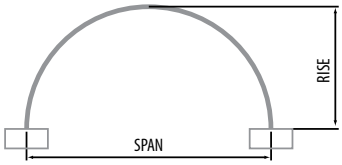
Arch Details

Typical Arch Profile

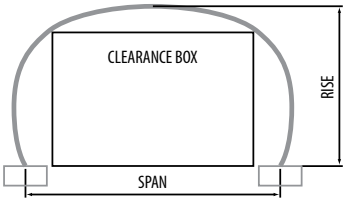




Low Profile Arch



Standard Arch



High Profile Arch

Available Sizes

Custom sizes/geometries are also available. Consult your AIL Technical Sales Representative.

Arch No.	Max. Span (mm)	Max. Span (ft.-in.)	Bottom Span (mm)	Bottom Span (ft.-in.)	Total Rise (mm)	Total Rise (ft.-in.)	End Area (m^2)	End Area ($ft.^2$)	Total S
SCA1	6990	22-11	6990	22-11	3495	11-5	19.20	207	27
SCA2	7250	23-9	7250	23-9	3625	11-11	20.60	222	28
SCA3	7510	24-8	7510	24-8	3755	12-4	22.10	238	29
SCA4	7640	25-1	7640	25-1	3820	12-6	23.70	255	30
SCA5	8000	26-3	7994	26-3	3594	11-9	23.53	253	30
SCA6	8030	26-4	8030	26-4	4015	13-2	25.30	272	31
SCA7	8290	27-2	8290	27-2	4140	13-7	27.00	290	32
SCA8	8550	28-1	8550	28-1	4270	14-0	28.70	308	33
SCA9	8800	28-10	8800	28-10	4400	14-5	30.40	327	34
SCA10	9000	29-6	8983	29-6	3760	12-4	28.15	303	33
SCA11	9000	29-6	8724	28-7	5168	16-11	40.67	438	40
SCA12	9060	29-9	9060	29-9	4530	14-10	32.20	347	35
SCA13	9320	30-7	9320	30-7	4660	15-3	34.10	367	36
SCA14	9500	31-2	9456	31-0	3956	13-0	31.54	340	35
SCA15	9580	31-5	9580	31-5	4790	15-9	36.00	388	37
SCA16	9840	32-3	9840	32-3	4920	16-2	38.00	409	38
SCA17	10000	32-10	9967	32-8	3961	13-0	33.14	357	36
SCA18	10000	32-10	9740	31-11	4547	14-11	38.93	419	39
SCA19	10000	32-10	9690	31-9	5371	17-7	47.06	507	43
SCA20	10100	33-2	10100	33-2	5045	16-6	40.00	431	39
SCA21	10360	34-0	10360	34-0	5175	17-0	42.10	453	40
SCA22	10500	34-5	10476	34-4	3974	13-9	34.75	374	37
SCA23	10870	35-8	10870	35-8	5435	17-10	46.40	500	42
SCA24	11000	36-1	10947	35-11	4193	13-9	38.53	415	39
SCA25	11000	36-1	10697	35-1	4776	15-8	44.86	483	42
SCA26	11000	36-1	10642	35-3	5864	19-3	56.27	606	47
SCA27	11390	37-4	11390	37-4	5695	18-8	50.90	548	44
SCA28	11500	37-9	11462	37-7	4221	13-10	40.26	433	40
SCA29	11910	39-1	11910	39-1	5955	19-6	55.70	599	46
SCA30	12000	39-4	11974	39-3	4259	14-0	42.02	452	41
SCA31	12000	39-4	11781	38-8	5639	18-6	57.10	615	47
SCA32	12000	39-4	11612	38-0	6113	20-0	63.68	685	50
SCA33	12430	40-9	12430	40-9	6210	20-4	60.60	652	48
SCA34	12500	41-0	12447	40-10	4501	14-9	46.26	498	43
SCA35	12940	42-6	12940	42-6	6470	21-3	65.80	708	50
SCA36	13000	42-8	12964	42-6	4553	14-11	48.18	519	44
SCA37	13000	42-8	12745	41-10	5890	19-4	64.39	693	50
SCA38	13000	42-8	12662	41-6	6460	21-2	72.07	776	53
SCA39	13460	44-2	13460	44-2	6730	22-1	71.10	765	52

Structure numbers in bold denote single radius arch. All dimensions are to inside of crest of steel.

