

Cleaning Unlined Crude Oil Tank Cars in Preparation for Lining

James Kirkpatrick - Sherwin-Williams

Earl Baker - Sherwin-Williams

Safety Assessment & Planning

Confined Space Access Permits

Safety Assessment & Planning

Confined Space Access
Permits

Trained Confined
Space Personnel

Safety Assessment & Planning

Confined Space Access Permits

Trained Confined Space Personnel

Proper PPE & Gas Testing Equipment

Prep the Car

Drain all liquids using the proper grounding and containment procedures

Prep the Car

Drain all liquids using the proper grounding and containment procedures

Measure your gas & oxygen readings inside the tank.

Prep the Car

Drain all liquids using the proper grounding and containment procedures

Measure your gas & oxygen readings inside the tank.

Use a chemical injector to apply hydrogen scavenger cleaner to remove crude residue

Prep the Car

Drain all liquids using the proper grounding and containment procedures

Measure your gas & oxygen readings inside the tank.

Use a chemical injector to apply hydrogen scavenger cleaner to remove crude residue

Measure salt contamination in cleaned tank by testing for chlorides

QA Practices

Chloride Contamination over $8 \mu\text{g}$
/ sq cm is recommended to be
treated

QA Practices



- Black Light for testing for hydrocarbon contamination

QA Practices

Pressure wash with an organic bonding chemical that will aid in the removal of chlorides, sulfates and surface reacted salts

Corrosion in Unlined Crude Cars

LIGHT CORROSION



Corrosion in Unlined Crude Cars

Check the corrosion for the depth of the pitting and the density of corrosion

Plan your coating selection and application based on the amount and type of corrosion

Corrosion in Unlined Crude Cars

MEDIUM CORROSION



Medium

Corrosion in Unlined Crude Cars

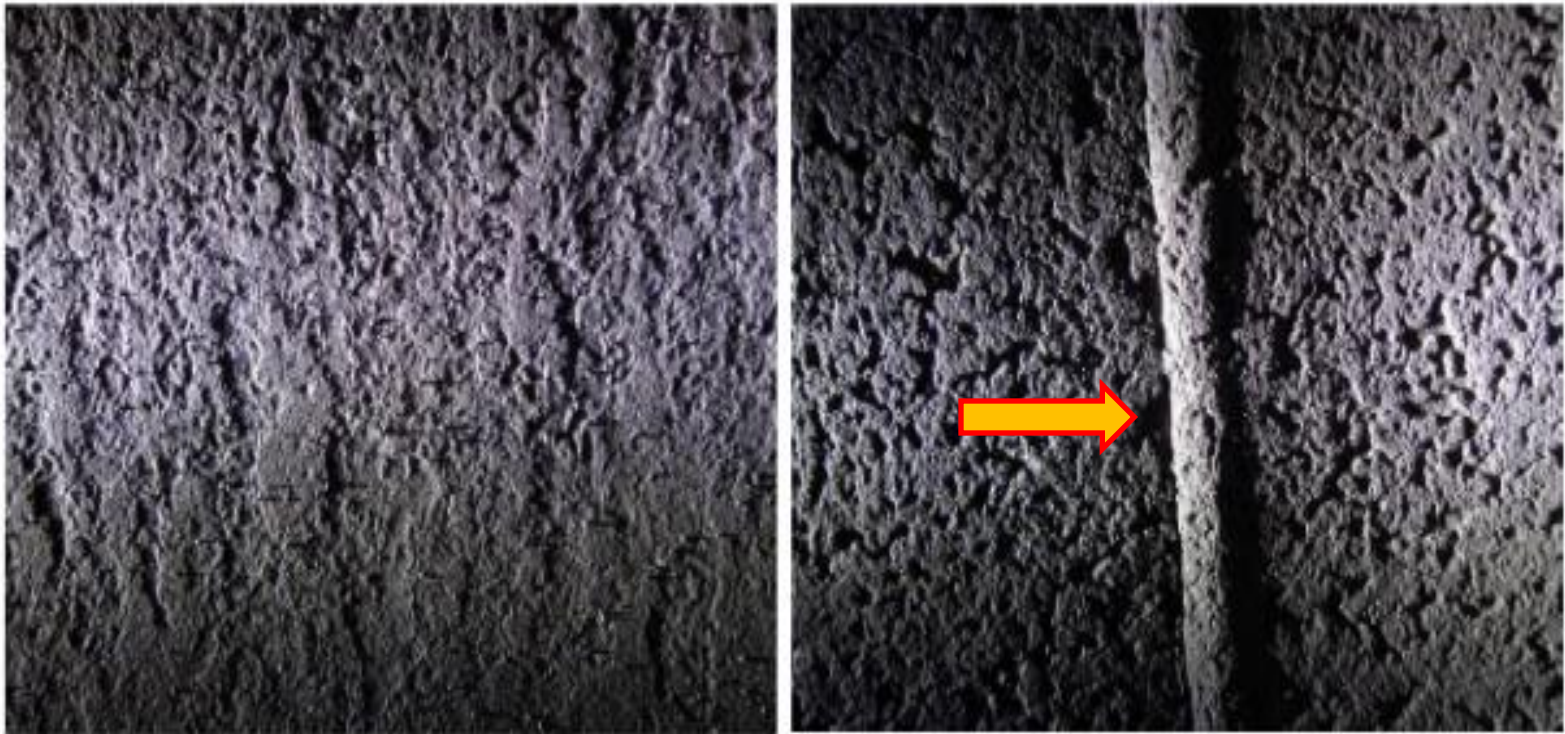
Proper ventilation and curing of high DFT lining system is essential

Followed by holiday inspection

Repair and touch-up procedures should be discussed before lining cars

Corrosion in Unlined Crude Cars

HEAVY CORROSION



Heavy

Questions

