



3233 W Hunting Park Avenue, Philadelphia PA 19132-1845  
(800) 79-ROYAL (215) 221-1200 fax (215) 221-1201  
advisors@royalelectric.com www.royalelectric.com

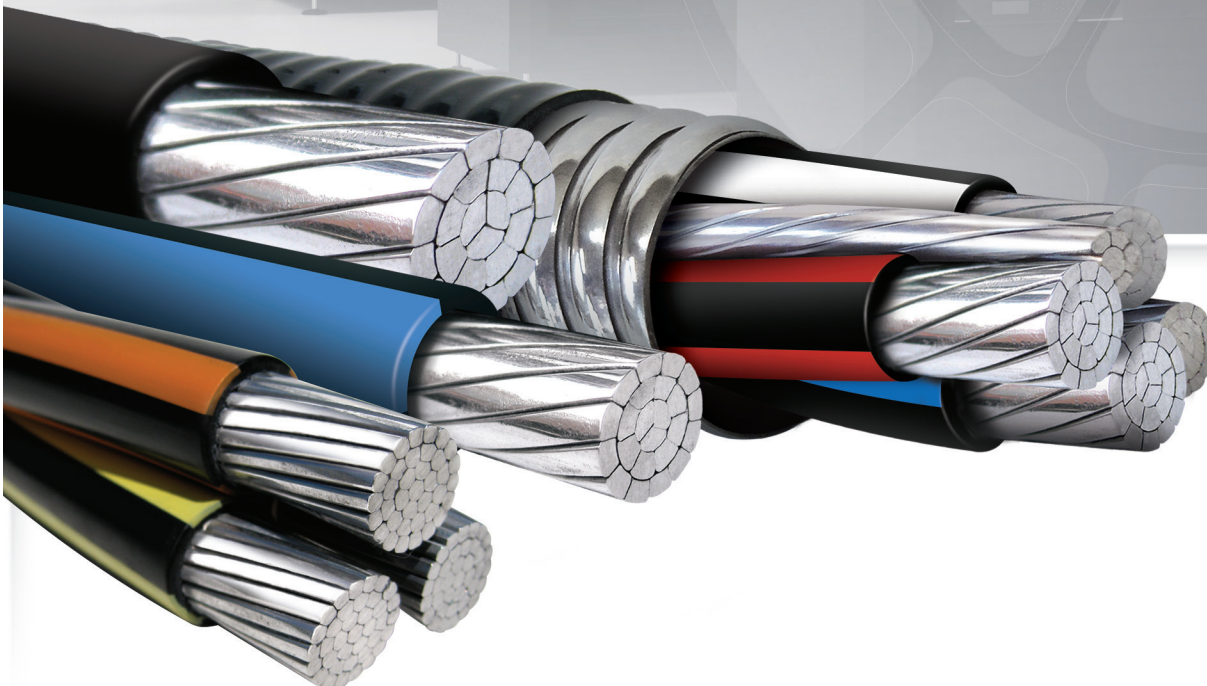
**WE GET IT**

24/7 Emergency Material Access



# STABILOY® BRAND FEEDER SOLUTIONS

## DATA CENTER



 **General Cable**

# Introduction

General Cable understands that data centers depend heavily on a steady, reliable and scalable source of power. That is why our STABILOY® Brand aluminum alloy feeder cables are installed with confidence in a variety of data centers in North America including:

- **Corporate data centers**
- **Web hosting data centers**
- **Co-location facilities**

The STABILOY Brand of products includes MC Cable, FeederPlex HS® XHHW-2 cable, and single conductor WIDESTRIPE HS® XHHW-2 cable, which are designed to distribute power throughout the building. Each of these cable solutions provides significant cost savings and reliable performance. STABILOY Brand MC Cable offers a durable interlocked aluminum armor to protect the electrical conductors from damage, while allowing flexibility in construction and design. The all-in-one assembly of MC Cable makes it a cost-effective solution for electrical retrofits in existing buildings. STABILOY Brand single conductor WIDESTRIPE HS XHHW-2, a phase-identified, low coefficient of friction cable can be used in EMT, PVC or other types of conduit. Our FeederPlex HS XHHW-2 cable is a factory-plexed assembly of XHHW-2 conductors that allows for fast and easy cable pulls while eliminating the need to pull multiple conductors from separate reels. So whether you are installing in conduit or not, STABILOY Brand aluminum alloy feeder cables offer you a safe, reliable and cost-effective solution for distribution feeder applications.

Quality is never a question with STABILOY Brand cables. In fact, General Cable tests every foot of every aluminum alloy feeder cable that it manufactures. Each STABILOY Brand single conductor and FeederPlex assembly is tested using the application of high voltage while immersed in water, ensuring that the insulation has zero defects.

The superior performance of STABILOY Brand aluminum alloy cables has been validated by independent research. The Georgia Power Research Laboratory conducted a study comparing STABILOY Brand feeders to copper conductors. The results of the study show that connections installed on AA-8030 aluminum alloy performed as well as or better than connections installed on copper conductors of equivalent ampacity in the current cycle submersion test.

