Targeted Cathodic Protection Jackets for Marine Structures

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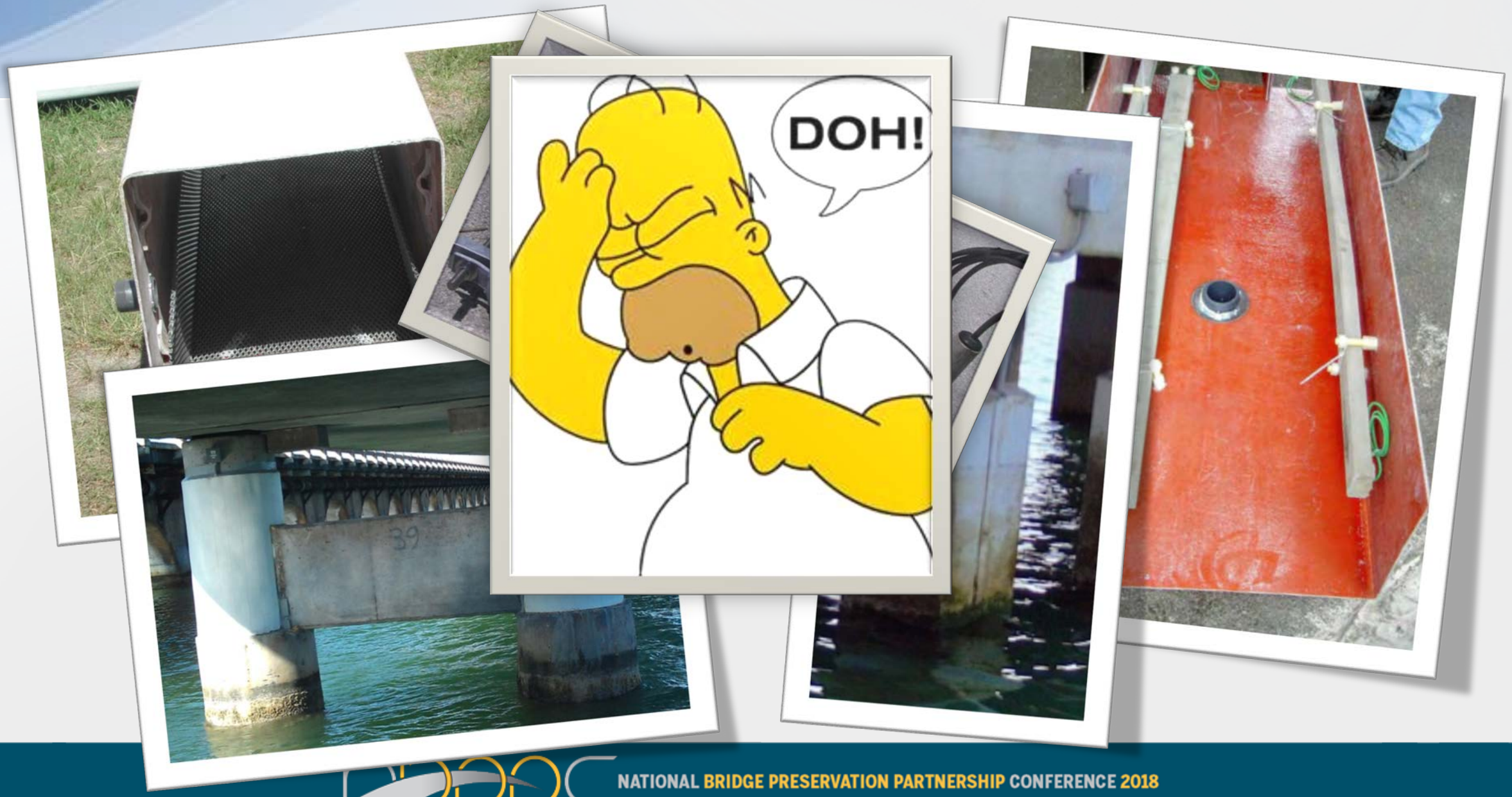
WHY CP MARINE PILE JACKETS?

TYPES OF GALVANIC PILE JACKETS?



WHAT TYPE OF JACKET TO SELECT?

Exposure conditions:

