GUIDELINES

SIGMA™

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LINING TECHNICAL BULLETIN & APPLICATION

General Specifications:

Material:
- Portland Type I-II Cement Mortar per ANSI/AWWA C104/A21.4, ASTM C150, mixed with clean portable water. Asphaltic coating and lining per ANSI/AWWA C104/A21.4, NSF-61 & 372.
- Type V cement P401, FBE, CP, available upon request. Refer to spec sheet for special coating and lining specification.

Standards:
- ANSI/AWWA C110/A21.10, ANSI/AWWA C111/A21.11. ANSI/AWWA C153/A21.53

Approvals:
- NSF-61 & 372

Temperatures:
- Cement without seal coat → 212°F max. Cement with seal coat → 150°F max

Size	AWWA Cement Lining Thickness Specification	SIGMA Double Cement Lining Thickness	Minimum Seal Coat Thickness
2”-12”	1/16”	1/8”	2 mil
14”-24”	3/32”	3/16”	2 mil
30”-64”	1/8”	1/4”	2 mil

Approved Repair:

Materials & Equipment:
- Approved mortar and asphaltic material, wire brush, water spray bottle, cement/sand sifter, measuring cup, bucket, cement trowel.

Cement-Mortar Lined Fittings:
- Remove any loose cement from the damaged area.
- Clean and remove any corrosion from the surface to be repaired.
- Pour cement through a wire type sifter basket and sift out any large items.
- Mix sifted cement with a sand and water per mortar manufacturers recommendations.
- Lightly wet the surface to be repaired and let set until it is just damp.
- Fill in damaged area, smooth out with a damp sponge.
- Let cement dry and cure per mortar manufacturers recommendations.
- Then coat with approved asphaltic coating.

- **Pressure washing of standard fittings is not recommended as per DIPRA (Ductile Iron Pipe Research Association). SIGMA will not be responsible for lining damage by pressuring washing. Follow DIPRA guidelines for pressure washing.**
- **If a mandrel test is required, please ensure that the fitting’s inside diameter is compatible. The equipment must not damage the fitting’s lining. SIGMA will not be responsible for any damage caused by interference between the equipment and the lining.**

DO’S

- Recommend P401 or equivelant lining for sewer application
- Handle cement-lined fittings with care to avoid internal damage to the cement lining.
- Ensure proper support during storage, shipping, and handling to avoid damage to the cement lining.
- Follow the applicable provisions within the ANSI/AWWA C104/21.4 standard for repairs to cement-lined fittings.
- Contact SIGMA for temperatures above 200°F

DON’TS

- Do not use standard type I-II cement mortar lined fittings for sewer application.
- Do not pressure wash (Contact SIGMA; follow DIPRA guidelines).
- Do not pick up the fitting with Forks (of a forklift) touching inside of the lined fitting
- Do not attempt repairs in areas that are not easily accessible.
- Do not use Mandrel without verifying compatibility with inside diameter.