

# **AEIC GUIDE FOR REDUCED DIAMETER SHIELDED POWER CABLES**

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# Why Use Reduced Diameter Cables?

- All major US cities have an aging underground duct bank system providing power to the heart of their city. The oldest portions of those duct banks cannot accommodate the cable constructions used today.

# Design Variables

- Conductor
- Conductor Shield
- Insulation Material
- Insulation Shield
- Metallic Shield
- Jacket

# Operating Considerations

- Operating Temperature
- Fault Current Requirements
- Ampacity Requirements

# Field Considerations

- Duct Clearances
- Cable Diameter
- Existing Duct Considerations
- Duct Bank Configurations
- Terminations and Splices

# CNP's Reduced Diameter Cable

- CNP's reduced diameter cables is a 15kV, 500 KCMIL Compact Copper Conductor with an overall cable diameter of 1.39 inches. This cable is installed in a trefoil configuration in a duct that originally had an inside diameter of 3.5 inches.

# Conclusions

- Reduced diameter cables can provide a substantial costs savings when used as an alternative to complete duct replacement.

# Conclusions

- The user has to fully evaluate the engineering parameters associated with using a reduced diameter cable and should work closely with the cable manufacturer to produce a cable construction that can be used while minimizing the risks of using a non-standard cable construction.