

THE STABILOY® BRAND ADVANTAGE
UNLOCKING THE SECRETS OF ALUMINUM
A LOOK AT THE ADVANTAGES OF ALUMINUM ALLOY OVER COPPER



Ever Wonder Why There's No Copper in the Air?

Since the early 1900s, aluminum and aluminum alloy conductor materials have been used by electrical utility companies for the transmission of electrical power within power grids across the country. In fact, over the years, aluminum has largely displaced copper conductors for these functions and has become the standard material for use in power transmission and distribution.

If you've ever wondered why there's no copper in the air, it's because aluminum is the superior choice in every way. For starters, aluminum features twice the ampacity per pound as copper. In addition, it's lighter, more flexible, and more corrosion-resistant. And it's much more cost-effective. As an example, if you're an electron going all the way from say, Denver to Albuquerque, on the grid – you're going to use the aluminum power highway.

Thanks to a specially engineered aluminum alloy, General Cable's STABILOY Brand feeder and service entrance cables now make it possible for commercial and residential users to enjoy the same reliability and economic advantages as power utilities.

Aluminum: Twice the Ampacity of Copper

Pound for pound, aluminum has twice the ampacity of copper. This example proves it:

Consider these conductors: 500 kcmil aluminum alloy and 350 kcmil copper.

The 350 kcmil copper and 500 kcmil STABILOY Brand have the same allowable ampacity (in fact, the 350 kcmil copper and the 500 kcmil STABILOY Brand both carry 310A at 75°C per the NEC®).

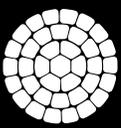
The 350 kcmil copper weighs nearly twice as much as the 500 kcmil STABILOY Brand. A 350 kcmil copper conductor weighs 1715 kg/km, whereas a 500 kcmil STABILOY Brand conductor weighs 810 kg/km.

Now that's the power of STABILOY Brand aluminum alloy conductors!

*500 kcmil
Aluminum Alloy*

350 kcmil Copper





Conductivity

When it comes to conductivity, aluminum conductors carry twice the current per pound as copper conductors, giving STABILOY[®] Brand aluminum alloy conductors a distinct performance advantage.



Insulation

STABILOY Brand aluminum alloy conductors feature a superior cross-linked polyethylene (XPLE) insulation that performs better in cold impact, wet locations and long-term aging tests compared to other types of conductors. This makes it a better insulation for every building wire application.



Termination

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

Electrical Properties

Wire Type	THHN/THWN-2 – Polyvinylchloride (PVC)	XHHW-2 – Cross-Linked Polyethylene (XLPE)
Wire Insulation	Thermoplastic	Thermoset
Minimum Installation Temp °C	-10°C (14°F)	-40°C ◀ BEST
Emergency Overload Temp °C	105°C	130°C ◀ BEST
Maximum Short Circuit Temp °C	150°C	250°C ◀ BEST
Insulation Resistance after 12 wks (Meg Ω - 1000 ft.)	0.85	105,250 ◀ BEST



Quality + Performance = Confidence. It All Adds Up!

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!

100% Tested

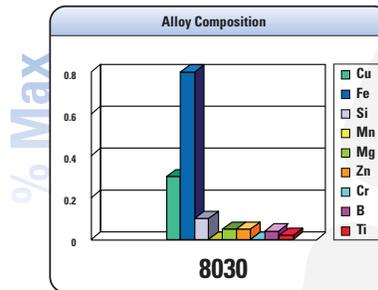


Performance



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

STABILOY Brand Aluminum Alloy: Engineered for Superior Performance



- **Iron (Fe)** gives STABILOY Brand increased tensile strength while virtually eliminating creep
- **Copper (Cu)** gives STABILOY Brand superior resistance stability at high temperatures which improves the connection reliability
- **Magnesium (Mg)** allows STABILOY Brand connections to create a greater number of contact points, ensuring reliable connections

Superior Performance Validated by Independent Research: the Georgia Power Research Laboratory*

The results of a Georgia Power 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.

“Overall the maximum temperature values, resistance stability values and temperature stability values were very close.”

*Georgia Power Research Laboratory, Project C94925, Aug 1995

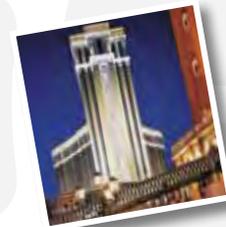
Confidence



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.

