

Hanging cable

With collocation becoming standard practice, towers have less space and more loading. Stacking cable hangers can save precious space.



By Christopher Stockman

With the high cost and difficulty of zoning new tower structures, collocation at existing tower sites has become standard practice.

Along with this alternative, however, come loading and space restrictions of these tower assets. Is there room for additional antennas and cable runs? How much new cable mounting structure will be required, and at what cost? Until now, these were two of the usual questions. But today, new coaxial cable hanger options can help expedite a solution and reduce costs.

Stacking hangers provide a viable solution because they require little tower space. Instead of attaching cables across the face of the tower, stacking hangers use vertical space to position one cable run on top of another.

Plastic hangers were the first product available for this application. Using a regular threaded rod, these hangers could

be stacked to obtain a tight bundle of as many as six cables. Such cable bundles could be located just about anywhere tower space allowed two parallel cable runs, and angle and round member adapters could be used to locate these runs on cross members or tower legs.

Evolution of snap-in hangers

Despite their benefits, plastic hanger systems present some drawbacks. First, despite their apparent low cost, additional hardware must be added to the bill. These include threaded-rod hardware kits and, depending on application, angle or round member adapters. Then there are the cost of installation, where time is lost in attaching adapters, handling loose hardware and managing as many as six cables at each attachment point.

The latest innovation in cable hangers is a stainless-steel, snap-in hanger that can be stacked on itself to support cables in a vertical array without additional hardware. This hanger combines the installation advantage of the traditional snap-in hanger with the space-saving cable-stacking feature of plastic hangers. This means the hanger can pos-

sibly double or triple the cable-carrying capacity of existing cable ladders.

Envision a typical wireless installation with six runs of 1⁵/₈" coaxial cable. Normally, these runs would consume almost the entire face of the cable ladder, but with a stacking snap-in hanger, only three positions are required. This saves valuable space for other uses.

Next, consider the problem of adding the same six cable runs to a tower where only one cable ladder position is available. Again, stacking snap-in hangers provide a simple solution. Replace the existing hangers on four cable runs with the hangers, then snap in the new runs on top with the stacking hangers. The remaining two cables will occupy the remaining ladder position.

Versatility of snap-in hangers

The new breed of snap-in hangers brings versatility to unusual antenna site installations. For example, consider the need to add new antennas on a full guyed tower where the only option is to attach the new runs to a tower leg.

In this instance, a universal adapter can be bolted to the tower's formed angle legs, then the two new cable runs can be snapped in.

What to do about the sidearm mount? Pull out hose clamps or wraplock, and secure the same adapter to the round members to accept a snap-in hanger for the jumper cable.

Large poles, smokestacks and rooftops can accept snap-in hangers with formed adapters. Secure the adapter to the structure with the appropriate banding strap or hardware and follow with stacking hangers as many as three high to save space.

Many variations of tower arms, roof sleepers and pole adapters are available for snap-in hangers from manufacturers across the country. The key is to use the stacking snap-in hanger to obtain more cable capacity from any of these products.

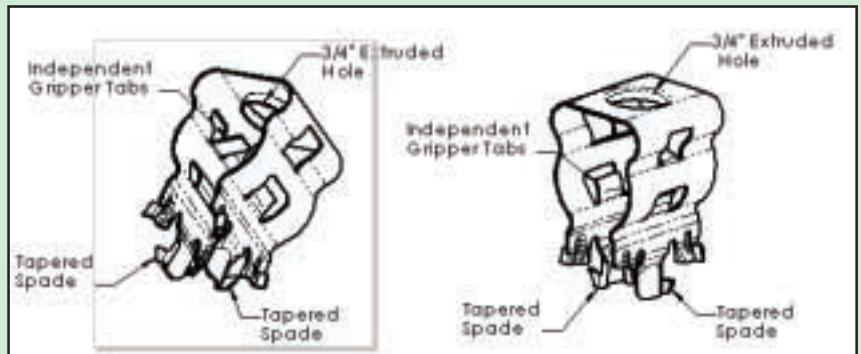
Today, the preferred tower configuration includes multiple antenna systems on a single support structure. Finding room for these systems can cause nightmares, but now we can end those sleep-



Plastic hangers were among the first methods for stacking coaxial cables.



Existing cable runs can be remounted with stacking snap-in hangers to accept new runs on top.



The anatomy of a stacking snap-in hanger

How the snap-in hanger works

A receiver at the back of the hanger gives the hanger its capability to stack. Product engineers square the back of the hanger and add a $\frac{3}{4}$ " hole with an internally extended rim to accept the snap-in prongs of the second hanger.

Additionally, these prongs are strengthened to survive high winds. Engineers reshape the right- and left-side prongs by adding an opposing right-angle spade. These

spades produce a holding force on the adjacent hanger while also improving grip on the tower. The tapered spades guide the hanger into the mounting hole and overcome some galvanizing or paint build-up on the tower member to prevent hanger pop-out.

Four independent gripper tabs provide proper cable clamping, though the actual cable diameter varies for different manufacturers' nominal cable sizes.

Urban area case study

In late January, a cellular operator in Chicago needed to expand its capacity. This expansion called for three additional 190-foot antennas to be fed with $1\frac{5}{8}$ " foam-dielectric coaxial cable. The challenge in fitting multiple operators on this self-supporting tower involved a lack of room for new cable runs on existing cable ladders. The contractor determined the most cost-effective way to complete the installation on time was to use a stacking hanger.

The work entailed a simple rework followed by installation of three new cable runs. The rework operation consisted of removing existing snap-in hangers and replacing them with stacking hangers to serve as the mounting base for the subsequent runs. This done, the task was routine: Hoist the new cables and secure them to the top of the base hanger with additional hangers.

less nights. Multirun hanger systems provide a means to secure several cable runs vertically off the face of the mounting structure, conserving valuable tower space. They reduce the need for cable ladders and support adapters, and they reduce installation time to get sites on the air faster. ■

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