STABILOY Brand aluminum alloy is readily available, infinitely recyclable and is manufactured in an environmentally responsible manner. STABILOY Brand feeders contain no heavy metals and are RoHS\* compliant, and the cable jackets are free of lead and cadmium stabilizers. General Cable XHHW-2 insulation provides a longer life than THHN/THWN-2, thereby extending the total life of the installation and reducing waste.

There's no question: green construction is the building trend of the decade. However, in today's tough economy, it is crucial to cut costs while considering the environmental impact of our building material choices. By including STABILOY Brand MC Cable in your project specifications, the savings you realize can be used to defray the cost of energy-saving devices and accelerate the payback of your data center.





## APPLICATION

STABILOY® Brand feeder cables are UL® Listed and can be used for services and feeders.

- **Service and feeder conductors to the main distribution center in a variety of buildings including: corporate data centers, web hosting data centers and co-location facilities.**
- **Feeder conductors for power distribution to the panel throughout a variety of building constructions including: wood stud, metal stud, concrete poured and cinder block.**
- **Feeder and branch circuits for a variety of specialized equipment and HVAC services.**
- **Temporary services for power throughout the construction phase. Our Metal Clad cable with PVC jacket can be used in exterior locations including wet locations and those exposed to sunlight.**

## PROJECTS LIST

- **Time Warner Data Center – Syracuse, NY**
- **Microsoft Renovations – Redmond, CA**
- **Amazon Boardman Data Center – Pasco, WA**
- **Microtech Office Building – Denton, TX**
- **Bank One Operations Data Center – Fort Worth, TX**
- **Bank Data Center – Guelph, ON**

## SPECIFICATIONS

Field Application Engineers are on staff to help you navigate the electrical specification process including takeoffs and voltage drop calculations. FAEs also serve as a resource for specification changes, value engineering proposals and technical questions.

To gain the maximum value benefit on your project, specify STABILOY Brand 8000 Series aluminum alloy as an alternative in the Master Electrical Specification.

A sample specification is included below for reference.

### 600-VOLT INSULATED CONDUCTORS

- All branch circuit conductors and feeder conductors 10 AWG and less shall be soft-drawn annealed copper with conductivity of not less than 98% IACS at 20 degrees C (68 degrees F). Conductors greater than 10 AWG copper may be converted to aluminum at the contractor's option. The contractor shall be responsible for increasing the conductor and conduit sizing, if necessary, when aluminum conductors are substituted for copper. The ampacity of the aluminum conductor shall be adequate for the load served and sized appropriately for the overcurrent device. The conduit fill shall not exceed NEC® requirements.
- Conductors 10 AWG and smaller shall be solid and conductors 8 AWG and larger shall be stranded. Minimum wire size shall be 12 AWG unless otherwise noted on the drawings.
- All wire and cable shall be permanently marked to indicate size, voltage, type and temperature rating in accordance with NEC Article 310 and applicable product standards. 6 AWG and smaller grounded and equipment grounding conductors must be factory identified (typically white or green).
- Provide factory colored insulation for phase conductors 10 AWG and smaller. Larger insulated phase conductors may be factory identified with an approved field applied tape.
- Aluminum conductors shall be as follows:  
STABILOY Brand Type XHHW-2: For dry and wet locations, maximum operating temperature 90° C. The conductor shall be compact stranded AA-8000 series aluminum with black cross-linked polyethylene insulation. The cable shall meet the requirements of Federal Specification JC-30B. The conductor shall comply with ASTM Standards B800 and B801 or B836.

### ALUMINUM CONNECTORS AND TERMINATIONS

- All connectors and terminations shall be UL listed for use with aluminum conductors. All connectors and terminations shall comply with UL Standard 486A-B and be marked "AL", "ALCU", "AL7CU or "AL9CU" for 90° C circuits.
- All connections and terminations shall be made in accordance with the connector or equipment manufacturer's recommendations.
- Tighten electrical connectors and equipment, including screws and bolts, in accordance with manufacturer's published torque tightening values. Where manufacturer's torquing requirements are not indicated, tighten connectors and equipment to comply with tightening torques specified in NEC Annex I.

STABILOY  
BRAND

# advantage™

STABILOY Brand aluminum alloy features a unique composition of metals that is specially engineered to give you the same performance as copper with less weight, lower cost and greater flexibility.



## Conductivity

It's true. Aluminum conductors carry twice the current per pound as copper conductors. This is a significant performance advantage that utilities depend on for the national power grid. In feeder cable applications, the same performance advantage of aluminum can be realized by using STABILOY Brand aluminum alloy instead of copper.



## Insulation

No question about it. STABILOY Brand aluminum alloy conductors feature superior insulation. In fact, the cross-linked polyethylene (XLPE) insulation on STABILOY Brand conductors performs better in cold impact, wet electrical and long-term aging tests. This makes it a better insulation for every application.