STABILOY Brand Aluminum Alloy: The Confident Choice

- Twice the ampacity of copper per pound
- Safer termination
- Better insulation
- Specially engineered for superior performance
- Lighter, more flexible, easier to install
- More cost-effective than copper



**Venetian Hotel
Las Vegas, NV**

For Long-term Performance, Trust STABILOY Brand

“As an experienced electrician for over 30 years, I was trained using EMT or Rigid conduit and never considered any other method. I have discovered that sometimes change is a good thing. I was recently introduced to STABILOY Brand MC Cable and decided to give it a try. I now consider STABILOY Brand MC Cable as my first option. I have literally saved thousands of dollars on labor and material using STABILOY Brand MC Cable. Installation is so much easier that I now use apprentice-level electricians for most of my Feeder and Sub-feed installations. I am proof that if a company wants to make a larger profit on any project, you must consider STABILOY Brand MC Cable first.”

**Tom Metroyanis – Electrical Contractor
Over 30 years experience in the
electrical industry**



Easy, Cost-Effective, Sustainable.

Ease-Of-Use

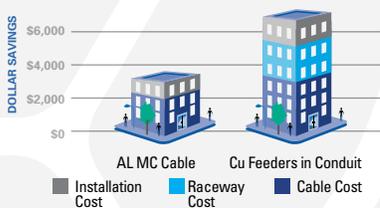


STABILOY Brand aluminum alloy feeder cable is much easier to install. Maintenance for STABILOY Brand and copper is equal. This makes it more time-efficient and more cost-effective as well. For conductors of equal ampacity, STABILOY Brand is:

- **Lightweight** – Weighs 50% less than copper per pound
- **Flexible** – 25% more flexible than copper
- **Less Springback** – 40% less springback than copper
- **Compact Stranded** – STABILOY Brand is a similar conduit fill as copper for amps delivered
- **No Additional Maintenance** – Not necessary to periodically retighten connections

Proven To Save Up To 50% In Total Installed Costs

Comparison of Total Feeder Installation Costs



*Based on 100 ft. run of 750 kcmil AL MC Cable w/ 3/0 AL ground vs. 500 kcmil Cu in 3" EMT w/#3 Cu ground

STABILOY Brand MC Cable is a UL® Listed, metal clad assembly of phase-identified XHHW-2 conductors and a bare equipment grounding conductor.

Compared to an equivalent copper cable in a 4" EMT installation, STABILOY Brand MC Cable yields a 50% savings.

STABILOY Brand MC Cable is an all-in-one assembly offering fewer installation steps. STABILOY Brand MC Cable only requires one reel of cable per run versus up to five reels for conductors in conduit. The strong, lightweight aluminum alloy cable can bend around corners and is not limited by the 360° rule, thus eliminating the need for pull boxes and elbows.

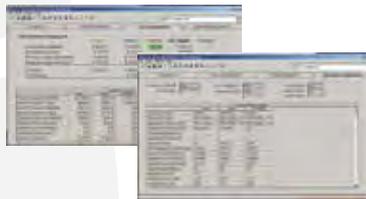
Value



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. As every professional project manager knows – stable pricing means less risk.

General Cable Design Software

This proven analytical software is available from General Cable to help you easily quantify the value of aluminum alloy feeder cable on every job.



A building can be wired with STABILOY Brand feeder cables for about half the cost of installing copper feeders



Remove the risk of copper by using the stable choice – STABILOY Brand aluminum alloy

Quoting Copper Can Be Risky

You never know when the copper price you quote will be lower than the price of copper when you land the job. This eats into profits. Aluminum prices are much more stable than copper prices. As a result, STABILOY Brand aluminum alloy feeder cable offers you greater base metal price stability, which means less risk on every bid that you quote.

Sustainability



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



STABILOY Brand Aluminum Alloy Conductor Metal is 100% Recyclable



STABILOY Brand Aluminum Alloy is Environmentally Responsible

- General Cable's operations feature reduced waste, emissions and discharges
- STABILOY Brand contains no heavy metals* and is RoHS compliant
- General Cable's XHHW-2 insulation provides a longer life than THHN/THWN-2 insulation, thereby extending the total life of the installation and reducing waste
- General Cable's cable jackets are free of lead and cadmium stabilizers*
- STABILOY Brand aluminum alloy is 100% recyclable

*Denotes compliance to RoHS, Directive 2002/95/EC.



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