Arch No.	Max. Span (mm)	Max. Span (ft.-in.)	Bottom Span (mm)	Bottom Span (ft.-in.)	Total Rise (mm)	Total Rise (ft.-in.)	End Area (m^2)	End Area ($ft.^2$)	Total S
SCA40	13500	44-3	13479	44-3	4612	15-2	50.12	540	45
SCA41	13980	45-10	13980	45-10	6985	29-11	76.70	826	54
SCA42	14000	45-11	13958	45-10	4877	16-0	54.88	591	47
SCA43	14000	45-11	13872	45-6	6543	21-6	75.91	817	54
SCA44	14000	45-11	13641	44-9	7009	23-0	83.57	900	57
SCA45	14500	47-7	14433	47-4	5150	16-11	59.87	644	49
SCA46	15000	49-3	14960	49-1	5232	17-2	62.15	669	50
SCA47	15000	49-3	14780	48-6	7022	23-0	87.32	940	58
SCA48	15000	49-3	14663	48-1	7351	24-1	92.90	1000	60
SCA49	15010	49-3	15010	49-3	7505	24-11	88.50	952	58
SCA50	15500	50-10	15441	50-8	5520	18-1	67.55	727	52
SCA51	15530	50-11	15530	50-11	7765	25-6	94.70	1019	60
SCA52	16000	52-6	15942	52-4	4922	16-2	64.47	694	52
SCA53	16000	52-6	15870	52-1	6666	21-10	89.41	962	59
SCA54	16000	52-6	15543	51-0	7982	26-2	111.11	1196	66
SCA55	16050	52-8	16050	52-8	8025	26-4	101.10	1088	62
SCA56	16500	54-2	16406	53-10	5168	16-11	69.78	751	54
SCA57	16570	54-8	16570	54-8	8280	27-2	107.70	1160	64
SCA58	17000	55-9	16930	55-7	5224	17-2	72.02	775	55
SCA59	17000	55-9	16909	55-6	6720	22-1	94.96	1022	61
SCA60	17000	55-9	16478	54-0	8483	27-10	124.98	1345	70
SCA61	17220	56-6	17220	56-6	8610	28-4	114.60	1233	66
SCA62	17500	57-5	17451	57-3	5285	17-4	74.29	800	56
SCA63	17600	57-8	17600	57-8	8800	28-10	121.60	1309	68
SCA64	18000	59-1	17921	58-10	5547	18-2	80.14	863	58
SCA65	18000	59-1	17886	58-8	6999	23-0	104.17	1121	64
SCA66	18110	59-5	18110	59-5	9068	29-9	128.90	1387	70
SCA67	18500	60-8	18447	60-6	5617	18-5	82.59	889	59
SCA68	19000	62-4	18912	62-1	5889	19-4	88.82	956	61
SCA69	19000	62-4	18926	62-1	7099	23-3	110.10	1185	66
SCA70	19150	62-10	19150	62-10	9576	31-5	155.81	1550	74
SCA71	19500	64-0	19448	63-10	5968	19-7	91.46	984	62
SCA74	20190	66-3	20190	66-3	10083	33-1	160.00	1722	78

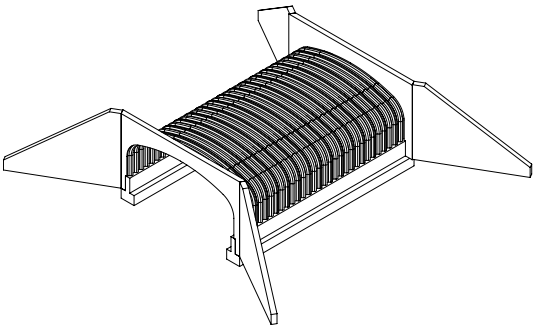
Ultra•Cor® is recommended for spans greater than 18 m (60').
Bolt-A-Plate® is recommended for spans less than 10 m (33').

Super•Cor® Boxes offer the perfect solution for long-span, low-rise situations with shallow cover.

Super•Cor® Boxes combine the strength and cost advantages of AIL's Super•Cor® corrugation profile with a special, patented reinforcement along the length of the structure. The extra strength of this reinforcement permits designs exceeding 20 m (65').

Your complete solution.