Saltwater

- Tidal
- Transitional / Splash
- Atmospheric / Dry

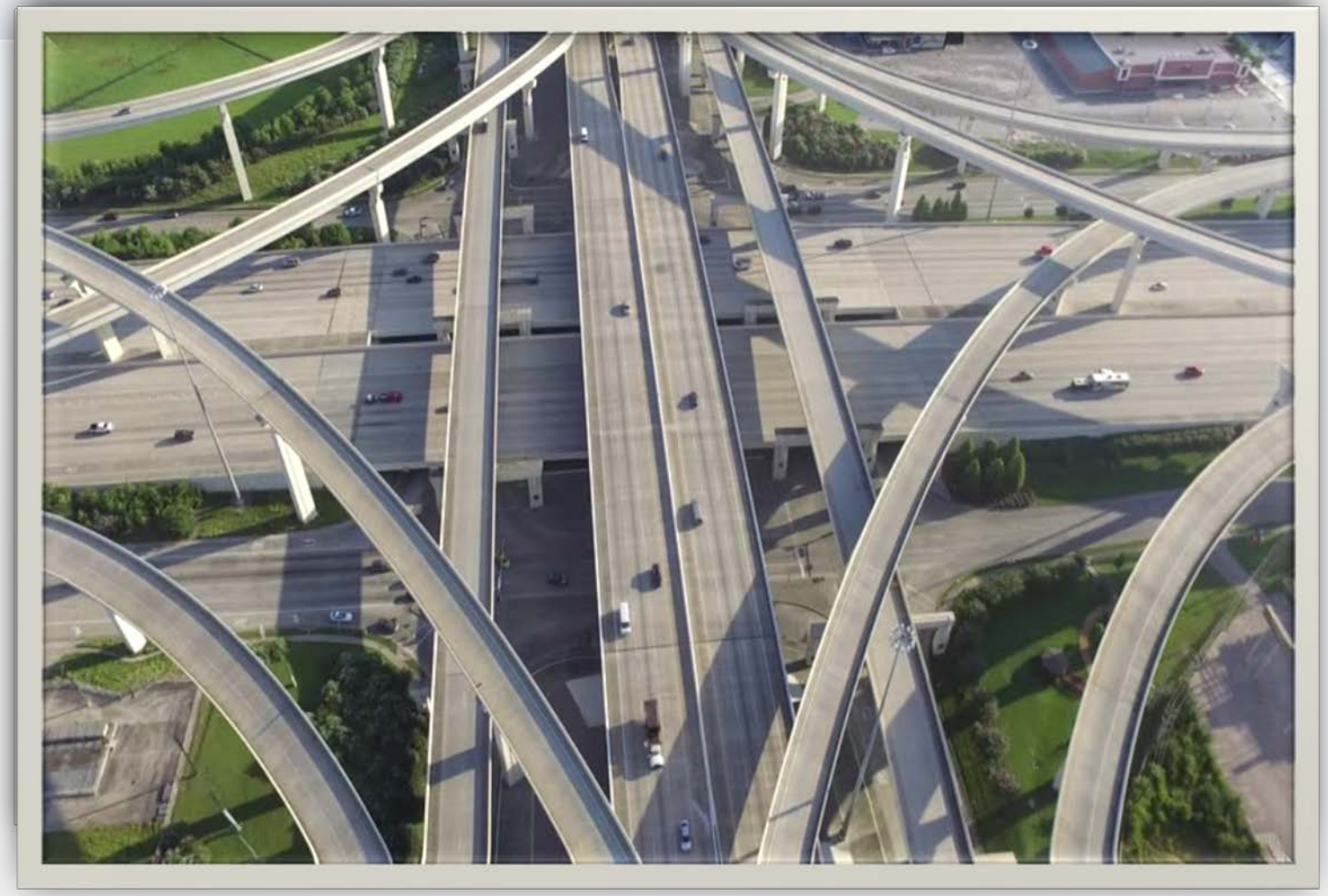
Brackish Water

- Tidal
- Transitional / Splash
- Atmospheric / Dry

Freshwater

Dryland

- Deicing Salts



Typical Pile Exposure

All conditions can be corrosive!

