TS Conductor (AECC)
Installation Key Considerations

TS CONDUCTOR
Next Generation Advanced Conductor

- Follow established industry practices. Line crews should be familiar with standard procedures for ACSR and ACSS (IEEE 524).
- AECC has a pre-tensioned carbon core shielded in thick aluminum encapsulation. It is robust and mistake-tolerant compared to first-generation advanced conductors, but not mistake proof.
- The carbon core is strong in tension, but still **sensitive to compression from bending and sharp edge/angle bending especially when under inadequate or no tension (e.g., the soft side) .**
- AECC uses annealed aluminum (similar to ACSS, but not dead annealed). It is soft and yields; **avoid damage from improper grips, bending, and scratching.**

Managing Compression from Small Bending Radius

- **Avoid Sharp Edge/Angle Bending:** Excessive localized bending over a too-small radius can result in core damage, especially when the conductor is not under tension. If over-bent, a permanent crooked or kinked condition is observable and not self-corrected. Pay attention to contacts with sharp or narrow edges, single-point lifting, and the mouth of deadend or splice and grips (e.g., hanging under its own weight with sharp bend if unsupported), especially on the soft side where there is no conductor tension.
- **Maintain Adequate Tension:** Tension on the conductor helps offset the dangerous compression from bending, which is why AECC features a pre-tensioned core. Pay attention to the soft side and the braking system during stringing to ensure proper tension. Abrupt loss of tension could lead to strand disturbance and birdcaging and drooping of conductor between sheaves. Keep stringing tension at or below 50% of initial sag tension (typically 5 to 10% of RTS) and pull steadily at 2 to 5 mph.
- **Generous Bending Radius (Sheaves and Tensioners):** Use properly sized sheaves: at tangent structures (turn below 10°) at least 20x conductor OD, 25x for AECC <1.25” O.D., and never less than 65x core diameter; at the first and last structures and at turns of 10° to 45°, at least 25x OD (30x for <1.25” O.D.) and 80x core diameter; two tandem sheaves from 45° to 90°. Bullwheel groove bottom at least 39x OD minus 4” (102 mm). When in doubt, always choose the largest sheave available.

Effective Gripping of Strength Member

- **Use long-jaw sagging grips matched to the conductor O.D. (jaws at least 7.25” / 185 mm up to 0.80” O.D., 10.75” / 270 mm above):** Loose gripping can cause slippage of the strength member (i.e., the encapsulated core), localized compression, uneven load transfer, strand disturbance, or birdcaging. The conductor tail beyond the grip should always be supported along its length. Use tandem grips above 10,000 lbf or 30% of RTS.
- **Use pulling socks of sufficient length, with proper tightening/taping:** For pulls through 10 or more sheaves, consider a core restraining device, such as a nut crimped onto the AECC core with a simple washer (in front of the aluminum strands) for effective gripping of the strength member.

Tension Hardware Preparation

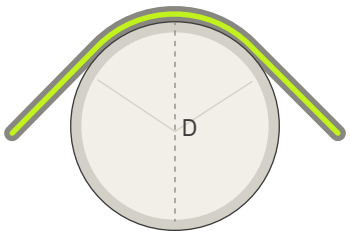
- Use only TS Conductor-approved hardware rated for 200°C (AFL, PLP and others) and ensure that crimping is executed correctly (correct die, proper press, full die closure in each crimp, and at least half a die width of OVERLAP between successive crimps). Never straighten a fitting after pressing.
- Avoid bending the composite core at the mouth of the steel tube or bending the conductor at the exit of the deadend or splice. Avoid excessive slack in the soft side to eliminate such sharp edge bending risk. Practice reverse crimping for extremely short spans (<150’ between tension hardware). Never pull splices through sheaves.

Final Note

Any visible damage to the aluminum encapsulation should be evaluated. AECC’s thick encapsulation layer preserves the core pretension and serves as a protective barrier for the core against environmental exposure and associated degradation (e.g., moisture ingress, UV & ozone exposure, thermal degradation at high temperature). While minor surface marks are not critical, any condition that compromises the integrity of the encapsulation should be addressed. Any breach that exposes the black core is core damage: cut out and splice.

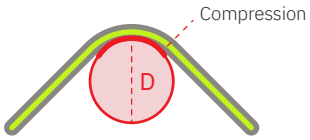
TS Conductor is designed to be without prudence risk. It is robust and mistake tolerant, and is practical to install using standard industry methods. TS Conductor is safe and easy to work with when standard good practices for ACSR and ACSS are followed, without the fragility associated with earlier advanced conductor designs.

Correct — large sheave



Large sheave
D ≥ 20x O.D. (25x below 1.25”), ≥ 65x core
Smooth bend — core protected

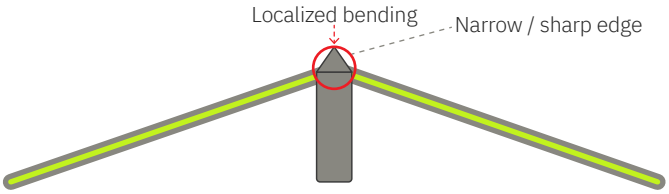
Avoid — undersized sheave



Undersized sheave
D < minimum required
Tight bend — core at risk

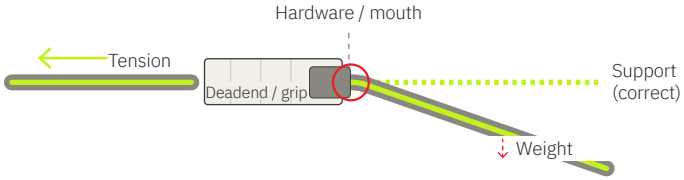
When in doubt, always choose the larger sheave

Avoid — Contact with Sharp or Narrow Edge



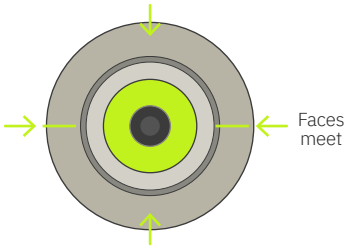
Avoid contact with any narrow structural edge, flange, or single-point support

Avoid — Unsupported Conductor Tail



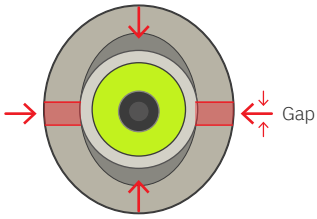
Always support the conductor tail beyond the grip along its full length

Full closure — correct



Die faces fully closed — complete radial compression

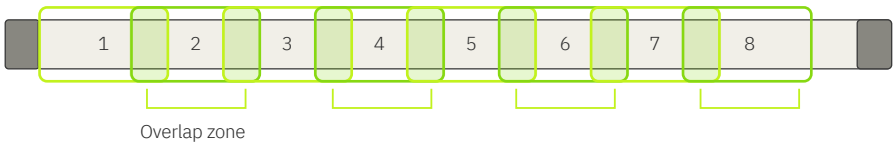
Incomplete closure — avoid



Die faces apart — sleeve under compressed

Encapsulated composite core · Compact trapezoidal AI · Compression sleeve · Die half

Bite overlap — successive crimp sequence



Each bite overlaps the previous by at least half a die width

No gaps between bites along the barrel

When in doubt on any aspect of TS Conductor AECC installation, stop and contact TS Conductor before proceeding. Our engineering team is always available to support.

Full Installation Manual: TS-WI-INS-GUI-0906-1 Rev. B · Reference: IEEE Std. 524 · Contact: tsconductor.com/contact