## Termination

Why mix metals? STABILOY Brand aluminum alloy conductors terminate safely with industry standard dual-rated aluminum lugs. The "similar metals" connection eliminates thermal expansion mismatch, which translates into a safe and reliable termination.



### Quality

It's a fact. General Cable tests every foot of every aluminum alloy feeder cable that it manufactures. Because STABILOY Brand aluminum alloy feeder cable is 100% tested for quality – its reliability, durability and safety are all guaranteed!



### Performance

High-quality STABILOY Brand aluminum alloy features a unique composition of metals that is specially engineered for superior performance in building feeder applications.



### Confidence

You can rest assured. If aluminum is the utility companies' preferred choice for carrying power all the way from the generator to the grid, it's the right choice for the last 100 feet of power delivery – feeder cable.



### Ease-Of-Use

STABILOY Brand aluminum alloy feeder cable is much easier to install. Maintenance for STABILOY Brand and copper is equal. This makes it more time-efficient and more cost-effective as well.



### Value

At twice the ampacity per pound, not only is aluminum more cost-effective than copper, but the price of aluminum is much more stable than the price of copper.



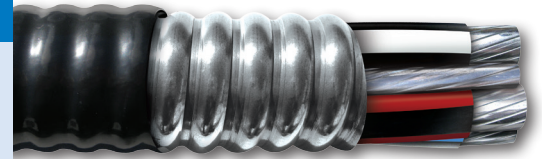
### Sustainability

Aluminum alloy is readily available and infinitely recyclable. In addition, STABILOY Brand aluminum alloy conductors are manufactured in an environmentally responsible manner.

# Products

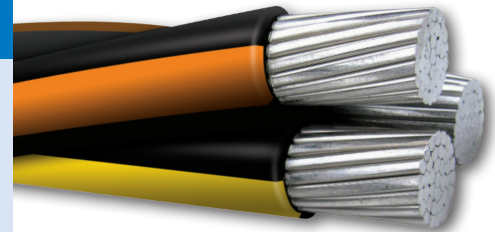
## MC Cable

An all-in-one XHHW-2 conductor assembly with phase-identified conductors and a bare equipment grounding conductor. The assembly is a “no conduit” solution that provides labor and material savings of up to 50% over copper in conduit. STABILOY Brand MC Cable is available with and without a PVC jacket.



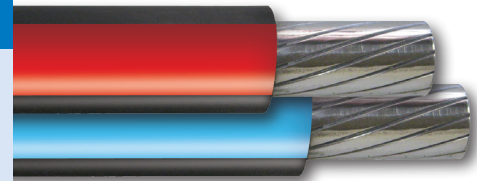
## FeederPlex HS XHHW-2

Factory-plexed assembly of aluminum alloy XHHW-2 conductors with specially designed XLPE insulation that allows for fast and easy pulling. Designed with phase identification for safer connections and delivered on one reel to the job site. STABILOY Brand FeederPlex HS significantly reduces installation time and effort during the pull, and minimizes site management.



## WIDESTRIPE HS XHHW-2

A single conductor aluminum alloy feeder cable with a specially designed XLPE insulation that allows for fast and easy pulling. Phase identification on the conductor consists of three wide color stripes embedded within the surface of the insulation. The insulation on STABILOY Brand WIDESTRIPE HS (High Speed) XHHW-2 conductors reduces pull force by 42% compared to the installation of regular XHHW-2 using pull lube.

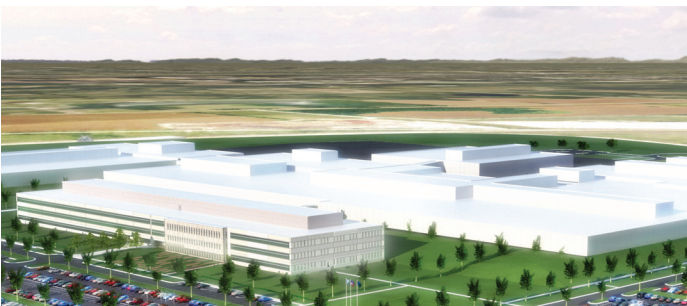


## STABILOY Brand XHHW-2

A single conductor feeder with cross-linked polyethylene (XLPE) insulation that provides better performance than THHN insulation in hot and cold weather conditions, wet electrical tests, higher short circuit temperatures and long-term aging tests.



## CASE STUDIES



### **NNSA – National Security Campus Kansas City, MO**

Citadel Electric Group Inc. – Oak Grove, MO

Why STABILOY Brand? STABILOY Brand FeederPlex HS was specified and installed for this highly sensitive defense project to reduce installation time and on-site storage.



### **Yahoo Data Center Buffalo, N.Y.**

Cupertino Design Engineers – San Diego, CA

Why STABILOY Brand? STABILOY Brand XHHW was installed in this large data center project to reduce installation time.