

2017 PLS-CADD Advanced Training and User Group

Update on Cable Updates

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Introduction

- Cable Files Have Been Totally Revamped
- Availability of Cable Files Online
- Create Bundled Cable Files

Cable Functions

- In PLS-CADD Standard Edition
 - Sections / Cable and Concentrated Loads Files
 - Create New Cable File
 - Edit Existing Cable File
 - Create Bundled Cable File
 - Generate Cable Data Report
- In PLS-CADD Lite
 - Sections / Create New Cable File
 - Edit Existing Cable File
 - Create Bundled Cable File

Attributes

- Three Tabs
 - Physical
 - Electrical
 - Notes

Cable Data

Physical | Electrical | Notes

Information

Name: c:\users\public\documents\pls\pls_cadd\examples\cables\general_cable_drake_acsr.wir

Description: 795.0 kcmil 26/7 Drake/ACSR/GA2 - General Cable [Chart A7/C26/0.8601] Conductor Type 16

Manufacturer: General Cable Stock Number: TransPowr Drake

Cable Type: ACSR Size Label: 795.0 kcmil

Bimetallic Conductor Display Color: 

	Number	Diameter
Outer Strands	26	(in) 0.1749
Core Strands	7	(in) 0.136

The parameters below are used to model sag and tension for this cable.

Cable Model

Nonlinear cable model (separate polynomials for initial and creep behavior for inner and outer materials)

Linear elastic with permanent stretch due to creep proportional to creep weather case tension

Linear elastic with permanent stretch due to creep specified as a user input temperature increase

Cross section area (in²): 0.7263 Outside diameter (in): 1.107 Unit weight (lbs/ft): 1.093 Ultimate tension (lbs): 31500

Number of independent wires (1 unless messenger supporting other wires with a spacer): 1

Temperature at which strand data below obtained (deg F): 68 Conductor is a J-Power Systems GAP type conductor strung with core supporting all tension.

Outer Strands		Core Strands	
Final modulus of elasticity (psi/100)	69669	Final modulus of elasticity (psi/100)	38507
Thermal expansion coeff. (/100 deg)	0.00128	Thermal expansion coeff. (/100 deg)	0.00064
Polynomial coefficients (all strains in %, stresses in psi)		Polynomial coefficients (all strains in %, stresses in psi)	

Physical

- Information
 - Bimetallic Conductor Option
- Cable Model
 - See CIGRE Sag Tension Brochure B2
 - Properties
 - Stress-Strain Data
- Bimetallic Conductor Model
 - Refer to Peter Catchpole's Presentation from 2013 ATUG
 - [http://www.powline.com/usrgroup/madison13/handouts/Bimetallic Conductor Models - Why and What Value.pdf](http://www.powline.com/usrgroup/madison13/handouts/Bimetallic_Conductor_Models_-_Why_and_What_Value.pdf)

