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Pre-Post Surface Preparation and Coating Application on Concrete Manholes

Pre-Surface Preparation

1. Understand the Scope of Work
2. Review the Specification
3. Review the Manufacturers Data Sheet
4. Review the Plans
5. Pre-Inspection (Tail Gate Meeting)

Pre- Surface Preparation

Understand the Scope of Work

1. **Be certain that you understand the scope of work and the contract specification. The specification dictates the critical steps to performing the surface preparation and coating of the concrete manhole surface.**

Pre-Surface Preparation
Review the Specification

2.

First, Review the contract Specification! The Specification dictates how to complete the project and lists the linings to be used. Determine the existing lining Condition. Second, Pre-inspect jobsite to open discussion regarding the Specification. Between the owner and the contractor discuss possible adverse jobsite site conditions which may affect the project. Thirdly, determine if the existing lining provided effective service? When was it installed? What Tools and Equipment are necessary to complete the project? Photograph all the field inspection work!

Pre-Surface Preparation

3. Review the Manufacturers Data Sheet and together: Contractor and Agency

Determine the Project Specification and the Manufacturers Data Sheet requirements?

Determine the existing working conditions?

Determine which tools and equipment will be required?

Determine the necessary safety equipment to work with safely in the manhole? Are there any hazards?

Pre - Surface Preparation
Visual Inspection

3. Cont.

Determine the type of contamination present on the lining/concrete surface.

Are there any limiting Conditions? Can it be taken out of service? How Long?

Is abrasive blasting practical? How to prevent media from entering the pipe?

Are there work schedule restrictions that impact coating requirements (night work, humid conditions, high temps, etc.)?

Surface Preparation

- Review the Project Plans

4. The manhole lining system selected for the project includes: surface preparation procedures, materials, and substrate repair (concrete). Determine Surface Preparation necessary to ensure adhesion? Substrate steel – Is there Rust? Too what degree? Concrete Substrate: Repair, Crack Treatment, void filling, etc. Infiltration? What method to correct? Lining materials, sealants, application method, environmental controls, and special procedures.

Surface Preparation

Review the Project Plans

Engineer Project plans: I s there anything additional that is not included in the project contract specification or the manufacturer data sheets?

Surface Preparation

Pre-Inspection – Tail Gate Meeting

Generally, a contractor is required to provide third party inspection however, that does not relieve a contractor from making certain that the specification is adhered to.

The field inspection:

- **Environmental readings** - Measure ambient temperature, dew point, relative humidity, air and concrete surface temperatures, wind velocities, Coating Batch Numbers, Date etc.
- **Reports –** Determine how the specifications deals with regard to reports.

Surface Preparation

Pre-Inspection – Tail Gate Meetings

5. Pre-Inspection of precoated manhole structures: check for defects, (bubbles, voids, pinholes, drips, sags etc.)

- **Precleaning: Inspect for and remove the following**
  - **oil, grease, dirt, chlorides, sulfates, etc.**
- **Surface preparation: Determine the surface condition and what it will take to prepare the surface - (equipment, abrasives, cleanliness, profile, etc.)**
- **Lining Materials (storage, identification, mixing and thinning, etc.)**

Surface Preparation

Final Inspection – Coating Application and Holiday Testing

- **Coating Materials** (storage, identification, coating and ambient temperatures, mixing and recommended thinning, tip size, pump size etc.)
- **Application** (Wind velocity, Ambient temperature, equipment, thinning, WFT, DFT, recoat times, cure time etc.)
- **Final Inspection** (visual for defects, holiday detection, defect repair, holiday test etc.)
- **Documentation** (record keeping, reports, photographs etc.,)