From preliminary specifications and drawings through to project completion, AIL is your single source for a comprehensive engineered package including the structure, footings, headwalls, wingwalls, fascia finishes and guiderail systems.



Service Road Underpass, Highway 103, NS

Value Engineered with Partial Coating

TWO-STAGE CONSTRUCTION KEEPS TRAFFIC RUNNING

This highway twinning project required a two-stage construction sequence, with the structure for the new west-bound lanes being built first with a temporary MSE Wire Wall on the median side. Once this crossing was complete and opened to two-way traffic, the old three-span concrete bridge could be demolished in preparation for the new and re-aligned east-bound roadway to be constructed adjacent to the west-bound.

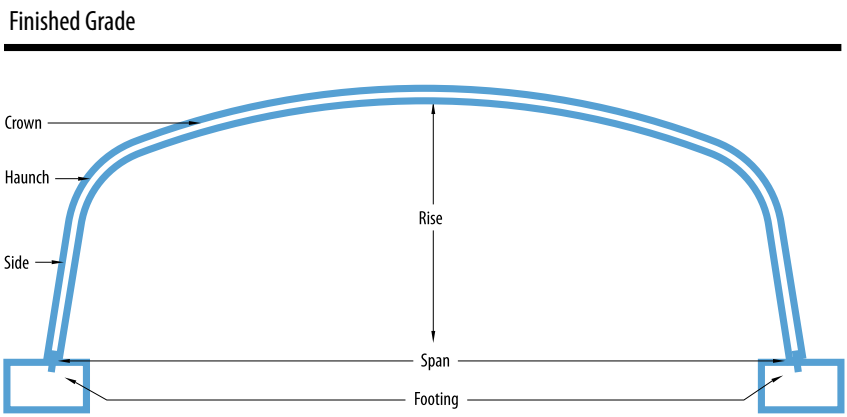
Two-Stage Construction, Highway Overpass, Windsor, NS

Structural Cross Section

Recommended Cover Heights

Minimum 450 mm (18") for spans up to 8 m (26'). Minimum 600 mm (24") for spans above 8 m (26').
Shallower covers are possible when concrete pavement is used.

Maximum cover can be greater than 1500 mm (59"), though optimal is less than 1500 mm (59") for highway loading.



Super·Cor® Box Culverts offer optimal clearance box and hydraulic flow geometry along with shallow covers.

Box Details

Available Sizes

Custom sizes/geometries are also available. Consult your AIL Technical Sales Representative.

STRUCTURE NUMBER	SPAN			RISE			AREA	
	mm	ft.	ft.-in.	mm	ft.	ft.-in.	m^2	$ft.^2$
SB-3H	3527	11.571	11' 7"	1457	4.780	4' 9"	4.37	47.04
SB-4L	3913	12.838	12' 10"	1321	4.334	4' 4"	4.67	50.27
SB-4H	3933	12.903	12' 11"	1638	5.374	5' 4"	5.70	61.35
SB-5L	5153	16.906	16' 11"	1629	5.344	5' 4"	7.06	75.99
SB-5H	5051	16.571	16' 7"	2032	6.667	6' 8"	9.06	97.52
SB-6L	6005	19.701	19' 8"	1695	5.561	5' 7"	8.48	91.28
SB-6H	6093	20.000	20' 0"	2068	6.785	6' 9"	10.82	116.46
SB-7L	7002	22.000	22' 0"	1966	6.450	6' 5"	11.23	120.88
SB-7H	7016	23.018	23' 0"	2363	7.753	7' 9"	13.97	150.37
SB-8L	8008	26.273	26' 3"	2232	7.323	7' 4"	14.40	155.00
SB-8H	8011	26.282	26' 3"	2700	8.858	8' 10"	17.86	192.24
SB-9L	9065	29.740	29' 9"	2055	6.742	6' 9"	15.24	164.04
SB-9H	9047	29.681	29' 8"	2585	8.481	8' 6"	19.30	207.74
SB-10L	10092	33.110	33' 1"	2287	7.503	7' 6"	18.76	201.93
SB-10H	10108	33.162	33' 2"	2894	9.495	9' 6"	23.69	254.99
SB-11L	11023	36.164	36' 2"	2448	8.031	8' 0"	21.21	228.30
SB-11H	11024	36.168	36' 2"	3128	10.262	10' 3"	26.90	289.54
SB-12L	12021	39.438	39' 5"	2713	8.901	8' 11"	25.47	274.15
SB-12H	12024	39.448	39' 5"	3360	11.023	11' 0"	31.66	340.78

