VALUE-ADDED SERVICES

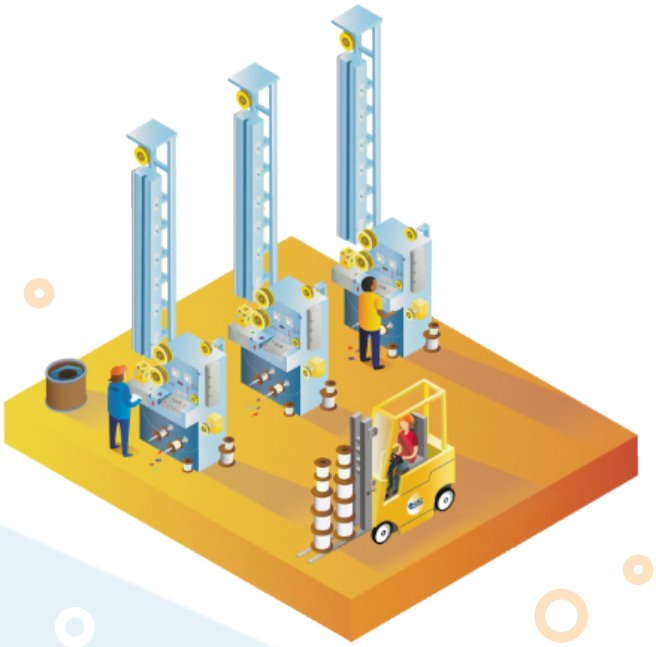
A customer once called our company requesting to purchase UL 1007 18 AWG lead wire. As the phone conversation progressed between himself and the salesperson, the customer mentioned problems he encountered twisting the wire with a drill back in his warehouse. He complained that the wire was picking up dirt & debris from the warehouse floor during the twisting process. Additionally, the process cost him more money because it required two people.

As shown in the twisting dilemma, wire and cable does not generally come with all the modifications you may need for a specific application. For example, your application could call for wire with ink jet printing for clear marking and easy identification during installation and usage. Similarly, you may like your wires dyed various colors for prompt circuit identification. This is where our value-added services take over and personalize wire specifically for your demands. Allied Wire & Cable supplies distributors, wire harness manufacturers and OEMs with value-added services on wire and cable products that goes beyond a basic or core service. In other words, it benefits the end user by "adding value" to the standard service offered. In the electrical wire and cable industry, value-added services include those such as braiding, cut and strip, printing, bar-coding, dyeing, custom put ups, striping and twisting.

Do you have an understanding of what your supplier is doing to your product when they say they are twisting or braiding? This article examines various value-added services and the processes that each entails. We'll offer a glimpse of the striping, dyeing, ink jet printing, braiding, twisting cut and strip quick-pull and heavy duty respool processes as well as special reel sizes, special packaging barcoding and labeling.

VALUE-ADDED SERVICES

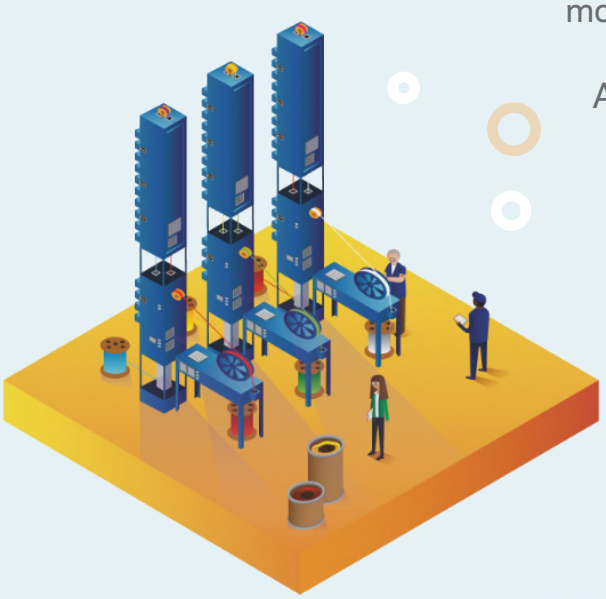
Striping and Dyeing



Allied Wire & Cable can add stripes or dye a base wire another color to add value to the product. This also helps to differentiate the wire for circuit identification and control inventory volumes of stocked material.

In order to dye a wire, a specially built machine feeds the wire through a system of pulleys. First, the wire passes through a "wiper," a foam circle that encompasses the entire cable. The jacket of the wire absorbs a formulated dye that is present in the foam. After passing through the wiper, the wire goes into a heat tower to cure and dry.

