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## **Copper Center Conductor vs Copper Clad Steel**

The SBCA has recently received a number of questions regarding the use of coax cable with a solid copper center conductor vs cable with copper clad steel. The SBCA continues to recommend the use of coax cable with a solid copper center conductor for a number of reasons.

- The frequencies used in satellite television distribution travel on the outer edge of the center conductor. If you are using copper clad steel, and the copper cladding is scored during the cable preparation process you will lose the ability to properly pass low voltage and the RF frequency as the steel portion of the center conductor will not properly pass the signal. The steel center conductor will also be susceptible to corrosion. Corrosion could potentially damage other components in the system. Under ideal conditions an installer would never make a mistake when prepping the cable. Unfortunately not all installations are done under ideal circumstances, inclement weather, low light and other environmental issues are part of the job and can cause a technician to make a mistake. Damage to the copper coating can also be caused when installers use improper tools such as a knife or dull cable prep device to strip the cable. While you may have complete confidence in your abilities and tools do you have confidence that all of your employees take the same approach? How about those installers that you contract installation work to?
- Satellite television distribution involves sending voltage over the coax. The longer distance that a coax cable is run the more voltage is lost. Solid copper is a better conductor than copper clad steel. Copper clad steel will have more than twice the voltage drop than solid copper. So if you are installing a system in a larger home or utilizing longer runs you will want to use wire with a solid copper center conductor to mitigate potential voltage loss.
- Many housing contractors will use wire that does not meet the standards for satellite installation during the construction process. To determine the type, look at the end of the center conductor. Copper clad cable will be silver in the center instead of copper all the way through. You can also compare the size of the center conductor with a piece of cable that you know meets standards. RG 59 will have a smaller center conductor than RG6. If you find that the home is wired with inferior cable it is better to use the proper wire than to hope that a problem does not develop. You risk the cost of a service call, chargeback or lost referrals due to an unsatisfied customer if you do not use the proper wire.
- Solid copper more flexible than copper clad steel. This will reduce installation time and also diminish the chance of the cable being damaged during wall fishes and in tight spaces.

It is important to note that not all problems with associated with cable show up immediately. Problems can arise over time due to weather, type of equipment used and other sources. There may be a nominal cost savings in using copper clad steel, however, the potential for future service calls is greatly increased. One service call run at your expense can cost more than the savings on 20, 30 or more installs. Ultimately you are responsible for the quality of the installation and a satisfied customer so be sure to use only the best materials as it will make a difference.

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