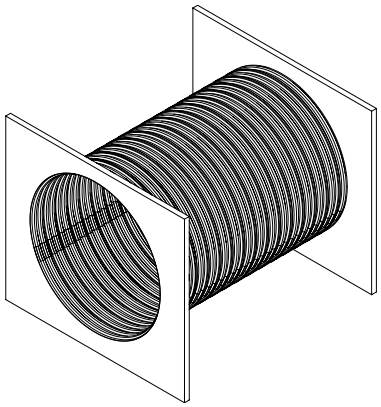
STRUCTURE NUMBER	SPAN			RISE			AREA	
	mm	ft.	ft.-in.	mm	ft.	ft.-in.	m^2	$ft.^2$
SB-13L	13018	42.709	42' 9"	2901	9.518	9' 6"	29.91	321.94
SB-13H	13130	43.077	43' 1"	3572	11.719	11' 9"	36.59	393.84
SB-14L	14011	46.000	46' 0"	3096	10.157	10' 2"	34.46	370.92
SB-14H	14091	46.230	46' 3"	4012	13.163	13' 2"	44.84	482.64
SB-15L	15069	49.438	49' 5"	3116	10.223	10' 3"	36.58	393.73
SB-15M	15008	49.238	49' 3"	3593	11.788	11' 9"	41.64	448.20
SB-15H	15056	49.396	49' 5"	4323	14.183	14' 2"	49.50	532.80
SB-16L	16011	52.529	52' 6"	3188	10.459	10' 6"	39.05	420.32
SB-16M	16023	52.568	52' 7"	3895	12.779	12' 9"	49.37	531.40
SB-16H	16005	52.509	52' 6"	4493	14.741	14' 9"	57.23	616.00
SB-17L	17098	56.095	56' 1"	3519	11.545	11' 7"	47.36	509.77
SB-17M	17086	56.056	56' 1"	4157	13.638	13' 8"	56.26	605.56
SB-17H	17086	56.056	56' 1"	4844	15.892	15' 11"	64.91	698.67
SB-18L	18004	59.068	59' 8"	3688	12.099	12' 1"	51.28	551.97
SB-18M	18026	59.140	59' 2"	4330	14.206	14' 2"	60.61	652.40
SB-18H	18095	59.366	59' 4"	5144	16.876	16' 10"	72.70	783.53
SB-19L	19037	62.457	62' 5"	3904	12.808	12' 10"	57.16	615.26
SB-19M	19010	62.368	62' 4"	4659	15.285	15' 3"	68.26	734.74
SB-19H	19021	62.404	62' 5"	5272	17.296	17' 3"	77.37	832.80

All dimensions are to inside crest of steel.

Super•Cor® Round structures permit construction of dramatically larger diameters than was previously possible with conventional structural plate pipe configurations.

This common and very versatile shape is frequently chosen for culverts, sewers and sub drains, but it can also be used for storage bins, access ways, tunnels, bridges and storm water retention/detention systems.

Round Details



Available Sizes

Smaller and custom sizes/geometries are also available.

Consult your AIL Technical Sales Representative.

Pipe No.	Diameter (mm)	Diameter (ft.-in.)	End Area (mm^2)	End Area ($ft.^2$)
SC66R	8400	27-7	55.4	596
SC68R	8650	28-5	58.7	632
SC70R	8910	29-2	62.3	671
SC72R	9170	30-1	66.0	710
SC74R	9430	30-11	69.8	751
SC76R	9690	31-10	73.7	793
SC78R	9950	32-7	77.7	836
SC80R	10200	33-6	81.7	879
SC82R	10460	34-4	85.9	925
SC84R	10720	35-2	90.2	971
SC86R	10980	36-0	94.6	1018
SC88R	11240	36-11	99.2	1068
SC90R	11500	37-8	103.8	1117
SC94R	12020	39-5	113.4	1221
SC98R	12530	41-1	123.3	1327
SC102R	13050	42-10	133.7	1439
SC106R	13570	44-6	144.6	1556
SC110R	14080	46-2	155.7	1676
SC114R	14600	47-11	167.4	1802
SC118R	15120	49-7	179.5	1932
SC122R	15640	51-4	192.1	2068

All dimensions are to inside crest of steel.

