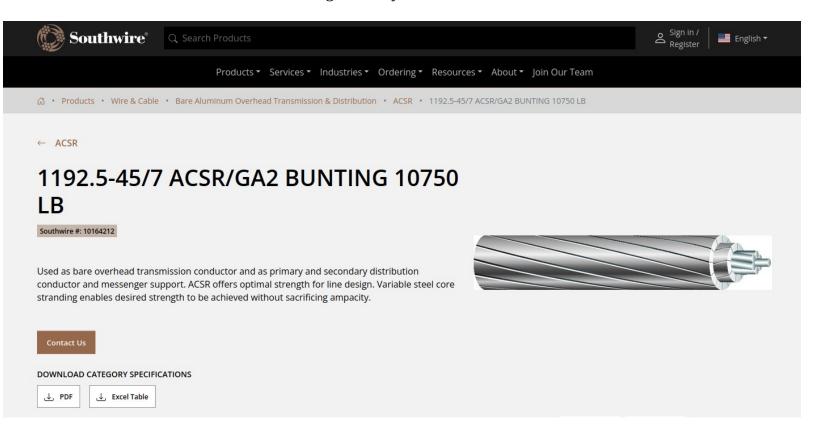
Comment on Eversource 1/18/2024 Hurd State Park Asset Condition project:

The project presentation states:

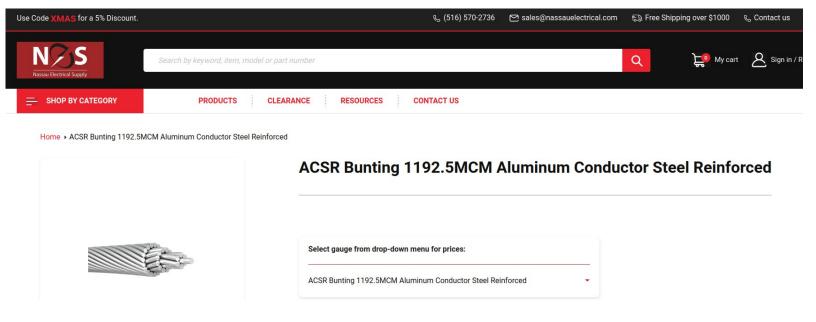
- The 362, 376, 1772 lines use 1192 ACSR conductor for the spans crossing the Connecticut River
 - This conductor is custom-made and no longer readily available
 - On a similar river crossing span on the 1772 and 348 lines where the 1192 ACSR was utilized, damage caused by vibration was observed in 2020

Is this conductor 1192, and if so, why was it custom-made when 1192.5 conductor was presumably available?

Or is it 1192.5, and if so, is it no longer readily available?



https://www.southwire.com/wire-cable/bare-aluminum-overhead-transmission-distribution/acsr/p/10164212



https://www.nassauelectrical.com/products/acsr-bunting-1192-5mcm

1192.5MCM ACSR Grackle Conductor

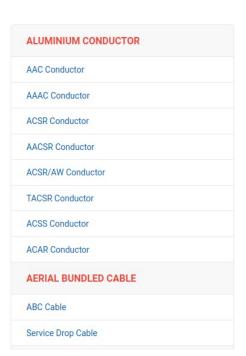


1192.5MCM ACSR Grackle Aluminum Conductor Steel Reinforced

Also Known As:

1192.5 Grackle steel reinforced cable, 1192.5 Grackle acsr wire, 1192.5 Grackle acsr cable, 1192.5 Grackle aluminum conductor steel reinforced, 1192.5 Grackle acsr aluminum conductor steel reinforced, 1192.5 Grackle all aluminum conductor, 1192.5 Grackle aluminum alloy cable, 1192.5 Grackle abrasive resistant cable, 1192.5 Grackle transmission overhead, 1192.5 Grackle overhead power line components.

Allowable Ampacity for 1192.5MCM ACSR Grackle Conductor: 1140 Amps

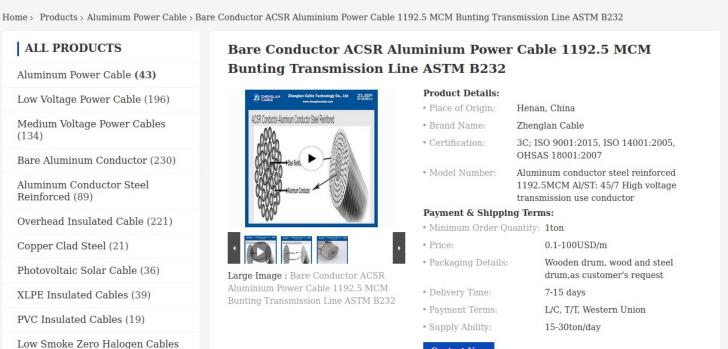


Search...

https://www.gecable.com/1192-5mcm-acsr-grackle-conductor/

(23)

Contact Now



https://www.aluminumpowercable.com/sale-29119307-bare-conductor-acsr-aluminium-power-cable-



On a similar river crossing span...where the 1192 was utilized, damage caused by vibration was observed in 2020."

