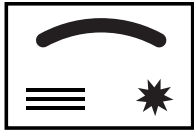




EDITION 3  
VOLUME 1

# 15 TOP FEATURES OF POWERGLIDE® MV AND 600V PRODUCTS



## PATENTED DESIGNS

Southwire's patented cable designs reduce the coefficient of friction (CoF) significantly and facilitate the installation of MV & 600V cables in conduit or raceway.

14 patents have been published related to this novel product and field innovation ([www.southwire.com/patents](http://www.southwire.com/patents)). A glide wire wrapped around the plexed 600V cables reduces the contact area drastically and simplifies pulling of the cable assemblies.

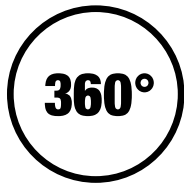


## EXTENDED PULL DISTANCE

Longer cable pulls or pushes with ease and shorter time are achieved. For a straight route, up to 50% improvement in increasing the total pulling distance can be obtained. One can push up to 160 feet or more by hand without

"bird caging" using 600V PowerGlide® plexed underground cables with Glide Wire™ technology.

Extending the underground system lengths may allow manholes to be spaced further apart, significantly reducing the total project cost and duration.

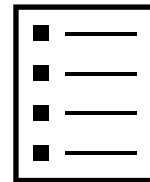


## PERMANENT FRICTION REDUCTION

A low-friction additive is imbedded evenly throughout the entire thickness of the MV jacket layer creating a 360° slick cable

circumference that will not wear off over time.

The friction reduction is achieved using a patented pre-dispersed formulation prior to the jacket extrusion process, which is more consistent and permanent compared to a field-applied lubricant. Low CoF for MV cables is present regardless of where the contact point is or how high the contact pressure is within a duct.



## EXCELLENT PHYSICAL PROPERTIES

PowerGlide® MV jacket material exhibits excellent physical properties including ultimate tensile strength (T) and tensile elongation at break (E).

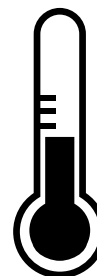
The low-friction jacket cut from finished cable samples were used for both production and qualification testing, and the measured T&E data far exceeded the minimum requirements per all applicable standards.



## DECREASED PULLING TENSION

For straight pulls, up to 20% reduction in measured pulling tensions might be achieved using a PowerGlide® jacket compared to a

standard LLDPE jacket with or without lube. The decreased pulling force facilitates challenging pulls where there are 90° bends.



## IDENTICAL THERMAL RATINGS

Typically rated 90°C for a continuous operation, 130°C during emergency overload, and 250°C for short circuit conditions, which are identical to MV and 600V cables made with a standard LLDPE MV jacket or 600V PowerGlide® without Glide Wire™ technology.

The incorporation of the friction-reduction additive in MV jacket or the Glide Wire™ technology for 600V cables does not compromise the thermal performance of the cable.



## LOWER PROJECT COSTS

Faster installation, longer pulls, and reduced labor help to decrease upfront project cost. Up to 27% time saved using PowerGlide® MV and 600V cables and it will be much easier to

remove from ducts for future upgrades, repair, or cable replacement efforts, contributing further to a much lower overall project cost.





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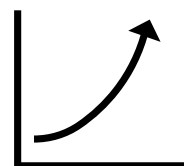
## NO LUBE & NO MESS

No need to apply cable pulling lubricant in the field. But when used with lube, it further reduces the frictional force and enables longer and faster pulls than standard cables with lube. Eliminate direct contact with, handling, and clean-up of an oily chemical.



## PROVEN END-USER HISTORY

Southwire's low-friction products have been deployed by users across the nation and utilized in many different constructions including power generation, data centers, stadiums, automotive plants, petrochemical industries, infrastructure upgrades, and grid hardening projects.



## PASSED ACCELERATED AGING

MV cable samples were oven-aged at a temperature higher than the continuous normal operation temperature of the conductor for an extended period of time to simulate long-term aging.

Physical properties including ultimate tensile strength and tensile elongation at break exceeded the percentage of retention upon accelerated aging.



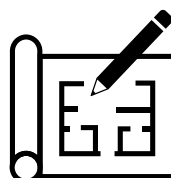
## UNPARALLELED ENGINEERING SUPPORT

Southwire's CableTechSupport™ services team, with a combined professional experience of 250 years, delivers Re3™ engineering consultation services through custom designs and advanced modeling of reinforced cables to support critical infrastructure projects where reliability and resilience are non-negotiable.



## CERTIFIED TESTING FACILITY

Certified qualifications were performed by Southwire's D. B. Cofer Technology Center, which was established in 1992. It is an ISO 17025 accredited facility and a UL & CSA certified laboratory, specializing in electrical, mechanical, thermal qualification, accelerated aging tests, and more.