LIGHTWEIGHT AND STRONG

In mine sites around the world, Super•Cor® is used under huge stock piles.

Buried Bridges are easy to install with local crews.

AIL's Buried Metal Bridges ship and install quickly and economically, with minimal equipment and labour requirements. Our technical teams will guide you through the complete project.

Precast or cast-in-place concrete footings are set over the prepared site.

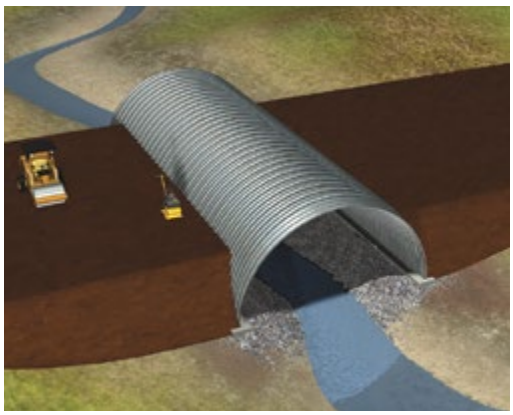
The first arch segment is completely assembled on the ground.

It is then lifted into place and bolted to the footings on either side. In most cases, a boom truck is sufficient for this.

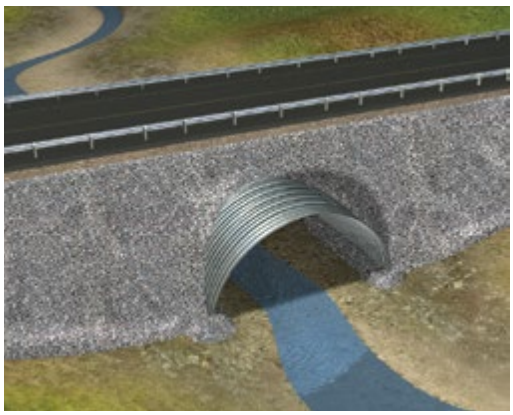
The segments bolt into base channels integrated into the concrete.

Plates then attach individually to make up other arch segments.

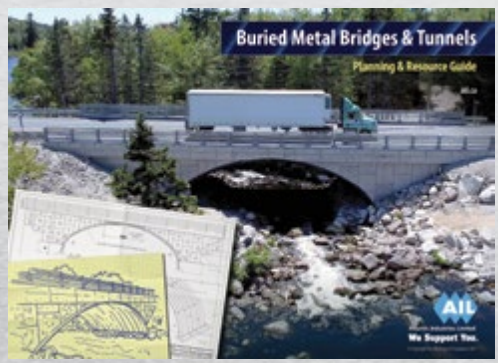
If specified, reinforcement ribs are then added.



Layers of engineered backfill are added in sequential lifts.



The road surface is then completed with safety barriers.



Download our Buried Metal Bridges & Tunnels Planning & Resource Guide

Discover how AIL's Buried Metal Bridges offer many advantages over concrete structures and bridges in this comprehensive guide with: benefits section, design ideas, aesthetic treatments, urban and northern sector/ application galleries, complete product information and comparisons and installation details.

SCAN TO DOWNLOAD BROCHURE PDF

Super•Cor® structures distribute superimposed loads to the surrounding engineered backfill, so it is essential to use care during installation and backfilling to ensure proper performance. The following guidelines will help ensure a successful project.

Structural Design

The combination of structural steel and surrounding soil allows Super•Cor® to support extremely heavy loads. Standard designs are developed in accordance with the latest edition of the Canadian Highway Bridge Design Code. However, design assistance and recommendations can be specified to your project. Contact your local AIL Technical Sales Representative for assistance.

Site Investigation and Preparation

A thorough site investigation should be conducted before installing a Super•Cor® structure. If footings are to be used, the foundation will have to be capable of supporting vertical and horizontal loads developed by the structure. The aim is to design a structurally sound foundation that will allow the structure to develop full interaction between the soil and the steel. Site preparation should provide a solid base for the structure. It should be good-quality material, free from rocks, roots, debris and organic material. Pre-shaping of the site will allow for different configurations, speed up backfill operations and encourage increased backfill contact. AIL can offer technical assistance on foundation investigation and site preparation for varying site conditions.