New manhole Base - Rejected Surface Repair

New Manhole Base – Rejected Repair

New Manhole Base – Surface repairs

New Manhole Base – Surface Repairs

New Manhole Base – Surface Repairs

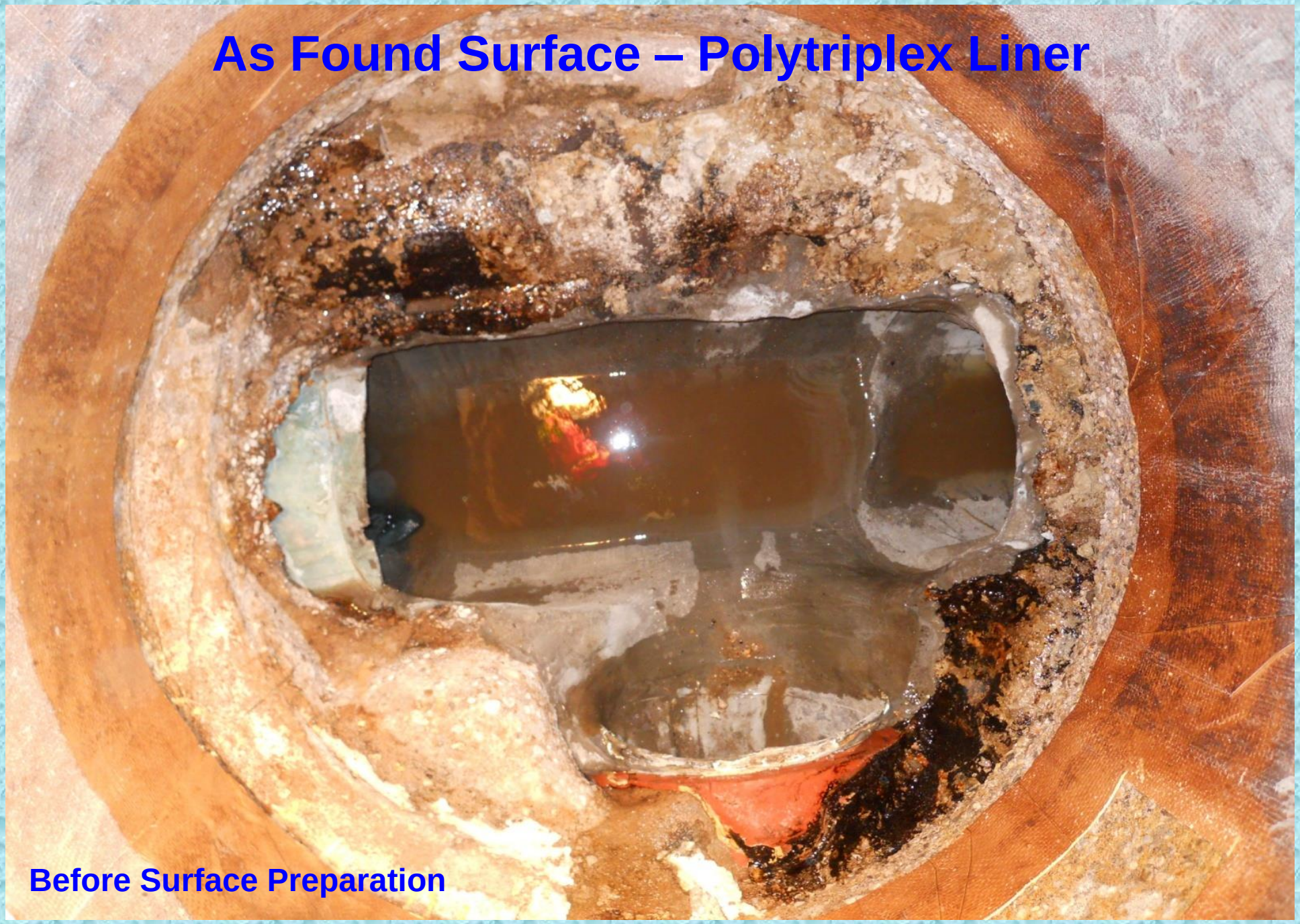
New Manhole Base – Media Blast

New Manhole Base – Media Blast

