

The Radio Hotel – Antenna Insulators

The work horse of different colors

by Rick Hiller – W5RH



For best antenna performance, you have to isolate the antenna wire from the surrounding buildings, masts, tree branches etc. Isolation is critical, especially at the ends of an antenna wire, where the voltage is the highest. Any wire contact can cause havoc. So, an insulator is used to electrically separate the wire from the mast or rope. These insulators come in various sizes, shapes and materials. Dog Bone, Clam Shell, Egg, Electric Fence -- shapes made from ceramic, glass, injection molded plastic, wood, etc. The pictures above show a selection of antenna insulators, but this number is not even close to the total number of different types of insulators ever used.

Why are there ripples on some insulators? Skin effect...RF flows on the surface of a material and these undulations lengthen the leakage path.

Want to know more about insulators? Here are a few references:

QST May 1923 "Some Tests for Amateur Antenna Insulators"

DX Engineering DXE-UWA-END-KIT Patent # D534,905

DX Engineering – article "How Strong are DX Engineering Insulators"

TenTec Acro-Bat Insulator

Alpha Delta – DELTA CIN End Insulators

Enjoy your hobby.....73, W5RH