

# Concrete Coatings and Liners

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# Generic Coating/Lining Types

- Cementitious/crystalline
- Rigid barrier coatings
- Flexible barrier coatings
- Mechanically anchored/  
unbonded liners
- Reinforced linings
- “Composite” liners

# Cementitious/Crystalline



- Cement-based with potassium and/or sodium silicate
- Advantages
  - Cost
  - Ease of application
- Limitations
  - Cleanability
  - Crack resistance

# Rigid Barrier Coatings



- Advantages
  - Provides continuous barrier
  - Resistant to environment
- Limitations
  - Substrate must be smooth
  - Resistance to cracking

# Flexible Barrier Coatings



- Butyl Rubber, polyurea, polyurethanes
- Advantages
  - Film forming barrier
  - Crack bridging
- Limitations
  - Physical strength
  - Chemical resistance

# Mechanically Anchored and Unbonded Liners



- T-Lock/bag liners
- Advantages
  - Crack bridging
  - Do not rely on adhesion to substrate
- Limitations
  - Single flaw compromises entire liner

# Reinforced Linings



- Liners reinforced with fiberglass, carbon or Kevlar fiber
- Advantages
  - Film strength
  - May bridge cracks
- Limitations
  - Costly
  - Time to install



# “Composite” Liner

- Use of a cementitious or flexible underlayment beneath a barrier or reinforced liner
- Advantages:
  - Compatability with moist/contaminated substrates
  - Fills surface voids

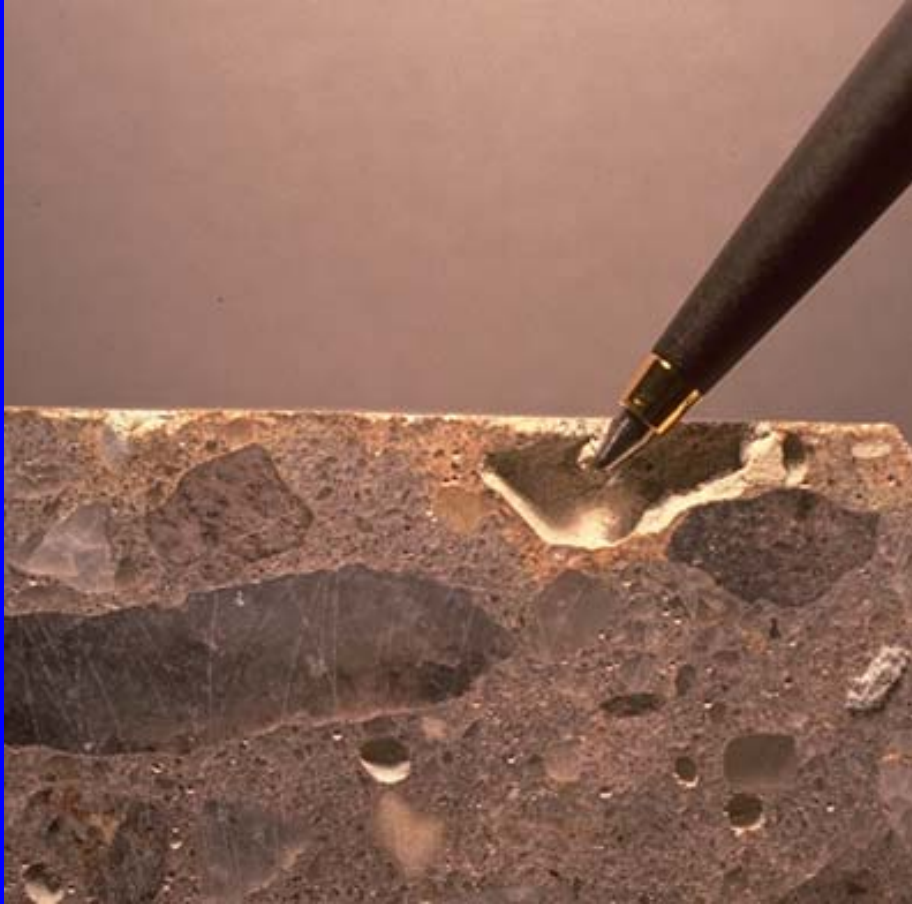


# Surface Preparation



- Depends on:
  - Condition of substrate
  - Presence or absence of existing coating or lining
  - Nature of product being applied

# Concrete Surface Roughness



- To provide a continuous film, surface must be smooth prior to installation or liner must be capable of bridging surface irregularities.

# Quality Control



- Substrate
  - Cleanliness/profile
  - Moisture content
  - Crack treatment
- Ambient application conditions
- Film thickness
- Film continuity
- Adhesion testing