New Concrete Surface

Close Up View - Bug holes

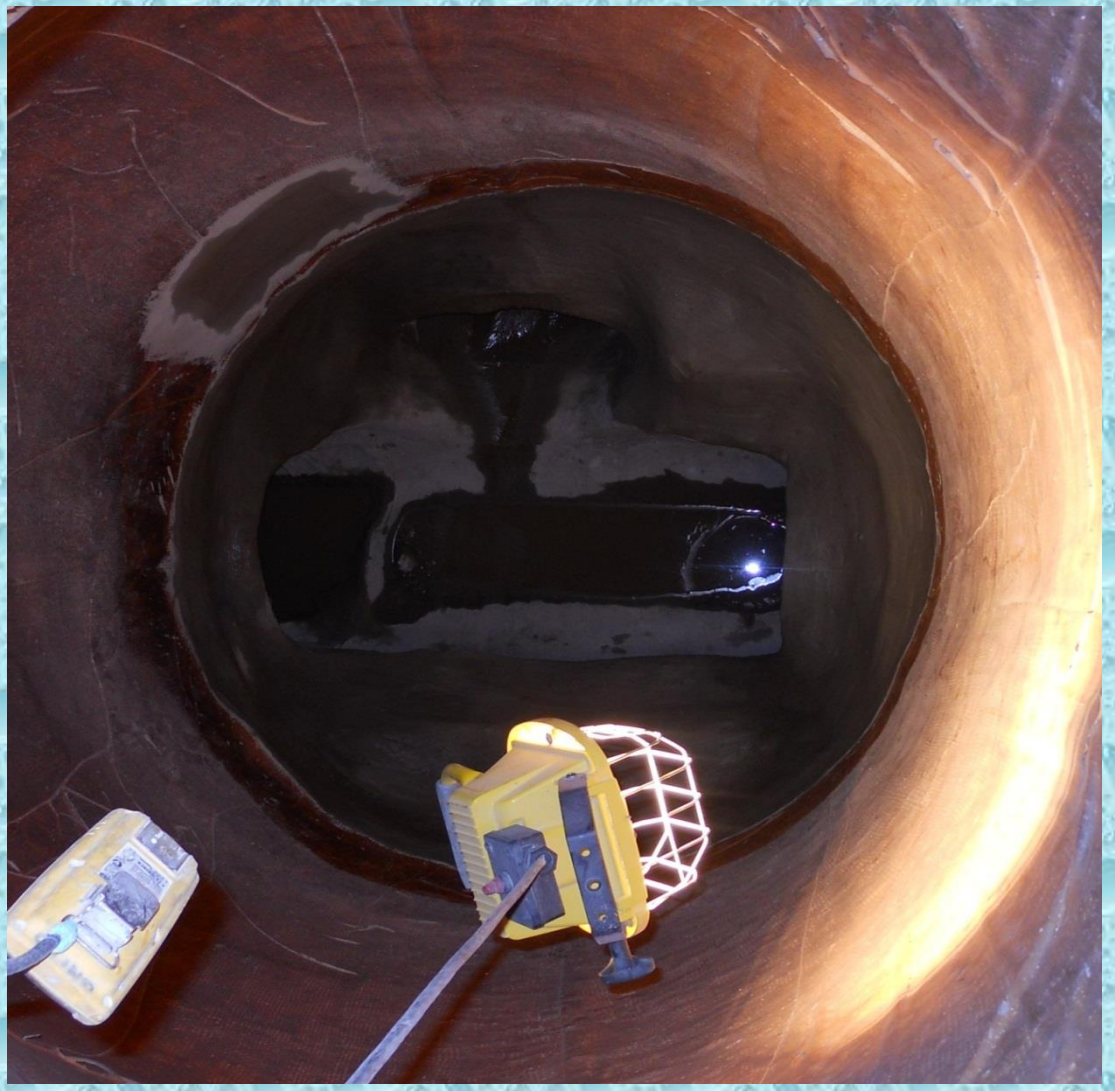
As Found Surface – Polytriplex Liner



Before Surface Preparation

Surface Preparation
Surface Repaired – Polytriplex Liner

After Surface Preparation



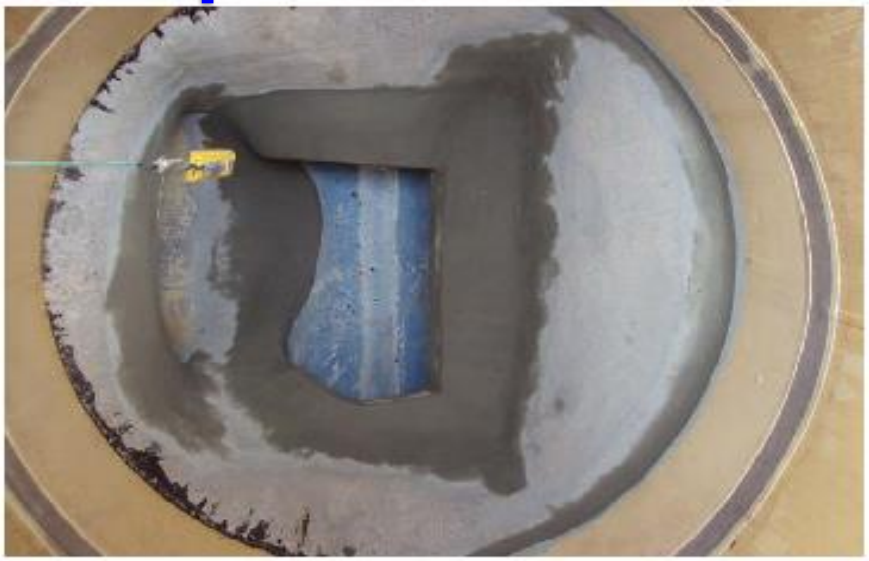