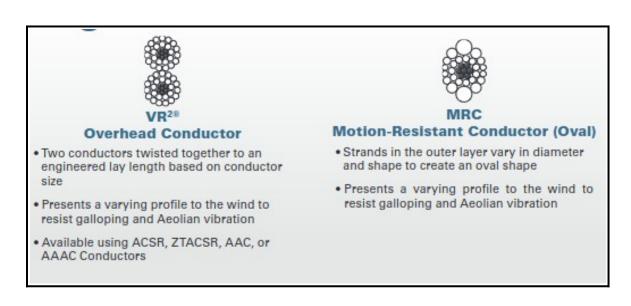
(Why utilized rather than used? "utilize is typically applied with the particular meaning of "to make use of: to turn to practical use or account," and often suggests the discovery of a new, profitable, or practical use for something...")

Where the 1192 was used, damage caused by vibration was observed in 2020.

Where Eversource installed the 1192 on a similar river crossing, aeolian vibration damaged the conductor.

Eversource installed 1192.5 ASCR conductor on a similar river crossing in 19XX Routine drone inspections XX years later showed minor damage to XX conductor due to aeolian vibration. This damage was repaired.

Should Southwire VR and MRC conductors be evaluated for this crossing?



"VR2® Conductor – Southwire Company, LLC's twisted pair conductor design – provides vibration and galloping resistance without the schedule delays associated with bagging problems during installation. Now, Southwire's ZTACSR/VR2 conductor provides higher thermal resistance allowing for greater ampacity without having to increase conductor size."

'Southwire's Motion-Resistant Conductor is designed for overhead distribution and transmission lines. It is a galloping- and vibration-resistant, bare aluminum construction, **designed for use in overhead applications subject to aeolian vibration and galloping due to wind and ice.** Motion-Resistant conductors can be strung to the maximum allowable tension limits without the need for additional vibration protection."

A product description of what appears to be the proposed conductor (1590-54/19/MA2/63% Falcon) states: "ACSS is used for overhead distribution and transmission lines. It is designed to

operate continuously at elevated temperatures up to 250°C without loss of strength it sags less than a comparable ACSR under electrical loadings it is self-damping if prestretched during installation and its final sags are not affected by long term creep of aluminum. The advantages make ACSS especially useful in reconductoring applications requiring increased current with existing tensions and clearances, new line applications where structures can be economized because of reduced conductor sag, new line applications requiring high emergency loadings, and lines where aeolian vibration is a problem."

https://www.southwire.com/wire-cable/bare-aluminum-overhead-transmission-distribution/acss/p/61190323

It does not appear to be designed for aeolian vibration, unlike the two shown above.

Where is the data comparing these three conductors for resistance to aeolian vibration and for carrying capacity?

Chris Soderman stated that ACCC type conductors have significantly lower line losses only under high loads/temperatures. Where are the line loss comparisons at varying loads/temps, for the proposed conductors and the two above? Is a line carrying high loads more efficient? If 60% capacity (the existing lines) is a low load, then why is Eversource increasing the size of the conductors?

The Eversource presentation states:

The DOE and EPRI recommend fiber as a means to strengthen the security and resilience of critical communication infrastructure on which the nation depends on to protect against the consequences of electromagnetic pulse (EMP) attacks

"...on which the nation depends..."

The DOE and EPRI also recommend high-performance conductors:

https://www.energy.gov/oe/articles/advanced-transmission-technologies-report

"The practice of utilizing conventional aluminum conductor steel reinforced (ACSR) conductors in overhead transmission and substations is slowly being taken over by newer advanced conductors—which have inherent advantages of improving grid efficiency, current carrying capacity, reliability, and resilience."

https://www.epri.com/research/programs/024056/results/3002024464

https://acore.org/wp-content/uploads/2022/03/ Advanced Conductors to Accelerate Grid Decarbonization.pdf

Compare Eversource to CNP, (CenterPoint Energy Houston Electric):

"Part of the utility's strategy for meeting load growth is to rely on high-temperature low-sag (HTLS) conductors to increase ratings. CNP tested and approved the use of aluminum conductor, steel supported (ACSS) at 345 kV in **2000**, and pioneered the installation of Southwire's ACSS/HS285 in **2007** ("First U.S. Installation of New ACSS Conductor," *Transmission & Distribution World*, December 2007). CNP quickly accepted the challenge to become the first commercial installer of Southwire's new stranded carbon-fiber-core C⁷ overhead conductor with Celstran CFR-TPR.' (T&D World, **2014**, bold added)

https://www.tdworld.com/overhead-transmission/article/20964350/high-capacity-meets-low-sag

Ten years later Eversource refuses to use ACCC conductor, instead spending millions of rate-payers dollars to reconductor and rebuild its lines with ACSS.

These project presentations need to contain far more information and detail. Eversource needs to provide:

Spec. sheets on structures, conductor, and OPGW, including prices and payback periods.

Profile drawings showing sag for the existing conductors, and the proposed (ACSS) and high-performance (ACCC type) conductors of the same amperage, at varying distances between structures.

Current and expected (ISO scenarios) line loads.

Alternatives using high-performance conductors (ACCC type)

Structure inspection reports and gradings for all structure

Construction sequence narratives.