Excavation

Trench excavation will vary, depending on the nature of the *in situ* material. It is necessary to provide an excavated area that ensures adequate distance from soils with questionable structural integrity. If the native soil is stable, excavate only the area that is required to provide minimum bedding, backfill envelope and enough room for compaction equipment to manoeuvre. For stream-crossing applications, local authorities will impose guidelines for construction activity.

Foundations

Super•Cor® structures are flexible and can accommodate some differential settlement without distress. It is important, nevertheless, to minimize differential settlement by removing and replacing poor foundation material. Pile foundations often create differential settlement issues. Preparation should be confined to minimum, but practical, widths and should result in a uniform base for the structure. A bedding of loose material will provide a slight cushion and the bedding may be flat or shaped, depending on the structure configuration and construction methods being used. It is essential that all corrugations be filled.

Assembly

A Super•Cor® structure typically arrives at the job site in nested bundles curved to the proper radius. (Some smaller structures can be delivered fully or partially assembled). Included are bolts and any other special hardware that may be required, as well as instructions and shop drawings listing all components. Assembly is easy, requiring relatively simple tools. Correct lapping, bolt-tightening and shape-monitoring are all important to achieve the correct design dimensions. Your AIL Technical Representative can provide information and assistance to those unfamiliar with structural plate assembly.

Backfill

Super•Cor® structures require a stable, engineered backfill to retain their shape and structural integrity. The quality of the backfill envelope depends on the choice of material, placement of backfill and compaction of the envelope. AIL will detail suitable backfill materials for the structures. A well-graded, free-draining, granular backfill is preferred. There is no substitute for an examination by a geotechnical engineer.

Inspection

Inspection should be performed on a full-time basis by qualified personnel. Backfill is placed in a balanced manner in 150 mm (6") to 200 mm (8") lifts for the entire backfill envelope. Compaction testing is required to ensure that backfill material is compacted to the required density, as shown on issued drawings. It is necessary to utilize well-maintained compaction equipment of the appropriate size and specification for the application and as referenced in the drawing notes.

End Finishes

Special attention must be paid to bevelled or skewed ends. Incomplete structural rings may need to be reinforced with steel or concrete (or tied back) to maintain structural integrity. Exercise caution when placing backfill around them to avoid distortion. Standard End Finishes are: Squared, Bevelled, Partially Bevelled and Skewed.

cspi corrugated steel pipe institute

The CSPI Handbook of Steel Drainage & Highway Construction Products and the NCSPA handbook provide a new, detailed section on backfilling and the hydraulics of various steel structures.

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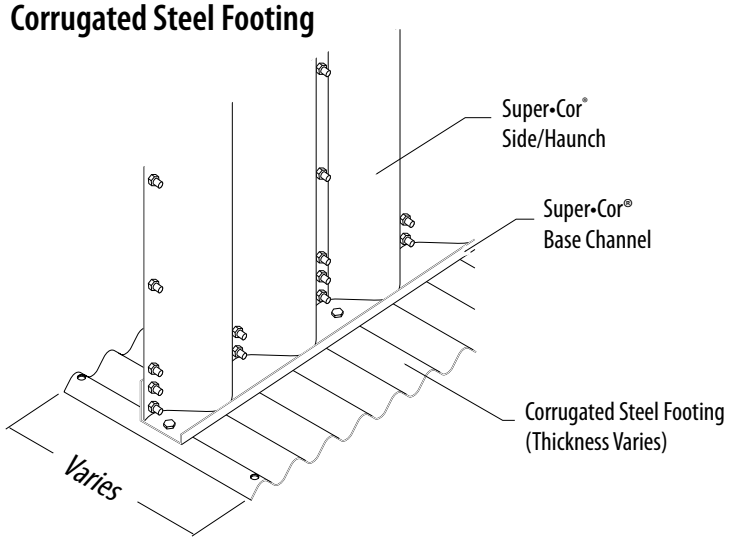
Foundation Options