Atmospheric Chlorides / Dry

/ Periodic

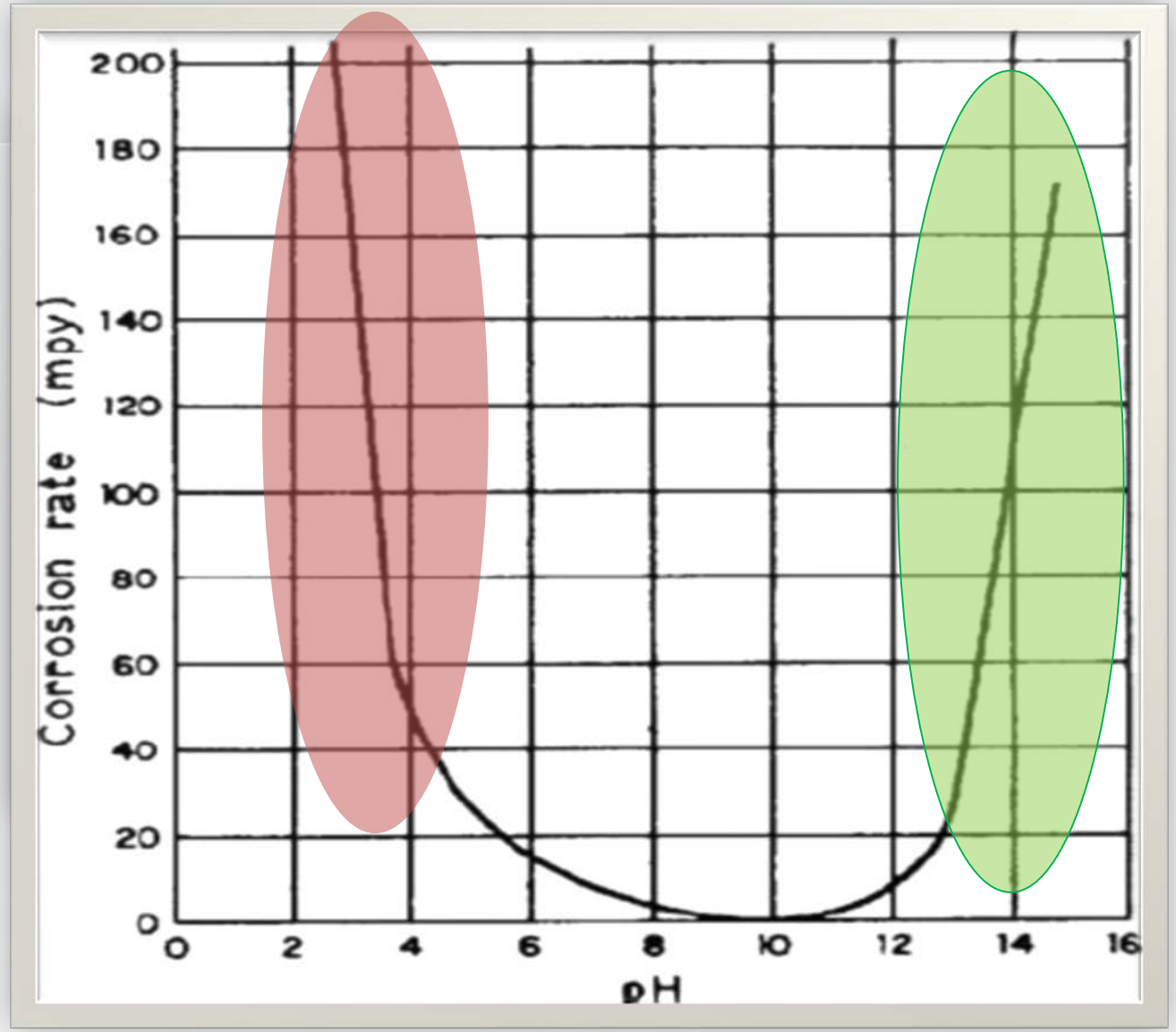
/ Regular

Underwater

Exposure Conditions - Zinc Activation

What does exposure conditions have to do with jacket effectiveness?

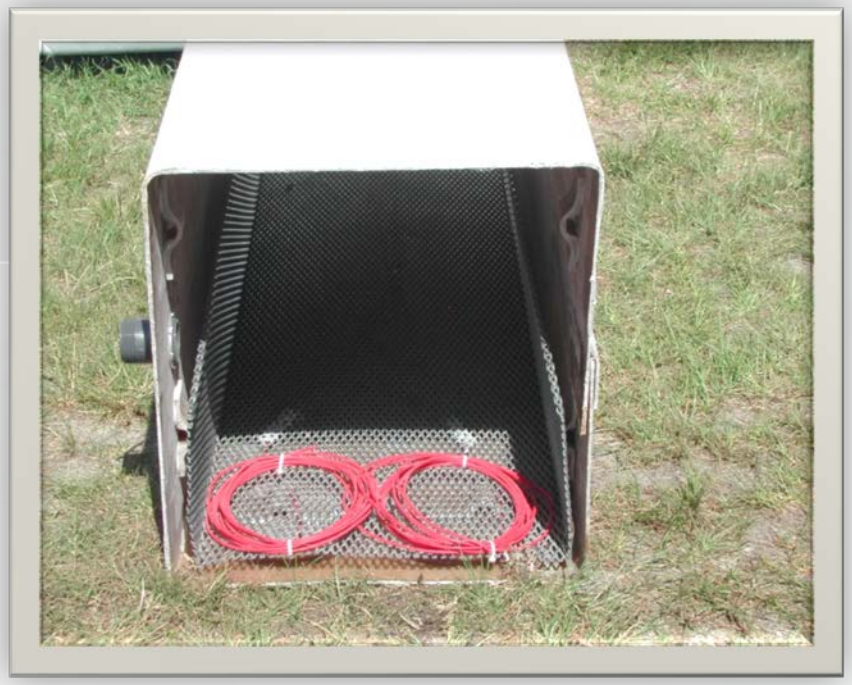
- Zinc is stable at pH 6 to 12.5
  - Activation increases zinc activity in concrete
- Saltwater activated
  - Chlorides are corrosive to zinc
    - Zinc Mesh Jackets
    - Zinc Wicking Jackets
- Alkali activated
  - High pH mortar (14+) is corrosive to zinc
    - Alkali Activated Anodes



