Alberta Government

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Product Evaluation

RE: Review of BridgeCor Structural Plate Culvert

PRODUCT

BridgeCor is a Galvanized Deep Corrugated Structural Plate Pipe that is fabricated by Contech Engineered Solutions located in Winchester, Kentucky and distributed by Armtec Inc. located in Cambridge ON. Product web link: https://www.conteches.com/bridges-structures/plate/bridgecor

VENDOR CLAIMS AND INFORMATION

CLAIMS

With the introduction of BridgeCor, Contech Engineered Solutions is redefining standard bridge design. With its 381mm X 140mm advanced profile allowing designers to convert traditional bridges into more economical buried bridges by clear spanning up to 20m. This corrugation is already widely accepted by AASHTO and the international engineering community.

DESCRIPTION

BridgeCor is a deep corrugation profile developed for use in round, arch and box culvert applications. BridgeCor corrugation profile is 381 mm pitch and 140 mm depth. Contech BridgeCor is manufactured with the industries best equipment allowing for the longest laying sheets in the industry.

POTENTIAL USAGE

BridgeCor many applications such as airports, grade separations, mining tunnels, railroad tunnels rehabilitation and wetland crossings. BridgeCor many benefits are spans up to 20 m, heavy loading conditions, reduced maintenance costs, buried bridge structure, durable and corrosion resistant, reduced installation time, onsite assembly and fewer bolts. This deep corrugation profile is widely accepted by AASHTO and the international engineering community.

STANDARDS

AASHTO M167 CAN/CSA-S6-14 ASTM 761
CSA G401 – meets deep corrugated structural plate Type 1

TRANSPORTATION AND ECONOMIC CORRIDORS COMMENTS

ADDITIONAL TECHNICAL REQUIREMENTS

Culverts with a diameter equal to or greater than 1.5 meters are classified as bridge size structures, and as such must be designed, fabricated and constructed in accordance with all the requirements of the “Engineering Consultant Guidelines for Highway and Bridges – Volumes 1 & 2”, and the codes and documents references contained within the manuals.

Suppliers of new culvert materials should be familiar with the design and fabrication processes contained within the manuals that are applicable to their product. They should also ensure that all technical information, design parameters, materials data etc for their product that are necessary to meet the design requirements of the manuals are available to the hydrotechnical, structural, fabrication, and construction engineers upon request.

Canada Culvert shall ensure that the BridgeCor product meets the requirements of Section 18 of the Bridge Construction Specification of CSP and SPCSP Structures (i.e. fabrication, inspection, sampling and testing, handling and shipping requirements).

Bolting configuration: A joint research project between Alberta Transportation (AT), and the University of Alberta (U of A) carried out in 1987 proved conclusively that the ductile performance of the longitudinal seams of SPCSP's could be significantly improved depending on how they were lapped. Based on the findings of the U of A report AT's current standard is to only allow two-bolt configurations for longitudinal seams, and that the seams be lapped in accordance with the recommendations of the report i.e. that the bolts in the valleys are closest to the visible edge.

If a supplier wishes to deviate from AT's current two-bolt standard, then it is their responsibility to provide satisfactory proof to AT that the system of bolting proposed will provide equal or superior performance to the current standard in terms of ductility and strength. (Copies of the 1987 U of A report are available upon request).

EXPERIENCE

Transportation and Economic Corridors has no experience with this product.

RECOMMENDATIONS

BridgeCor be listed as a Potential Product under Transportation and Economic Corridors Products List, Culvert – Structural Plate Corrugated Metal Pipe – Proprietary, based on the information provided. Final acceptance as a proven product will be based on field performance.

TRIAL PROJECTS

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