

Underground Construction Technology | January 28-30, 2020 | Fort Worth, TX

Structural Concrete Liner Defects

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Types of Defects

1.Cracking Before Hardening 2.Cracking After Hardening **3.**Fractures and Delamination 4.Washouts 5.Thickness 6.Leaks 7.Finish

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Cracking from Plastic Shrinkage



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Plastic Shrinkage Crack Repair



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Cracking from Movement



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Cracking from Thermal Movement





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Movement Crack Repair







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Movement Crack Repair





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Hydration Cracks



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Hydration Crack Causes



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Hydration Crack Repair



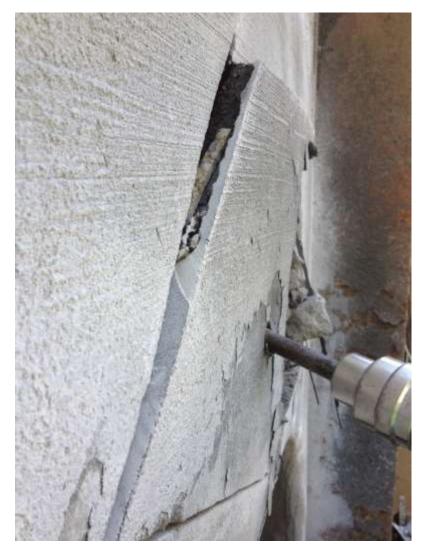
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Fractures & Delamination



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Remove Material



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Reapply New Material



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Liner Washouts



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Leaks



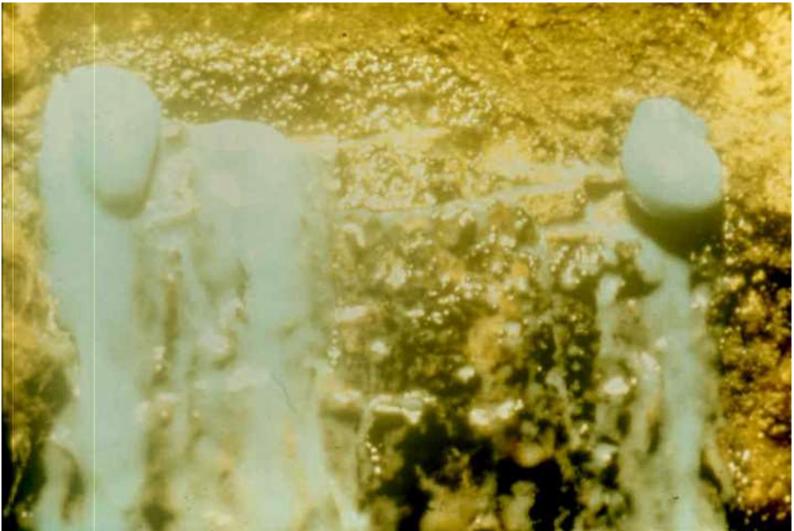
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Autogenous Healing



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Chemical Grout



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Inadequate Thickness



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Application Over Foreign Objects



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Finish Issues



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Remove Loose Material and Reapply





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Questions?