As Found Surface - Multiplex

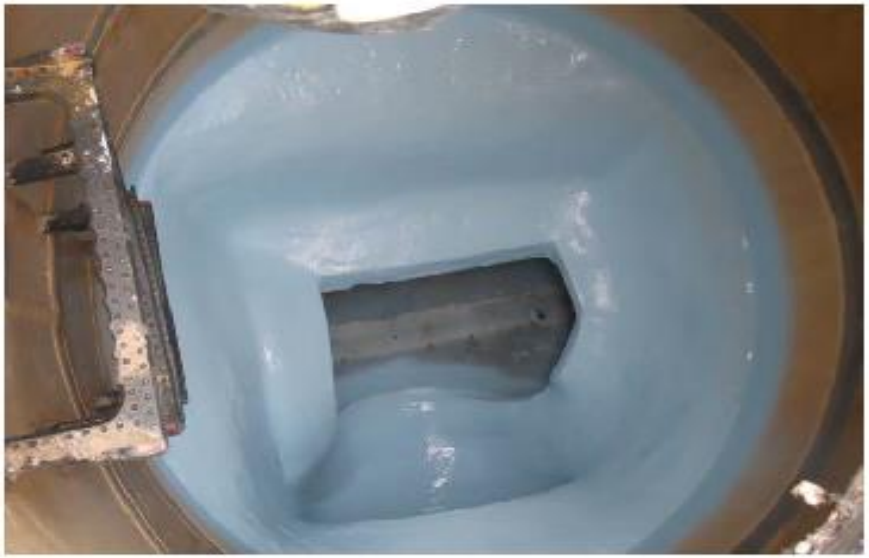
Surface Repaired - Multiplex

As found concrete Surface

Existing Surface

Existing Surface Repair-Coat





Inspection – Quality Control

Inspection – Quality Control

Inspection – Quality Control

New MH Base – Top Coat Applied