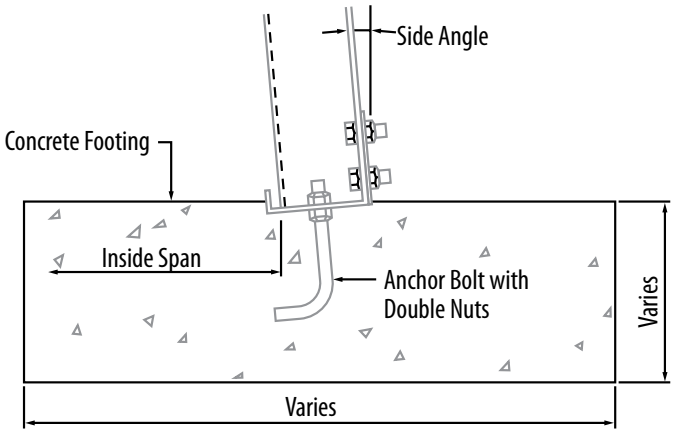
Super•Cor® packages come with a variety of footing options to suit various sites:

- Precast or cast-in-place concrete footings — the most common footing type, in which a receiving angle is embedded in concrete.
- Steel footing pads — used as a time-saving alternative to concrete footings in sites with non-erodible stream beds. If the site permits, footings should be buried a minimum of 600 mm (24") below flow line. Note: When footing pads are buried, the published end area of Super•Cor® will be reduced.

Corrugated Steel Footing



Concrete Footing



Headwall Options

In addition to enhancing their appearance, well-designed end treatments are essential to the structural and hydraulic performance of Super•Cor®.

- MSE Retaining Wall Systems with wire or concrete faces.
- Concrete, cast-in-place or precast
- Bolt-A-Bin® retaining wall systems
- Sheet Pile walls
- Welded wire gabion baskets

Coating Options

Super•Cor's heavy galvanized coating is metallurgically bonded to the steel surface, providing extended service life. Super•Cor® is supplied with a standard 915 g/m² (3 oz/ft²) coating. A heavier 1220 g/m² (4 oz/ft²) coating is also available. Properly designed and installed, Super•Cor® structures will have a design service life of over 75 years. Best•Kote® is used to achieve a design service life of 75 years in more aggressive environments.


Precast Panel Wall


Wire Wall


Steel Wall

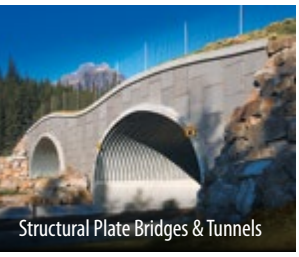
FOR PROJECT ASSISTANCE THROUGHOUT CANADA, CALL 1-877-245-7473. OUTSIDE CANADA, CALL +1-778-335-7000.

The information and suggested applications in this brochure are accurate and correct to the best of our knowledge, and are intended for general information purposes only. These general guidelines are not intended to be relied upon as final specifications, and we do not guarantee specific results for any particular purpose. We strongly recommend consultation with an Atlantic Industries Limited Technical Sales Representative before making any design and purchasing decisions.

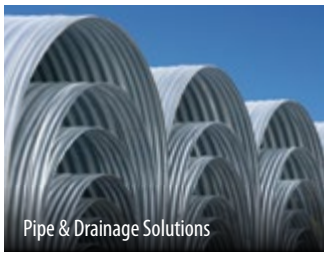
AIL products contain recycled content and are 100% recyclable.

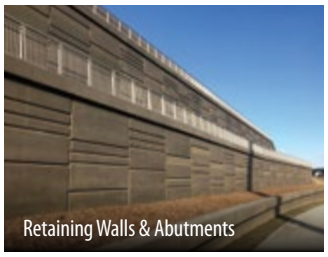
ISO Certified

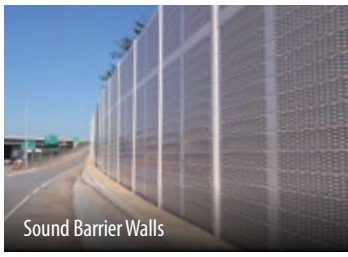
In keeping with AIL's ongoing commitment to high standards, our Plate Manufacturing Facility in Ayr, Ontario, and our Engineering Department in Cambridge, Ontario, have been certified to ISO 9001:2015.


Structural Plate Bridges & Tunnels


Prefabricated Bridges


Pipe & Drainage Solutions


Retaining Walls & Abutments


Sound Barrier Walls

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