Striping, which AWC offers for extruded wire, is performed in the same machine as dyeing. However, for striping, the wire does not pass through a foam wiper. Instead, the wire passes through a striper head that spins around the wire before it goes into the drying tower. The produced stripes are either longitudinal or spiral. Post production striping usually generates a spiral stripe, like that on a candy cane. Longitudinal stripes, which run along the side of a wire, are also available post production, but are not as common as the spiral type. Contrasting stripes are generally used when more than ten circuits have to be identified.



Almost all insulations are able to be striped including PVC, rubber, silicone, and PTFE. Similar to striping, most PVC compounds can be dyed to individual specifications without encountering any problems. However, some compounds that are CV cured or irradiated are not able to be dyed because they were originally designed to repel both petroleum and alkaline based chemicals. The color will not soak into the insulation and is prone to flake off.

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VALUE-ADDED SERVICES

Printing

In addition to common striping and dyeing methods, there are other ways of marking wire for identification. Many OEM's and harness manufacturers prefer using printed wire in their assembled products. Printed wire not only helps in the assembly of products, but also benefits installers and users of the finished product.

One way of marking wire is with ink jet printing. Using a dot matrix printer, a series of "dots" create characters on a wire in micro print without compromising quality or clarity. For example, in the automotive industry, a harness may be manufactured for turn signals. In this case, the specific wire would be ink jet printed "left front turn signal" or "right rear turn signal" along with "tail lights" etc. Each wire would be color coded in the harness and ink jet printed, every few inches or feet as desired, making it user friendly and easily identifiable. Ink jet print is available in black or white.

Another way of marking wire is with a print wheel. A print wheel is used similar to that of a striping wheel, but instead of creating the longitudinal stripe, it will place words, letters, phrases, part number specifications etc directly onto the wire. The print wheel can be specific to your individual need.

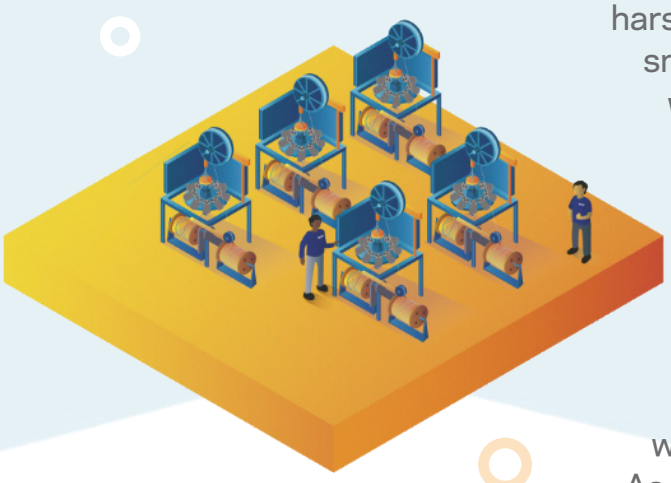
VALUE-ADDED SERVICES

Twisting

Many OEM's need paired wire in the manufacturing process. Grouping single or multi-conductor cables into various configurations cuts installation time dramatically because it allows wires to lay together well, which in turn makes working with them easier. In order to create paired wire, a process known as twisting must occur. Twisting entwines multiple wires and arranges them tightly next to each other. Two, three, and even up to eight wires can be twisted together in a specific to your needs lay.

The process of putting wire ends into a drill and then twisting the wire is one home-spun twisting method we have graduated from, but it will not remove the natural twist in each wire. Meaning that if the wire is cut into smaller lengths, it will not stay twisted together. Another problem with the method is the wire acquires dirt and debris on the production floor, which could transfer to the finished product and pose major problems. Twists using one of our dedicated wire twisting machines, is the only way to get a good lay to the wires, for a quality finished product.

Braiding



One process that helps add protection against abrasion in harsh environments is braiding. Braiding is a process in which small strands of steel wire, nylon strands or glass fibers are woven together on top of a wire or cable for added protection. At the start of the process, numerous spools, also called "Bobbins," of very small gauge wire (32-36 AWG) are inserted into a wire braiding machine. The bobbins are each placed in a precise location within the machine and the ends of each bobbin are pulled to the top of the braiding machine. Next, the bobbins are subjected to a spinning or circular weaving motion, while a wire or cable is pulled up through the center of the bobbins. As the synchronized process commences, a weave or braid is manufactured over the cable. Finally, the finished product is drawn out of the braid machine onto a larger spool or payoff.