Zinc Mesh Jacket

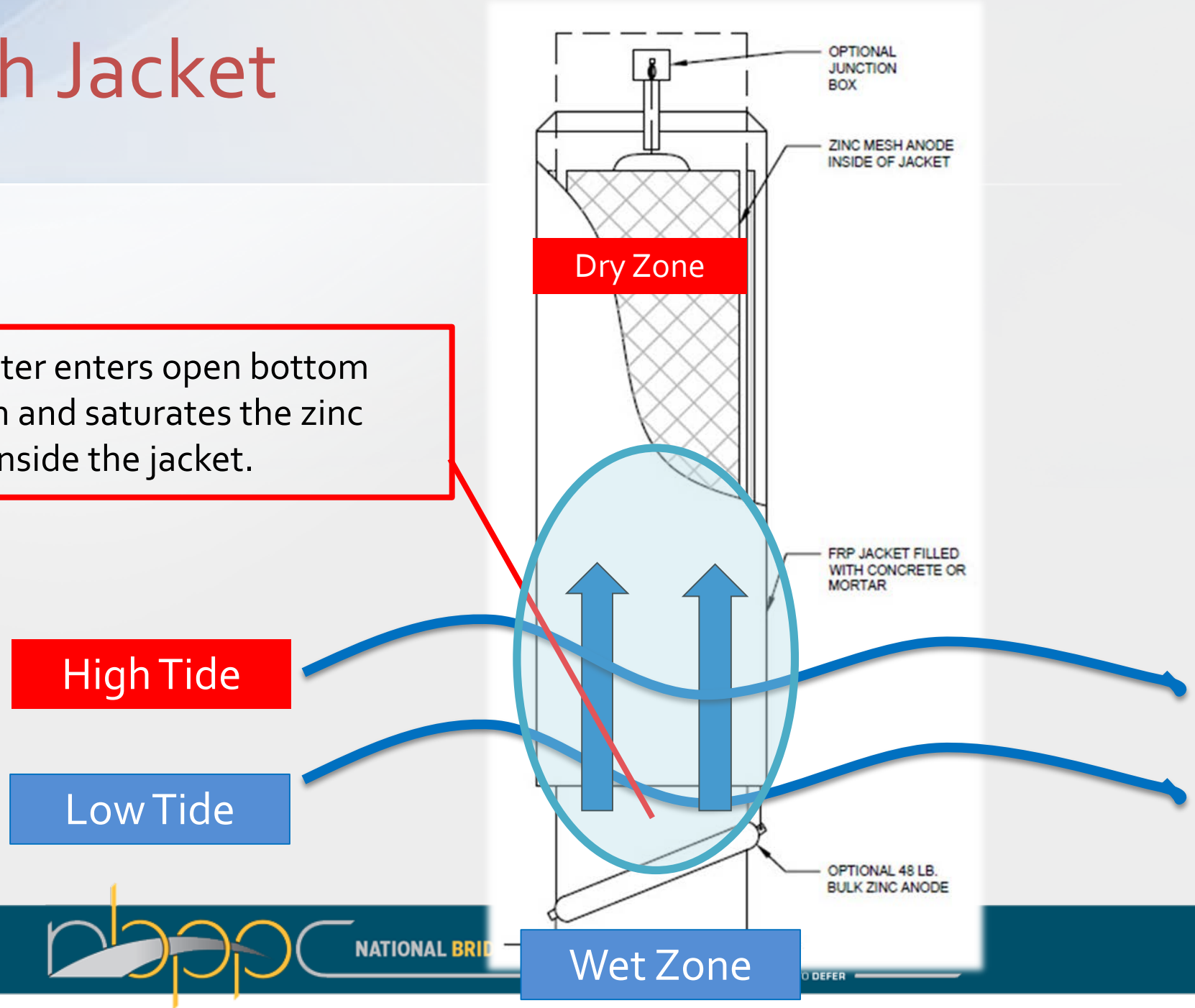
- Tidal zone protection
  - Zinc mesh anode
  - Open bottomed FRP Jacket
  - Allows saltwater inside

- Bulk Anode for underwater protection



Zinc Mesh Jacket

Saltwater enters open bottom of form and saturates the zinc mesh inside the jacket.



