TIP SHEET

Thermal Plastic Concrete Protection Liner: QC Fabrication & Inspection

Presented by Wayne Turner of Turner Plastics Consulting on September 17, 2024, at Concrete Protection Academy, hosted by Titan Environmental. Titan offers technical talks on if you would like to learn more about Concrete Protection for wastewater infrastructure. Click here to book yours.

1. Primary Purpose:

The main goal of a thermal plastic Concrete Protection Liner (CPL) is to protect the concrete from chemical corrosion and extend the service life of the structure.

2. Types of Thermal Plastic:

Polyethene and Polypropylene. Polystyrene is NOT a common type of thermal plastic used in protective liners.

3. Inspection Focus:

When inspecting a thermal plastic Concrete Protection Liner, look primarily for:

- Damage, gouges, or cuts in the liner.
- Cracks or damage to the concrete from mishandling the lined precast sections.
- Smooth, tight liner throughout the interior surface of the lined concrete structure.

4. Factors Affecting Performance:

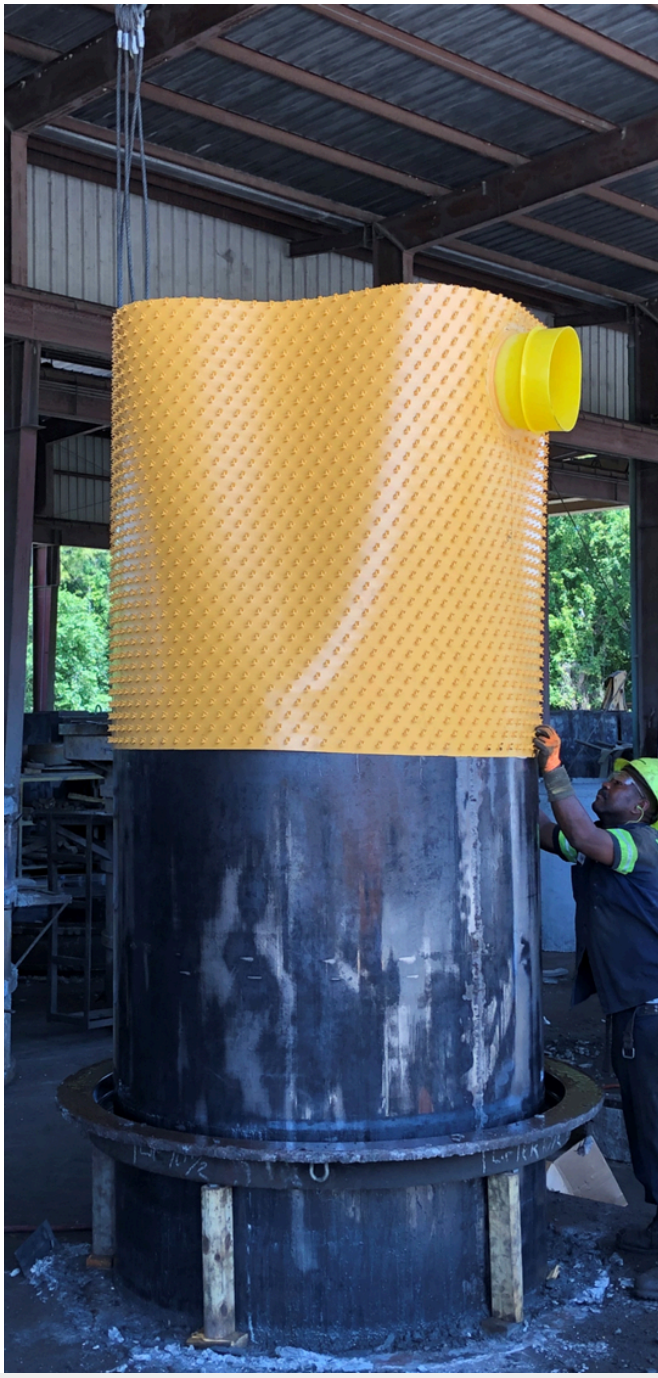
Several factors can affect the performance of a thermal plastic Concrete Protection Liner, including:

- Failure to weld the seams of the lined structure with the structure in service.
- Welding with dissimilar rod.
- Mechanical damage.

