

Low Cost Insulators / Stand-Offs for Ladder-Line

Amateurs have used parallel-wire antenna feedlines from the early days of Amateur Radio, mainly because of the low losses and the lure of perhaps using one wire antenna on several bands with a suitable tuner.

The first open wire feedlines were *bare wire* spaced approximately six inches apart by insulated spacers and had a characteristic impedance of 600 ohms.

Television in the 1950s brought 300 ohm TV “twin-lead” with the conductors spaced about 0.3-inches and separated with a thin web of polyethylene.

Following WWII, *low-cost* coaxial cable became available and was enthusiastically adopted by Amateurs as it could be bent around corners, *buried* and used close to metal objects without issues.

Today, there are several types of balanced twin-lead or ladder-line transmission lines commonly used to feed various HF wire dipole antennas, for example the G5RV or one of its many variants.

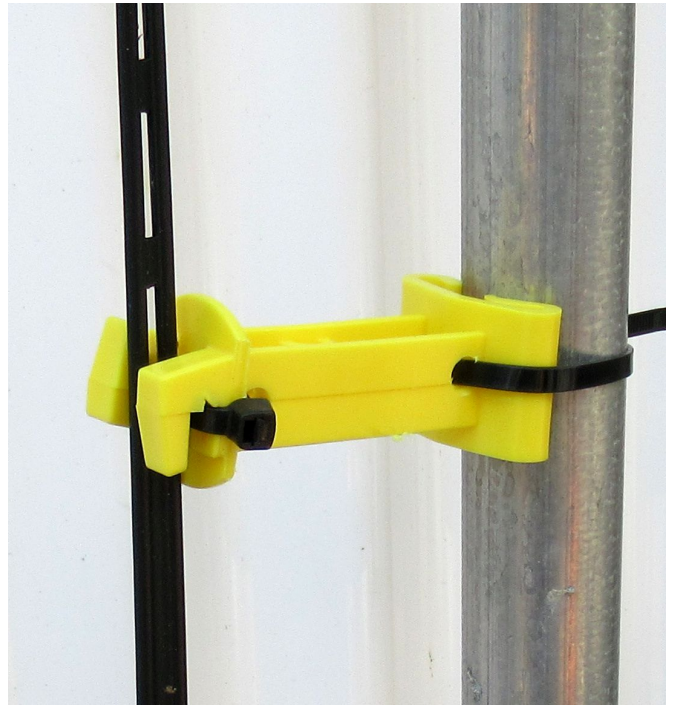
I recently acquired a “W5GI” version that uses 300 ohm ladder line to feed the antenna. I was looking for a source of suitable “stand-off” insulators *that I could use to secure the ladder line to my tower.*

I found a bag of “Patriot” *brand*, 2-inch, wrap-around, T-post extender, *electric fence* wire insulators at my local farm supply store for less than \$10, that were easily modified for use with the ladder-line.

The top photo shows one of the modified insulators mounted on a leg of my tower. The modification was first to cut away the T-post wrap-around section and then to drill two one-quarter inch holes to secure nylon cable zip-ties, one to hold the insulator to the tower and one to hold one side of the ladder line between the “claws” of the insulator.

The bottom photo shows an alternative modification to cut off the “claws” and the side lobes of the insulator face so that the cable zip-tie will hold the entire width of the wider ladder line tight to the insulator. Be sure to use good quality UV resistant zip ties.

Discussions of the different types of transmission lines and their characteristics are available from many sources, including several ARRL publications.



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