

## Amateur Radio Hook and Loop Fastener Considerations

Installing Amateur Radio mobile equipment into automobiles, boats, recreational vehicles (RVs) and so on is always challenging. Providing DC power connections and connecting antennas is just part of the job. The most important thing needed, however, is to get the



Speakers and cable bundle shown are secured with H&L fasteners

equipment securely mounted in the desired location. I have always found the strategic use of hook and loop fasteners to be a great help in this area. One big advantage is that there is no need to drill mounting holes or use screws or bolts. Another is the relatively easy removal of equipment when needed. However, there are some pitfalls to avoid and, since I have fallen into most, I will try to prevent you from doing the same.

### Background

Hook and loop fasteners were first invented and patented in 1955 by Swiss Engineer George de Mestral. Today, they are used in countless applications from aerospace to automobiles, to medical devices, to clothing and more.

Of course, many improvements have taken place since that time and many variants of the product have evolved, each characterized by differing combinations of key performance specifications. In other words, there is not just one **universal** hook and loop fastener product. Users have to choose from among dozens of similar products which sometimes have confusing ratings for specifications. Details like strength of closure, rated number of closures, type of adhesive used, bonding surfaces tolerated, temperature resistance – just to name a few.

Still, the great advantage of having separable fasteners that don't damage the installation surfaces, make hook and loop attractive for use in many mobile radio setups.

Some typical Amateur Radio Applications of hook and loop fasteners are:

- Mounting a flashlight in a convenient spot
- Securing a 9-volt battery on the outside of a project box
- Mounting a GPS "puck" antenna to window glass
- Securing an antenna tuner on top of your HF transceiver
- Holding and wrapping bundles of wires, cables etc
- Securing an external speaker to the car dashboard
- Securing a microphone clip or even a transceiver remote head to the car dashboard
- Fastening the mount for a transceiver or other similar item to the transmission hump, etc

The most commonly used colloquial name for hook and loop fasteners is "Velcro®", but according to the manufacturer, that name relates to the company and not to the product!

For more information, see the YouTube video “Don’t say Velcro®!” in the “References” at the end of this article.

Velcro® offers eight different adhesive choices alone.

3M Corporation also manufactures competing hook and loop fasteners in at least eight different product groups, but they also sell this product under their trademark name “Scotch™” brand.

To make our choices even more confusing, there are a host of “house” name brands offered, where the product may actually originate from 3M but be packed and branded by the Industrial supply houses under their own name and with minimal specifications provided.

For business users, the major manufacturers of course sell by specific part number with technical applications support and detailed data sheets describing holding performance, adhesive type and temperature resistance at minimum.

For consumers such as Radio Amateurs, I have found it is often hard-to-impossible to learn specifics of the product lines offered to us through retail suppliers. There are often no specific part numbers shown on packaging and there is only what I call a “dumbed down” consumer description. For example, you may be surprised to learn that a Velcro® fastener described as “Industrial strength” turns out to be rated only for 120°F maximum. (49°C).

This product will fall off your dashboard in summer.

Sadly, specific information for consumer products, such as temperature ratings, is simply not provided. Making matters worse, when we go into one of our favourite big-box hardware stores, our choices of what to use are often limited, simply because the store only stocks a few of the multiple available variants that they think may be popular.

Choose carefully when buying these products. Let the buyer beware!

### Hook and Loop Product Types

The most common product types are the adhesive backed tapes that come either in roll form or in cut lengths – separate rolls for hook and loop of course. Any shape from simple half-inch dots to squares up to four inches wide can be supplied. For bundling wires and the like, there are purpose-made strips with the hook on one surface and the loop on the other.

### My Recommendation

Before buying any hook and loop product, try to find out what the maximum temperature rating actually is. Look for products recommended for automotive, RV or marine use, with a maximum temperature rating of at least 150°F (65°C).

One product I have used with success, is available from RV or marine accessory suppliers as **Super Hi-Temp “Sticky Back hook and loop”**. I have included some links under “References”



below.

### Planning Ahead

Stating the obvious, hook and loop fasteners consist of two different parts: an adhesive strip with hooks only and another strip with loops only. It may seem basic, but you should think ahead and choose which part you are going to *always* use on the non-moving surface.

I always use the loop strip on the non-moving surface, simply because it is softer and doesn't snag bits of debris like the loop part can. It's your choice.

### Application Hints

In general, plastic materials used in the interior of cars – like a dashboard, transmission hump and so on – may have the remnants of manufacturing mould release on the surface or even silicone oils if you have ever had the car detailed.

It's been my experience that ***in order to get anything to stick properly in a car, first and always use a clean cloth with alcohol or an alcohol wipe and scrub the area to get rid of surface contaminants.*** Then dry the area off with another clean cloth. Press the hook and loop strip firmly in place and leave it for 24 hours before mounting anything to it. Don't get your fingerprints on the adhesive either as you will leave oil from your skin on it.

Temperature is very important! Hook and loop or Velcro® needs to be applied to surfaces close to room temperature (70°F, 21°C). In colder weather use a heat gun to gently warm up the area and keep it warm for about five minutes after application.

### References:

“Don't Say Velcro®”: <https://www.youtube.com/watch?v=rRi8LptvFZY>

Velcro® Adhesive Guide: <https://www.velcro.com/business/products/adhesive-options/>

Coil n' Wrap RV products: <http://www.coilnwrap.com/rv-rated-high-temp-sticky-back-hook-and-loop/>

RVCANADA: [https://rvpartshop.ca/product/rv-interior-fasteners/20369-ap-products-sticky-back-hook-and-loop-006-71.html?search\\_query=velcro&results=19](https://rvpartshop.ca/product/rv-interior-fasteners/20369-ap-products-sticky-back-hook-and-loop-006-71.html?search_query=velcro&results=19)