5. Proper Connection to Concrete:

To determine if a thermal plastic Concrete Protection Liner has a proper connection to the concrete surface, visually inspect for any signs of:

- Peeling or detachment.
- Honeycomb in the concrete pour.



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6. Recommended Thickness:

The recommended thickness range for a thermal plastic concrete protective liner is 3-5 millimeters.

7. Methods of Installation:

- Hot air welding
- Adhesive bonding
- Mechanical Fastening

8. Holiday/Spark Test Purpose:

Conduct a holiday/spark test on a thermal plastic Concrete Protection Liner to check for any voids or pinholes in the liner welds.

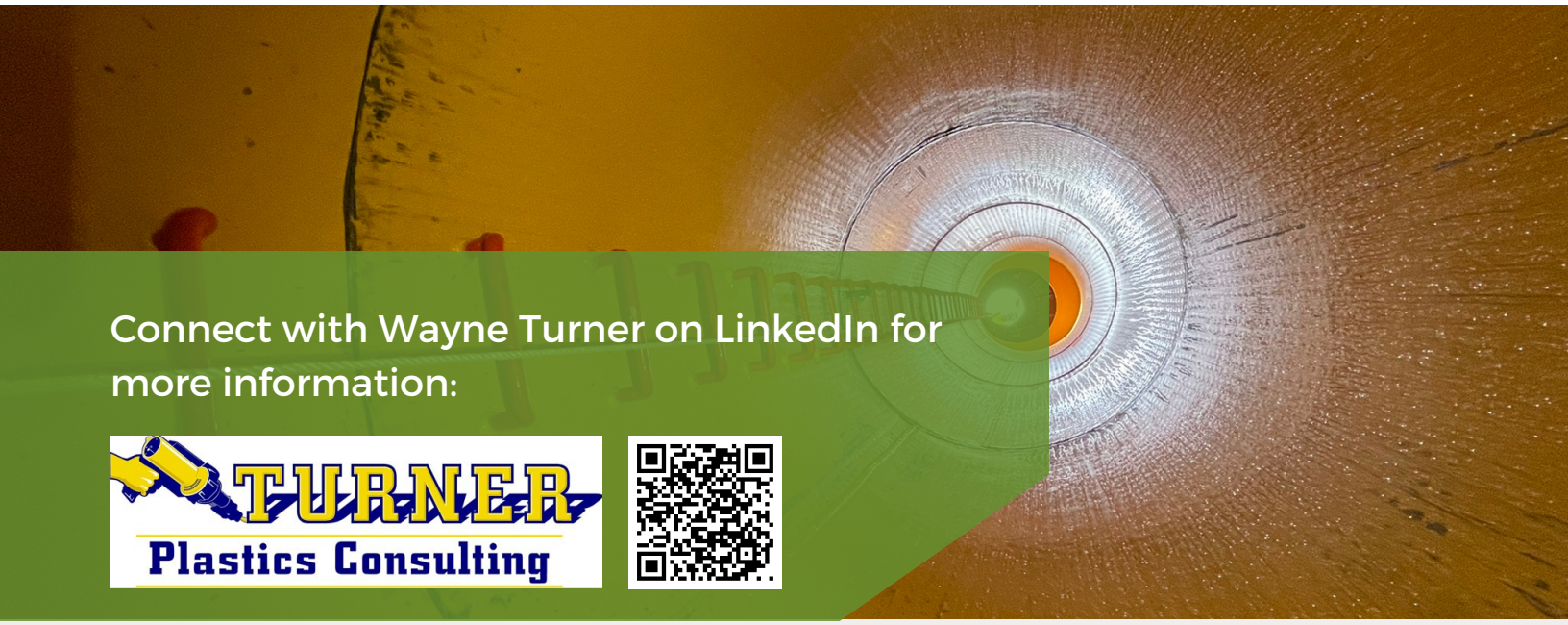
9. Limitations of Use:

Potential limitations of using thermal plastic Concrete Protection Liner include:

- Limited resistance to high temperatures (>200 degrees F).
- Susceptibility to long-term UV degradation.
- Difficulty welding underwater.

10. Inspection Frequency:

The recommended frequency for inspecting a thermal plastic Concrete Protection Liner depends on the specific project and environmental conditions.



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