Electrical

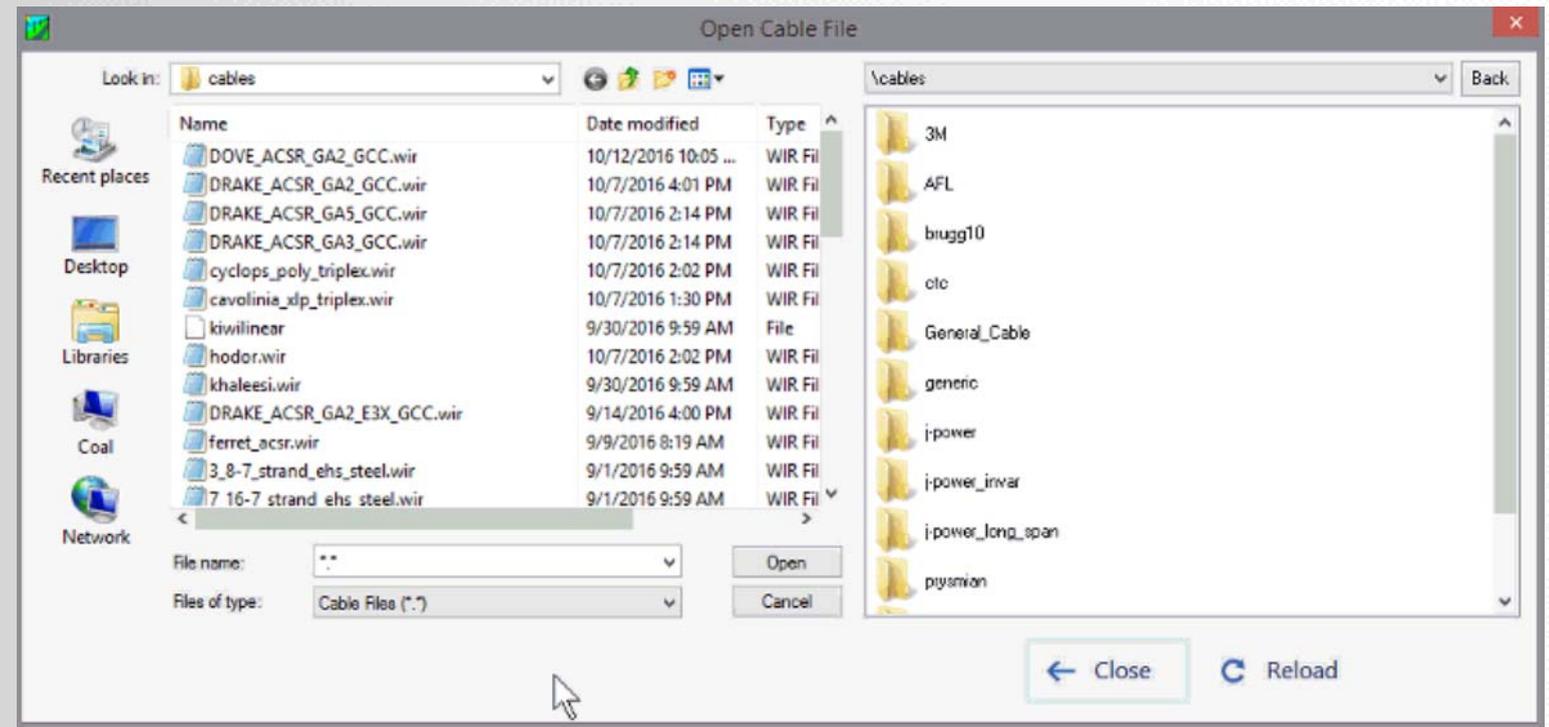
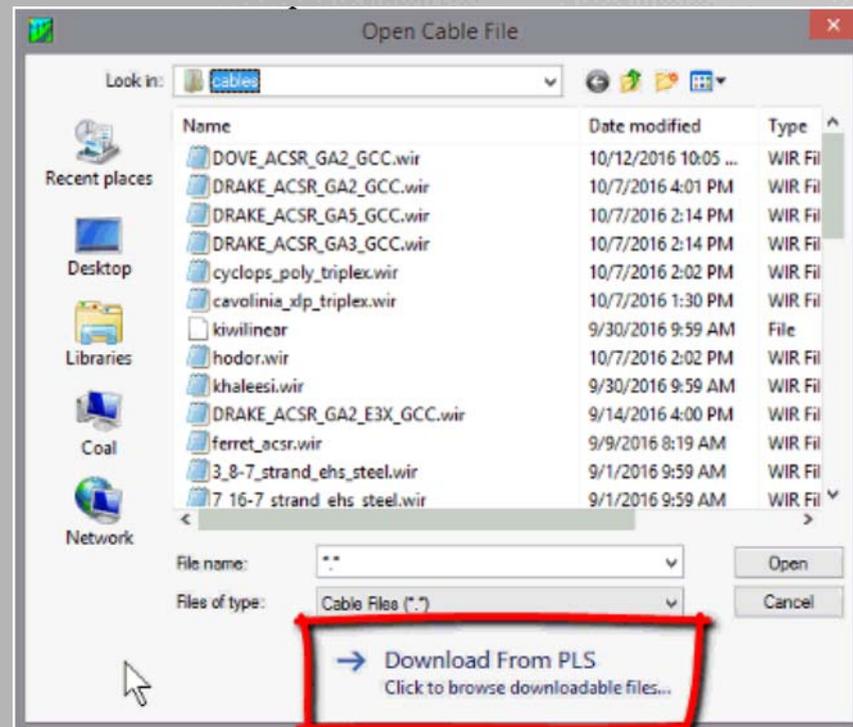
- Line Constants Properties
 - Only used for Electric Calculations
- Thermal Rating Properties
 - Only used for Thermal Calculations
 - Obtain from Conductor Manufacturer
- If Line Constants or Thermal Ratings Calculations Will NOT Be Performed on the Cable, These Can Be IGNORED!
- See IEEE Standard 738 or CIGRE Brochure 207 (legacy)
or CIGRE Brochure 601 (new)

Notes

- The Notes Tab allows you to enter free form descriptions and information about the cable
- You can also copy bitmap images and paste into the dialog which will be saved with the wire file
- Please note that the more images that are added will significantly increase the cable file size.

Cable Files Online

- 6,502 Cables Online!
- See <http://www.powline.com/files/cables.html>



Create Bundled Cable Files

- Twisted Pair (T2)
- Lashed Cable
- Spaced Bundle

Create Bundled Cable

Create a new cable file for a bundled cable based on an existing cable file for the subconductor of a twisted pair or the messenger for lashed or spaced bundles.

Select the type of bundle cable to build:

- Twisted Pair
- Twisted Pair
- Lashed Bundle
- Spaced Bundle



Select the subconductor: Cable File...

Subconductor Cable

Diameter	Unit Weight	Cross Section	Ultimate tension
(in) 0	(lbs/ft) 0	(in ²) 0	(lbs) 0

Modifiers

Diameter Factor

1.64 [Why 1.64?](#)

Bundled Cable - Total Values

Diameter	Unit Weight	Cross Section	Ultimate tension
(in) 0	(lbs/ft) 0	(in ²) 0	(lbs) 0

Description: Twisted pair bundled cable

Manufacturer:

Stock Number:

Cable Type: Unknown Size Label:

OK Cancel

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