THE STABILOY® ADVANTAGE

UNLOCKING THE SECRETS OF ALUMINUM
A LOOK AT THE ADVANTAGES OF ALUMINUM ALLOY OVER COPPER

ALCAN

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

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

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

STABILOY® advantage™

Conductivity

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

Insulation

No question about it. STABILOY aluminum alloy conductors feature superior insulation. In fact, the cross-linked polyethylene (XLPE) on STABILOY 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 aluminum alloy construction terminates safely with industry standard dual-rated aluminum 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. Alcan Cable tests every foot of every aluminum alloy feeder cable that it manufactures. Because **STABILOY** aluminum alloy feeder cable is 100% tested for quality – its reliability, durability and safety are all guaranteed!

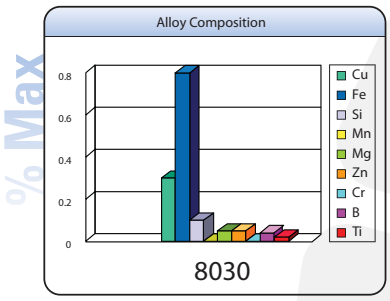
Each **STABILOY** single conductor and **STABILOY** FeederPlex assembly is wet test-tank verified for quality.

100% Tested

Performance

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

STABILOY® Aluminum Alloy: Engineered for Superior Performance



- **Iron (Fe)** gives **STABILOY** alloy increased tensile strength while virtually eliminating creep
- **Copper (Cu)** gives **STABILOY** alloy superior resistance stability at high temperatures which improves the connection reliability
- **Magnesium (Mg)** allows **STABILOY** 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."

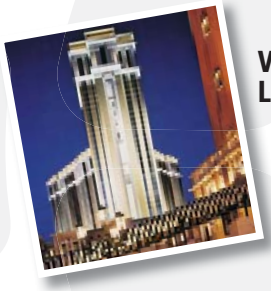
**Georgia Power Research Laboratory, Project C94925, Aug 1995*

Confidence

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

STABILOY Aluminum Alloy: The Confident Choice

- Twice the ampacity of copper per pound
- Reliable termination
- Better insulation
- Specially engineered for superior performance
- Lighter, more flexible, easier to install

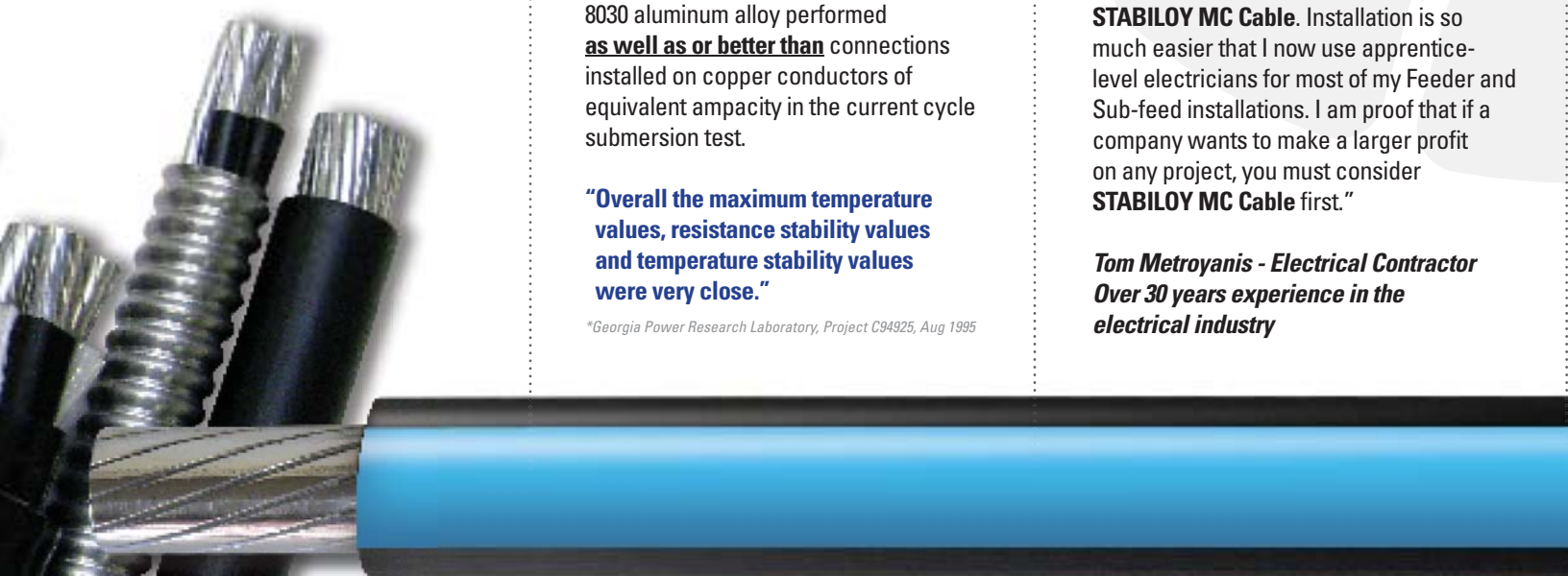


Venetian Hotel Las Vegas, NV

For Long-term Performance, Trust STABILOY

"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 MC Cable** and decided to give it a try. I now consider **STABILOY MC Cable** as my first option. I have literally saved thousands of dollars on labor and material using **STABILOY 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 MC Cable** first."

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



Easy, Cost-Effective, Sustainable.

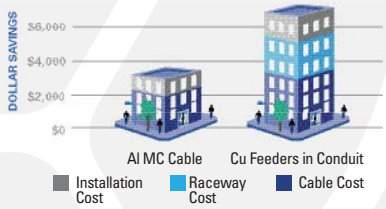
Ease-Of-Use

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

- **Lightweight** – Weighs 50% less than copper
- **Flexible** – 25% more flexible than copper
- **Less Springback** – 40% less springback than copper
- **Compact Stranded** – **STABILOY** is a similar conduit fill as copper for amps delivered
- **No Maintenance** – Not necessary to periodically retighten connections. This is exactly the same as copper conductors.

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

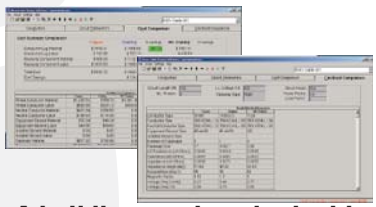
Compared to a similar copper cable in a 4" EMT installation **STABILOY MC Cable** yields a 50% savings.

STABILOY MC Cable is an all-in-one assembly offering fewer installation steps. **STABILOY 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.

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.

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



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

Remove the risk of copper by using the stable choice – STABILOY 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** 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** aluminum alloy conductors are manufactured in an environmentally responsible manner.

STABILOY Aluminum Alloy Conductor Metal is 100% Recyclable

STABILOY Aluminum Alloy is Environmentally Responsible

- Alcan Cable's operations feature reduced waste, emissions and discharges
- **STABILOY** contains no heavy metals* and is RoHS compliant
- Alcan 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
- Alcan Cable's cable jackets are free of lead and cadmium stabilizers*
- **STABILOY** alluminum alloy is 100% recyclable

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

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