Zinc Mesh Jacket

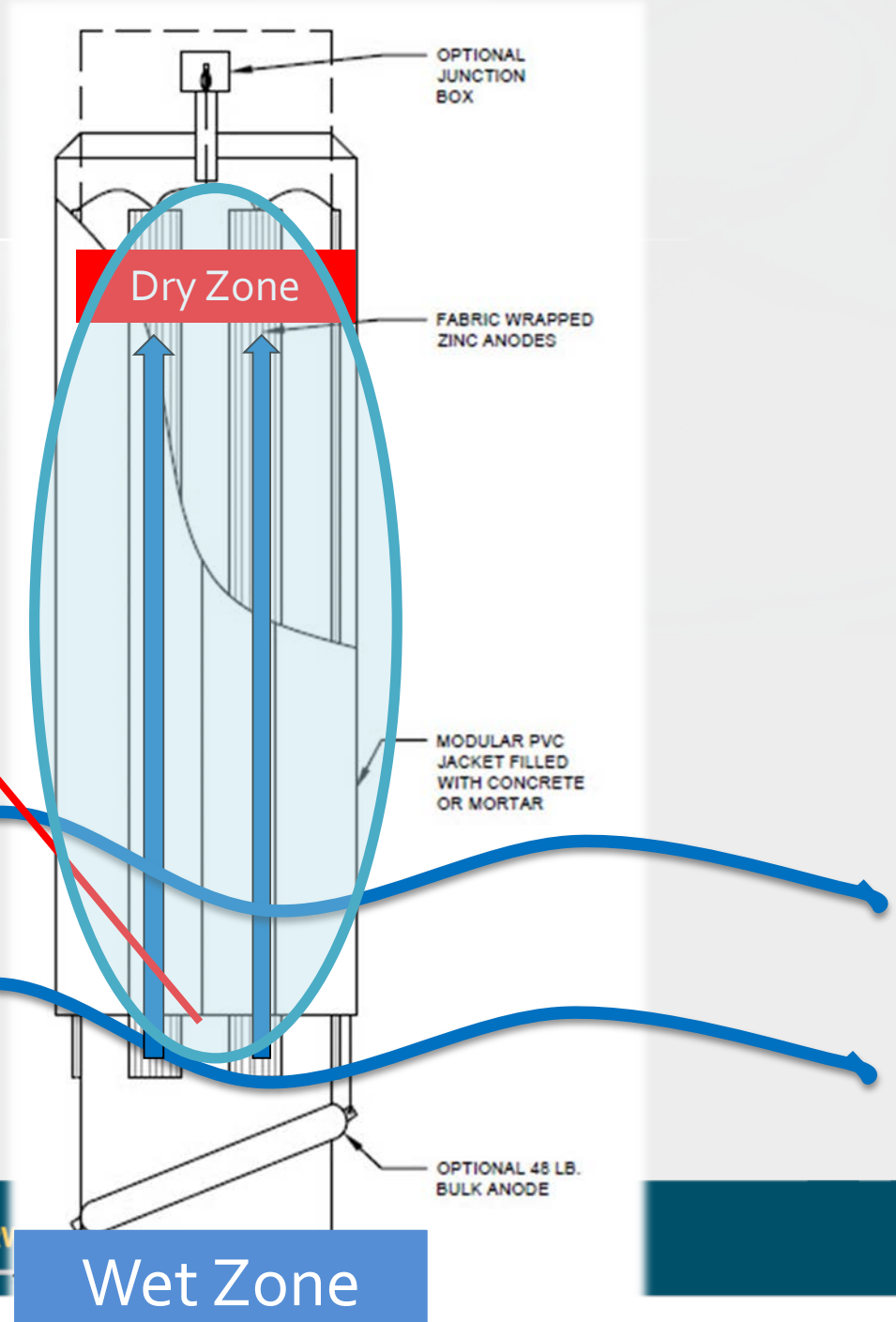
Zinc Fabric / Wicking Jacket

- Tidal / Splash zone protection
  - Zinc Anodes wrapped in wicking fabric
  - Open bottomed Jacket
  - Saltwater wicks upward
  - Modular Forms

- Optional Bulk Anode for underwater protection

Wicking Anode Jacket

Saltwater enters open bottom of form and saturates the wicking anode.



High Tide

Low Tide

Wicking Anode Jacket

Alkali Activated Anode Jacket

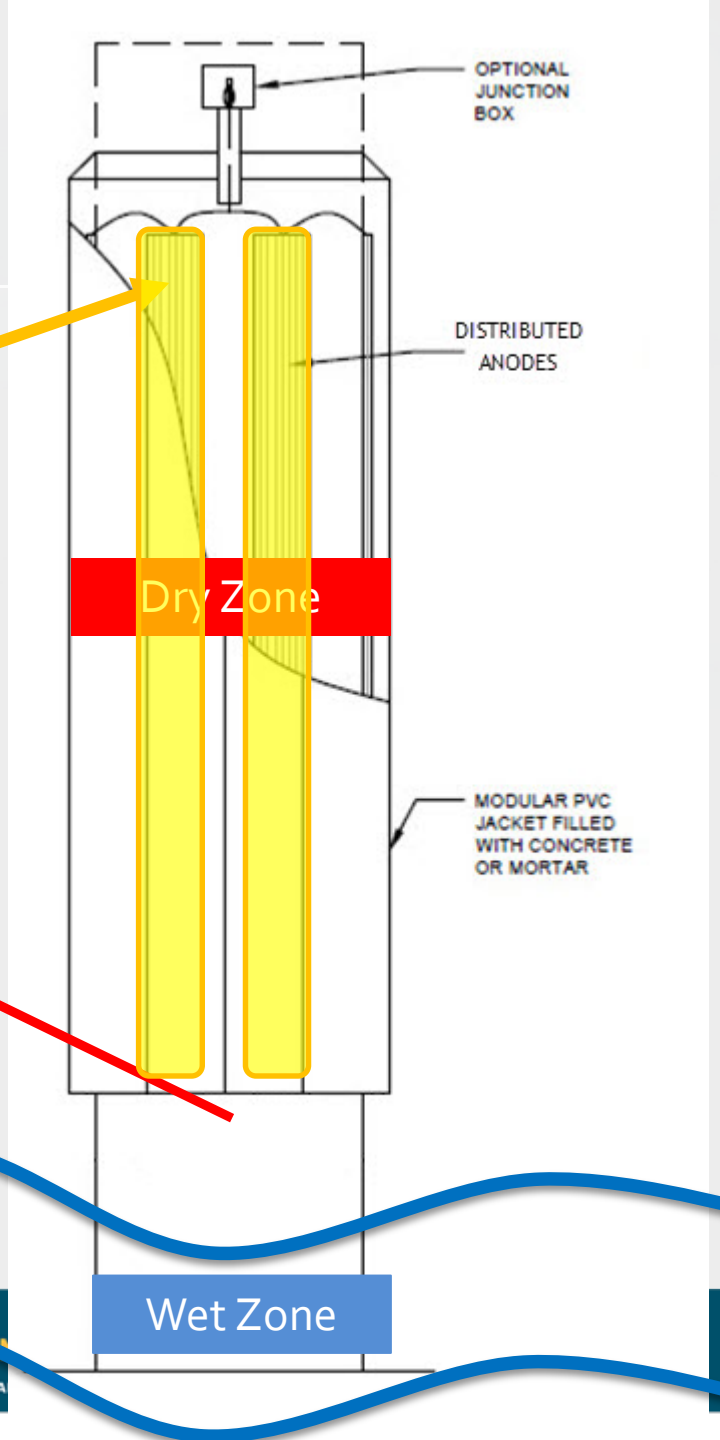
- Saltwater **NOT** required!
  - Alkali Activated Anodes used to protect piles and columns in:
    - Saltwater
    - Brackish water
    - Fresh water and
    - Dry land applications.