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Cut & Strip

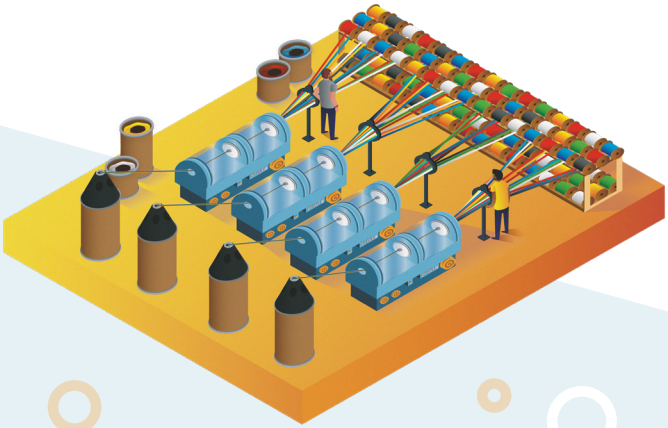
Having your wire cut and striped saves time and money and prevents excessive waste. Say you need 1000 four-inch pieces of your wire to install in printers that you manufacture. For each piece, you need .5 inches of the wire exposed on the ends. Instead of having your factory workers manually cut each piece off the reel and then remove the insulation from the ends, AWC will complete the process for you.

The cut and strip process starts at one end of a cut and strip machine where a reel is held in what is called a payoff. The machine operator enters Wiring Harness News, May/June 2007 Issue the overall length and desired cut and strip measurements overall length and desired cut and strip measurements for the pieces. Next, the wire is fed through a set of pressure sensitive wheels that hold the wire tautly. Then the wire is passed through a pair of blades that strip off the insulation, as it can sense where the bare wire begins. The wire is then pulled to the end to make the length cut. Finally, it is pulled backward slightly in order to make the final strip cut. The pieces of insulation cut for the strip can be left on the end of the wire to prevent the strands from fraying, or the conductor can be dipped in lead free tin solder. This detached piece of insulation is called the slug. The final cut and stripped wire is dropped into a bin and the machine will finish this process for the total amount of wire length the machine operator entered at the beginning of the process.

VALUE-ADDED SERVICES

Quick-Pulls

AWC has a variety of quick pull materials available to ensure a rapid turn over to orders placed and shipping in most cases same day. A few of these quik-pulls include 1015 and 1007 various gauge 1000ft reels on the smallest best fitting spools. Another quick-pull material is tubing, available in 100ft cardboard spools or in 4ft lengths. Overall we have a large option of quantity checked and verified spools ready to go, they range in various wires or cables gauges and lengths.



Heavy duty respools

Large power cables can be very heavy, we do the work for you with quantity verification and large core spools used to eliminate memory density. Our specialized large spooling machines ensure the cable isn't compromised in any fashion and have durable strong spools for support.

Special Packaging/Reel Sizes/Labels/Barcoding

Wire is heavy, consumes space and is hard to keep in inventory. In addition, OEM's often worry about the costs in set-up and handling of preprocessed and post-processed wire. Many OEM's that regularly use wire have gone the route of special reels or spools for their wire in order to efficiently use storage area, maintain an accurate inventory, and keep costs to a minimum. Distributors in the wire and cable business that cater to OEM's and harness houses have developed unique ways to store wire. One such way is to use bulk Drum "reels". Drums are commonly constructed of cardboard or pressed paper (with a center core of the same material) and metal rings around both the top and bottom. When wire is ready to be stored, it is laid into the Drum using a circular motion that allows for easy removal later on. Storage capacity in any given Drum can be thousands of feet depending on the gauge of the wire. The downside? If the Drum is rolled or damaged, the wire may become almost impossible to remove.

VALUE-ADDED SERVICES

We also have material available in pull boxes, coils, kits, cardboard spools, and various reel and spool sizes with core dimensions from small to large to accommodate your requirements. Reels and spools come in many different sizes and configurations for use with varying wire types. For example, large 6 to 8 foot tall wooden slatted reels hold large gauge power cable. Many wire manufacturers stick with the standard of 2,500ft to 5,000ft spools for hook up wire. Small gauge wire may be spooled on a 10 inch plastic spool that has a center core length of 5 to 6 inches and holds up to 10,000 ft. Certain factors determine the spool size you will need. One important factor is how the wire will be used in the manufacturing process. If the manufacturer usually cuts their wire by automated machine, the spool size or Drum size may be critical. For example, using an automated machine, a large Drum of wire can be gone in as little as 30 minutes depending on the length of the cut. Cost is another factor. As an added benefit for a large reel size or Drum Packs, many distributors offer discounts on bulk reels. We also have specific labeling and barcoding available to help on inventory stock types, names, amounts, lengths/splices, custom part numbers or any other specifications you may need listed on your material.

Conclusion

Allied Wire & Cable has the tools to prepare wire for the buyer's convenience. Whether the service is striping, dyeing, printing, braiding, twisting, cut and strip, special packaging or special reel sizes, we offer the ability to custom manufacture inventory to fit individual process and storage needs. This translates into better usage of time and space, and that further translates into profit.

To obtain any of the above-mentioned services, or for any further questions and details, contact Allied Wire & Cable for more information. We will gladly accommodate your wire and cable demands.

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