CONTECH®
ENGINEERED SOLUTIONS
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# CMP SOLUTIONS
# for Counties & Municipalities

CONTECH®
PIPE SOLUTIONS

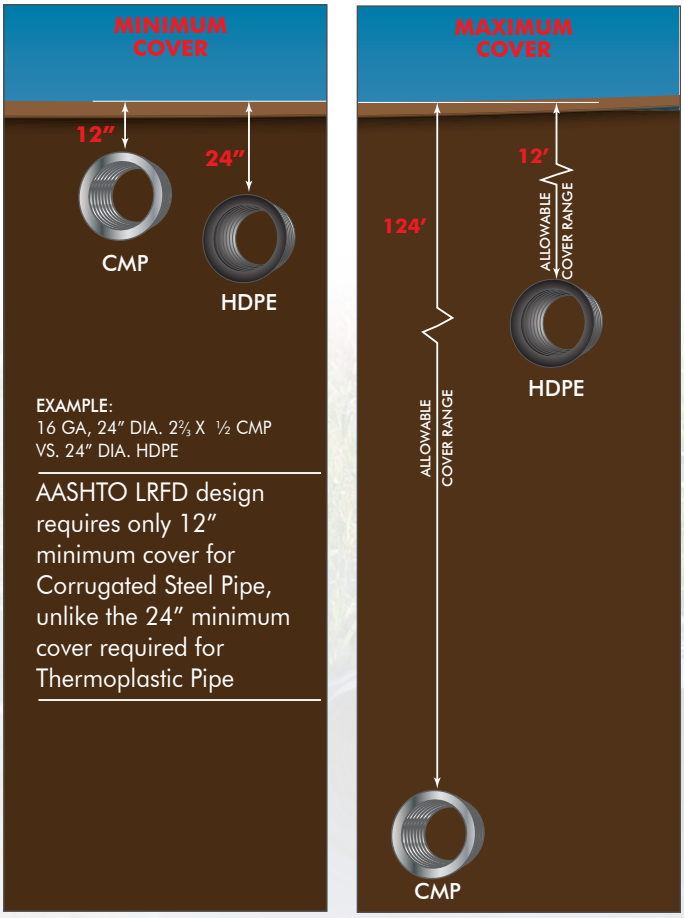
# CMP SOLUTIONS »
# HEL-COR® AND ULTRA FLO®

With over 100 years of proven performance, Contech corrugated metal pipe (CMP) solutions offer the best combination of pipe strength and economy for culverts and storm sewers. CMP is available in round and pipe-arch shapes up through 144" diameter and can be manufactured with helical, lock-seam construction or annular corrugations with riveted or spot welded seams. A variety of coupling systems are available to meet the project requirements.

**ULTRA FLO®** manufactured by Contech Engineered Solutions is one of the most hydraulically efficient storm sewer systems available because of its smooth interior surface, longer length, fewer joints and prefabricated junctions that include elbows, manholes and catch basins.

Typical applications for CMP include culverts, stormwater detention systems, small bridges, conduits and storm sewers. A wide variety of wall thicknesses (gages), corrugations, diameters and pipe section lengths permit a choice of materials to meet specific job site requirements.

## HEIGHT OF COVER COMPARISON




### Features & Benefits

- Strength of steel
- Ideal in both shallow and deep cover situations
- Higher pipe stiffness – keeps pipe round during backfill process
- Long lengths of 40'-50' – eliminates joints and speed installation
- Lightweight – enables easy handling, installation and use of small equipment
- Prefabricated fittings (e.g. elbows, compound elbows, wyes, tees, bulkheads, fish baffles, stubs, risers and reducers) – speeds construction and eliminates expensive junction boxes
- Durable – provides lower cycle life costs
- Economical drainage pipe – yields up front savings

## END SECTIONS

Contech® End Sections provide a practical, economical and hydraulically superior method of finishing a variety of culvert materials. The lightweight, flexible metal construction of Contech End Sections creates an attractive, durable and erosion-preventing treatment for all sizes of culvert inlets and outlets.

### Features & Benefits

- Increased hydraulics
- Improved appearance
- Cost-effective installation
- Low maintenance
- Prefabricated beveled or step beveled ends for practical end treatment
- Steel flared end sections – prevents inlet/outlet erosion

# DURABLE MATERIAL OPTIONS & COATING ALTERNATIVES

- Galvanized Steel
- Aluminized Steel Type 2 (ALT2)
- Polymer Coated
- Aluminum Alloy

## A Variety of Options with Estimated Service Life of 75+ Years

### ALT2 - More than just a coating

**Aluminized Steel Type 2** offers the best in economy and durability combined. The aluminum oxide barrier forms in both hard and soft water. The aluminum layer is corrosion resistant and provides cathodic protection. And the thick alloy layer is both abrasion resistant and a pit arrestor.

The U.S. Department of Transportation has stated, "Our field studies suggest that in the absence of abrasion, an Aluminized Steel Type 2 pipe may have a service life up to 8.0 times that predicted for galvanized pipe by the California Method. (If only waterside corrosion is considered, the ratio becomes 3.5). This is a very similar result to the previous study by Potter et al., which suggested that the Aluminized Steel Type 2 should last 6.2 times the life predicted for galvanized culvert."

| ESTIMATED CMP SERVICE LIFE | | | |
|---|---|---|---|
| Material | Estimated Pipe Service Life* | Site Environmental Conditions | Maximum FHWA Abrasion Level[1] |
| Galvanized CSP (Minimum 16 gage) | 25 - 50 Years | 6.0 ≤ pH ≤ 10.0<br>2000 ≤ r ≤ 8000 (ohm-cm)<br>Water Hardness (< 62.5 ppm $CaCo_3$) | Level #2 |
| Aluminized Steel Type 2 CSP (Minimum 16 gage) | 75+ Years[2] | 5.0 ≤ pH ≤ 9.0<br>r > 1500 ohm-cm | Level #2 |
| Polymer Coated CSP (Minimum 16 gage) | 100 Years | 5.0 ≤ pH ≤ 9.0<br>r > 750 ohm-cm | Level #3 |
| | 75+ Years | 4.0 ≤ pH ≤ 9.0<br>r > 750 ohm-cm | |
| | 50+ Years | 3.0 ≤ pH ≤ 12.0<br>r > 250 ohm-cm | |
| Aluminum Alloy | 100 Years | 4.0 ≤ pH ≤ 9.0<br>r > 500 ohm-cm | Levels #1,#2 or #3 |

*NOTES: [1] Refer to Table 9.3 for definition of FHWA Abrasion Levels.*
*[2] Under certain circumstances, AK Steel projects expected service life of 100 years.*
** In recommended site environmental conditions. Estimated service life guidance provided by National Corrugated Steel Pipe Association (NCSPA).*

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**MANUFACTURING AMERICA'S INFRASTRUCTURE™**

We manufacture engineered solutions for complex civil infrastructure challenges and create lasting value for project stakeholders through unrivaled expertise, support and workmanship.

To us, it's about being a trusted partner for project owners, engineers and customers while doing meaningful work that helps build our communities.

STORMWATER SOLUTIONS

PIPE SOLUTIONS

STRUCTURE SOLUTIONS

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