- Use appropriate bulk anode for underwater protection when required.

Alkali Activate Anode Jacket

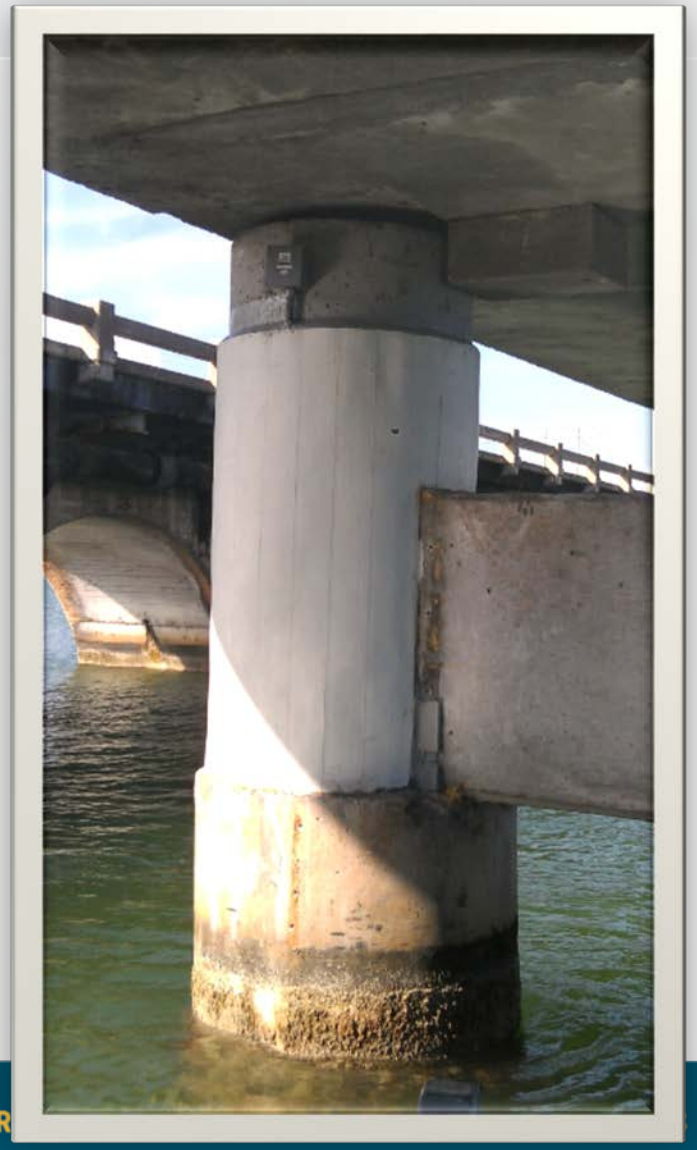
High Alkaline Mortar keeps Zinc Anodes Activated

NO Saltwater enters bottom.