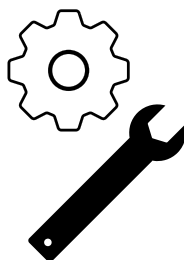


## VERSATILE DESIGNS & ONE-STOP SHOP

Southwire offers a complete line of wire & cable solutions to complement utility, industrial, and commercial projects.

Low-friction jacket designs for medium-voltage cables can be paired with either copper or aluminum conductors, TR-XLP (tree-retardant crosslinked polyethylene), leaded EPR, or no-lead EPR (EAM chemical family) insulation materials.

More than 5 shielding design options are available including round concentric neutrals, flat strap neutrals, helically-applied tape shields, and longitudinally-applied corrugated copper shield.



## IDENTICAL PROCESS & EQUIPMENT

PowerGlide® MV jacket does not change any standard process or pulling equipment and there is no impact when choosing the basket grip pulling method. Adding friction tape under the basket grip can help to secure the grip if there is any concern with the slippage.



## SUSTAINABLE SOLUTIONS & SAFETY

A slick material surface or an extra glide wire prevents installation damages by minimizing dragging or abrasion.

Both low-friction MV and 600V designs protect the physical barrier of the cable and extends the long-term system life and its performance. It is a proven sustainable solution implemented for many projects with over a decade of history.





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# A Re<sup>3</sup>™ PUBLICATION PEER-REVIEWED & APPROVED

BY SIX SUBJECT MATTER EXPERTS FROM SOUTHWIRE'S ENGINEERING COMMITTEE



## WRITTEN BY **DR. YUHSIN HAWIG**

**VP, ENGINEERING**

25 years of material science expertise with the focus on life expectancy of wire & cables, long-term electrical, thermal, mechanical, physical, and chemical properties vs. performance of metals and dielectric materials. Author of 20 technical journal publications since 2001, inventor of 6 US & international patents, and guest speaker for IEEE conferences & Southeastern Electric Exchange trade association. Writer of over 200 technical whitepapers on cable products. A diverse career path including National Institute of Standards & Technology (NIST). An active management board member for NEETRAC/Georgia Tech since 2015.



## **SY SHAHEEN, MBA**

**DIRECTOR, APPLICATIONS ENGINEERING**

35 years of expertise in underground power distribution, automotive, power generations, and industrial plant projects with the emphasis on root cause & forensic analysis and operation troubleshooting. 11 years of utility transmission, sub-transmission, distribution network designs & support, as well as a specialty in safety & systems engineering for nuclear power plants.



## **EDWIN MARQUEZ**

**ENGINEERING MANAGER**

15 years of designs, testing, global codes & standards compliance reviews and technical support for all products including low voltage, medium & high voltage cables. Unique cable designs for 20+ countries and in-depth knowledge of UL, ANCE, CFE, IEC, CIDE, UNE, BASEC and VDE standards. Advanced electrical modeling and complex ampacity calculations for underground cable systems. Keynote speaker for international seminars with over 500 participants.



## **CASEY SPRADLIN**

**CHIEF ENGINEER**

18 years of cable accessories & installation experience, custom transmission and distribution cable designs & modeling, presidential award on AEIC & ICEA committee leadership, inventor for one US patent, and instructor for "Ampacity 101" with over 400 participants and trainees. Guest speaker for IEEE conferences and Southeastern Electric Exchange trade association. Field experience on conduits and cable-in-conduit (CIC) installations.



## **MARK DULIK**

**CHIEF ENGINEER**

36 years of hands-on electrical industry experience including residential, commercial, and industrial applications. Over 20 years of field expertise installing, maintaining and troubleshooting medium voltage cables and switchgears in industrial spaces and substations. A medium voltage cable splicer and instructor certified through NJATC with a NCSCB certificate.



## **DAVE WATSON**

**PRINCIPAL ENGINEER**

25 years of experience in multiple industries including Military, Aerospace, Auto-Identification, and Wire & Cable. Represents Southwire in numerous codes & standards organizations including NEC Code Making Panels 6 & 8, multiple UL and CSA standards technical panels, and NEMA and CANENA technical committees. Training instructor on "Top NEC Code Changes in 2020" and various infrastructure application seminars with over 350 participants.



## **ERIKA AKINS**

**CHIEF ENGINEER**

10 years of knowledge on codes (NEC, CEC, NESC) and standards (UL, CSA, ICEA), manufacturing quality, and end user support for wire and cable products across all markets. Training instructor on "Fundamentals of Electrical Testing" and "Renewable & Utility Applications" with over 300 participants. Winner of 2020 Wire Link Traveling Scholarship award.