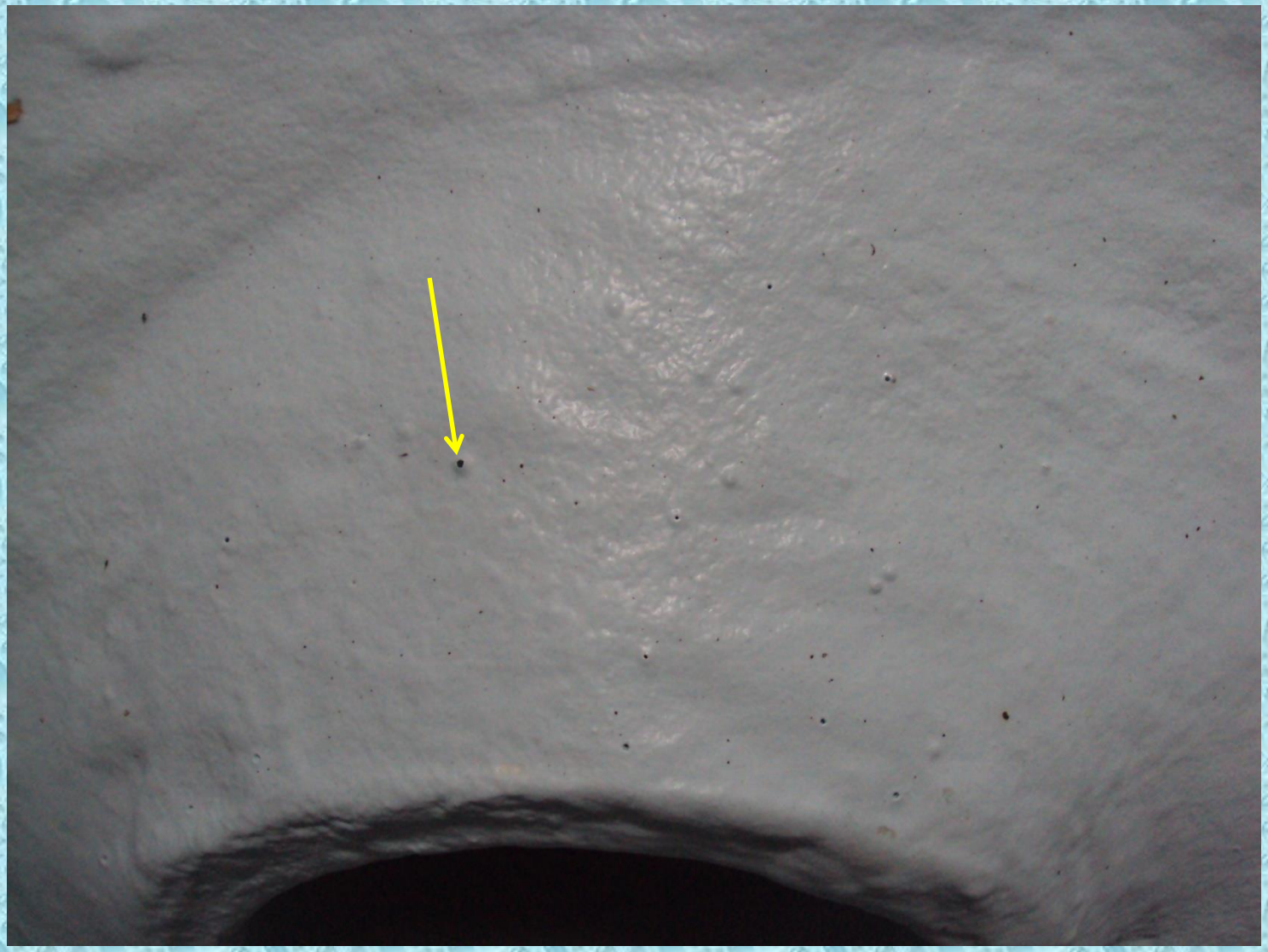
Inspection – Quality Control

AP/W
High Voltage Holiday Detector
by Tinker & Rasor

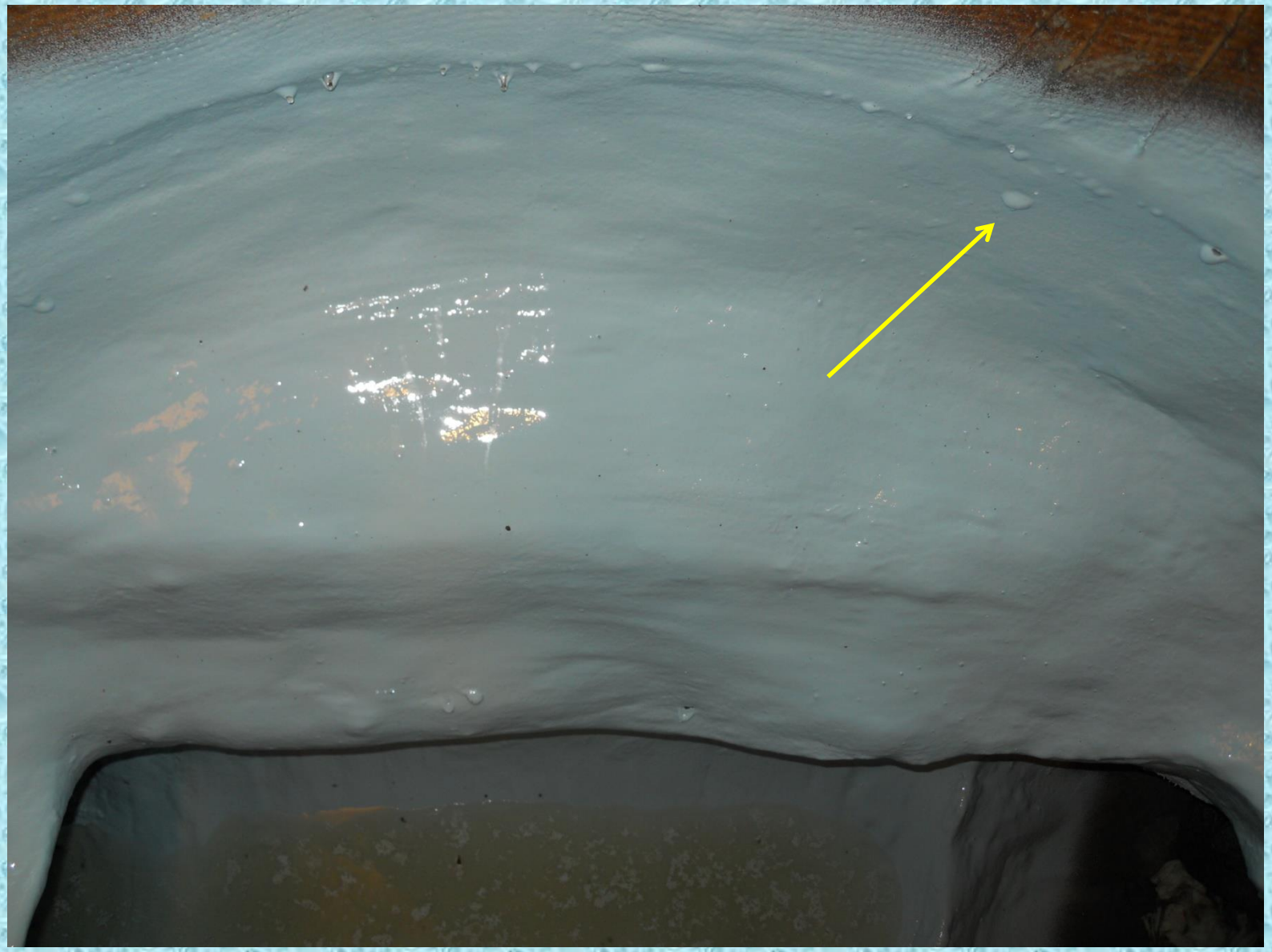
High Voltage Holiday Detector by Elcometer

Holidays (microscopic pinholes, voids located in Tlock Lining

Holidays (microscopic pinholes, voids) located in Epoxy Lining



Bubbles in Coating – Indicate Out Gas - Remove



Coating Inspection Instruments

Holiday Testing

Inspection – Quality Control

Holiday Testing

Inspection – Quality Control

Holiday Testing
Inspection – Quality Control

Question – Answer

Thank You