Alkali Activate Anode Jacket

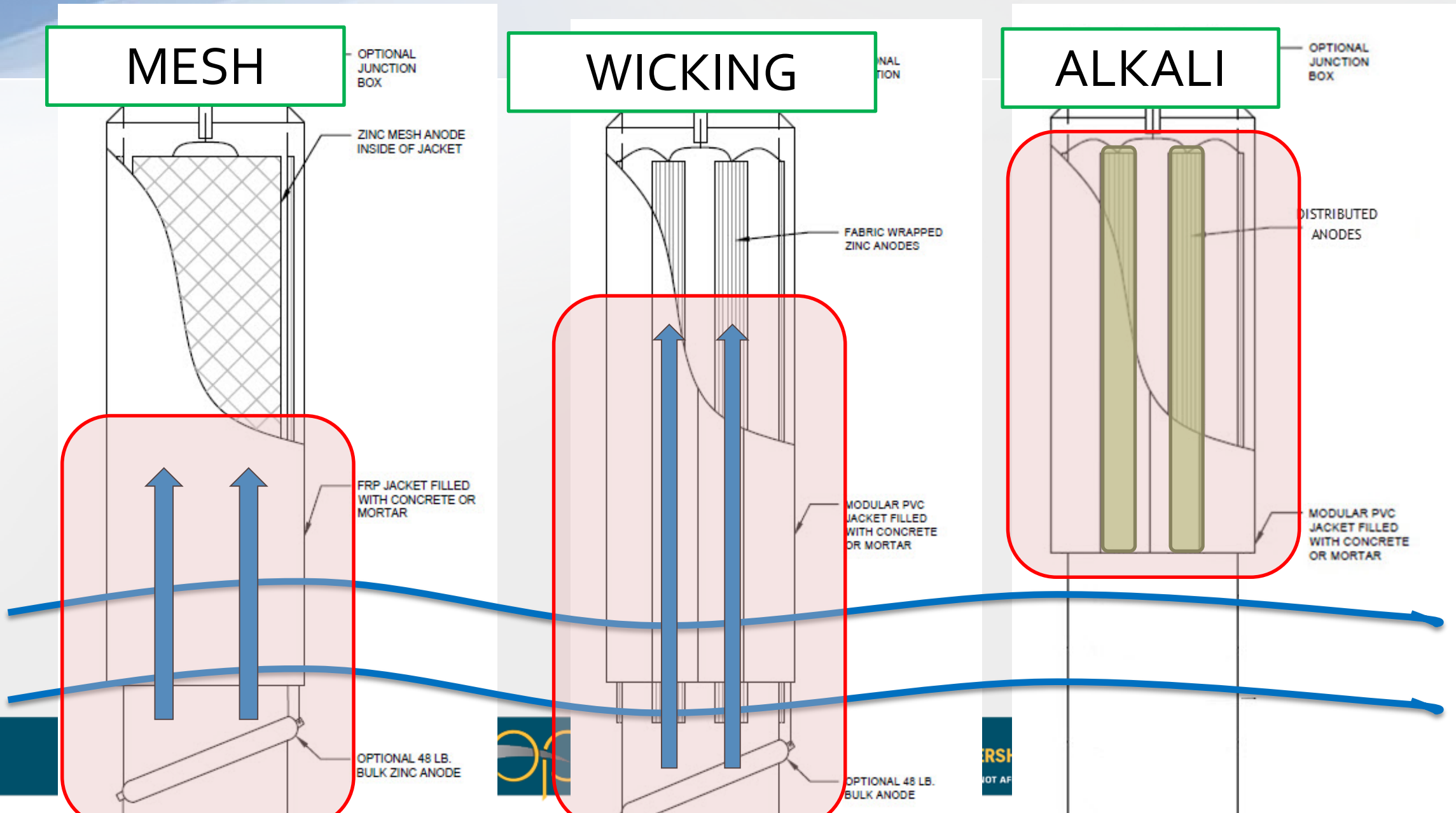
Florida Keys Column Encasement



Alkali Activate Anode Jacket

Florida DOT – Dry / Atmospheric Exposure Condition

Jacket Comparison – Performance Areas



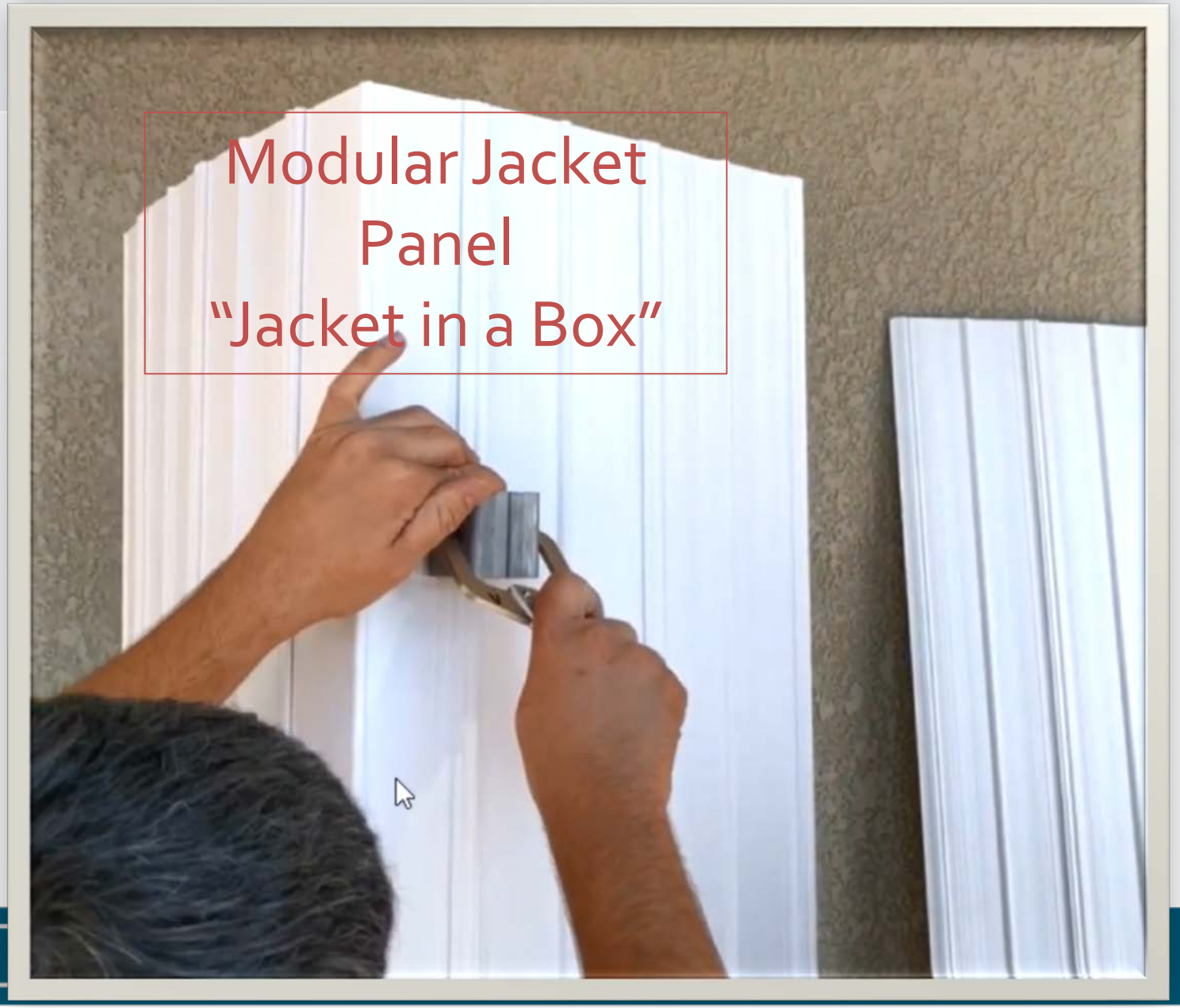
Stay-in-Place Forms - Options

Stay-in-Place Forms

2 Piece – FRP Clam Shell

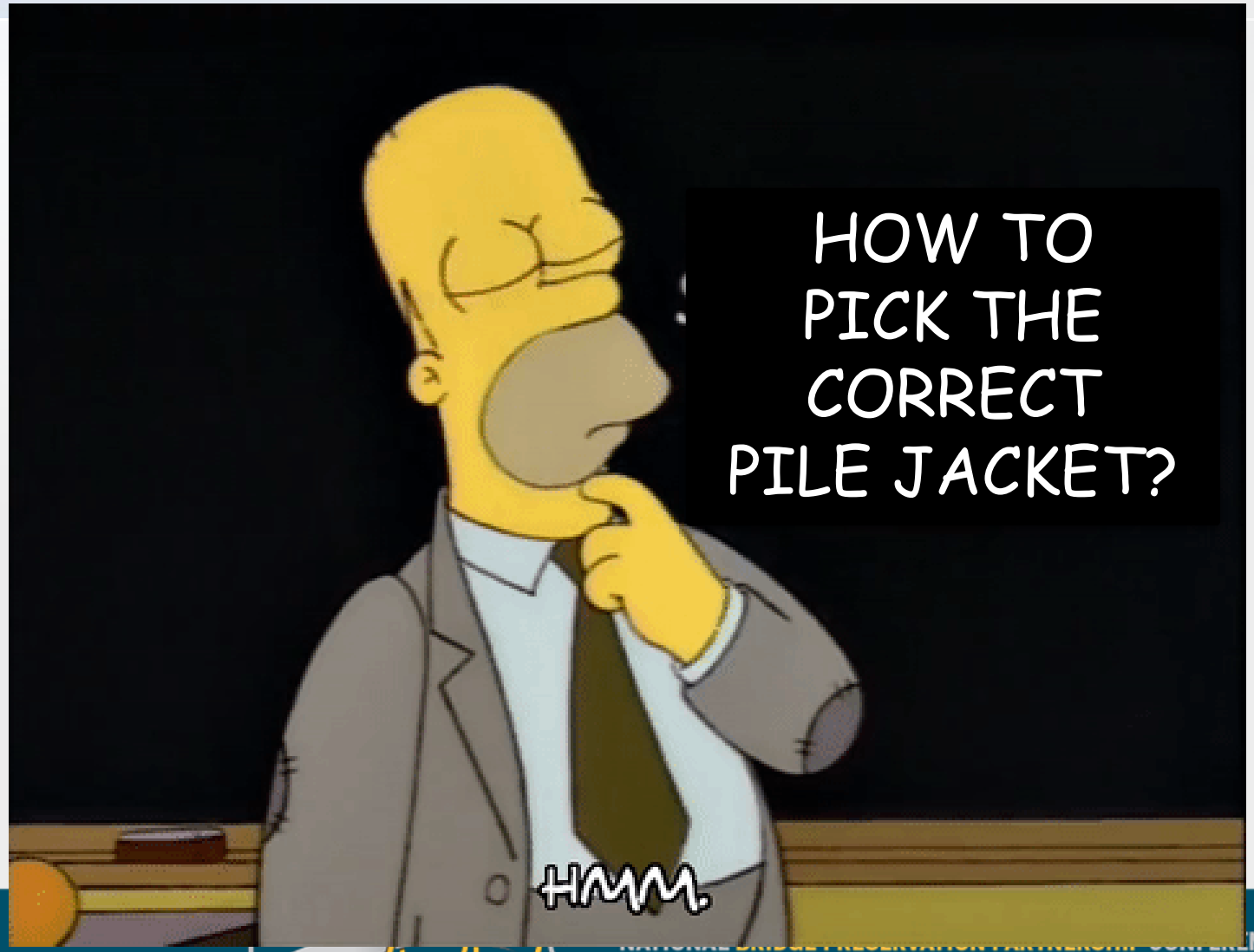
Preformed 1 or 2 Piece

Stay-in-Place Forms - Modular



Galvanic Jacket System Overview

Models and Recommended Use



Galvanic Jacket System Overview

Models and Recommended Use

Exposure		MESH JACKET	WICKING JACKET	ALKALI JACKET
Saltwater	Tidal	✓	✓	✓
	Transitional		✓	✓
	Atmospheric			✓
Brackish Water				✓
Fresh Water				✓
Dry Land				✓

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