EIT Tendons
What, How & Why

Coplay-Northampton Bridge
Showcase
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What is an Electrically Isolated Tendon (EIT)?

**Electrically Isolated Tendon (EIT)** - PT tendon in which the prestressing steel is electrically isolated from the surrounding concrete over the entire tendon length, including the anchorages.

Courtesy of VSL International
What is an Electrically Isolated Tendon (EIT)?

PL-3 = Electrically Isolated Tendons (PTI / ASBI M50 & fib Bulletin 33)
What are the unique components & details of EIT

- PTI / ASBI M50 defines PL-3 as PL-2 plus electrical isolation of tendon.

PL-3 (EIT) Anchorage

- Plastic trumpet
- Measuring cable
- Isolating Plate

- Plastic tying wire
- Plastic ½ shells
How is tendon isolation / encapsulation verified?

- EIT can assess the quality of the encapsulation of the tendon through measuring the resistance between the PT strands and reinforcing steel.
How is tendon isolation / encapsulation verified?

- In-span anchorage
- LCR Meter
- End-span anchorage
Why use Electrically Isolated Tendons?

- Allows verification of PT tendon encapsulation
- Provides enhanced durability - highest PT tendon level of protection (PL-3)
- Can provide non-destructive condition assessment over time (owner preference)
- Provides protection from stray current corrosion
Why use Electrically Isolated Tendons?

- Increases standard of care for PT tendon component storage, handling and installation.
Why is FHWA deploying EIT technology?

- Is a shelf ready technology
- Has a long and successful track record in Europe
- Requires only minimal changes to current state-of-practice (PL-2 → PL-3)
- Provides meaningful and easily interpretable data
- Provides measurable construction QC on PT encapsulation → strong incentive to improve workmanship
Next Steps to advance EIT technology

- PL-3 System qualification testing (under PTI / ASBI M50 review)
- Education and outreach (videos*, guidance documents)
- Demonstration projects (3 selected – PA, TX, & CA)

* Youtube channel – USDOTFHWA (Bridge Technology Series)
FHWA Viewpoint

- FHWA’s deployment and promotion of the EIT technology should NOT be interpreted as a loss of confidence in the current state of practice for PT construction. Properly installed and grouted tendons using the current state of practice (PL-2) will provide a robust and long-lasting PT system.
Thank you for your time!

QUESTIONS?

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