

# Variations

**Freelin-Wade sets the industry standard for fast turnaround.**

**T**his catalog describes our wide selection of standard tubing, hose and accessories. We also manufacture what we call “variations.” Most variations involve taking our in-stock tubing and personalizing it to our customer’s specifications. This includes coiling, bonding, cutting, special packaging or printing. Let us engineer a custom size, shape or color for your specific application.

## Assembly

Most of our tubing comes without fittings. If you would like your tubing to come with fittings, let us know. We have the equipment and personnel to make assembly a fast and efficient process.

## Bonding

Freelin-Wade has developed a special bonding process that can combine two or more tubes of any size and color. Just pick your tubing and have us bond them. It will make your work area more organized and simplify the task of line tracing. Bonding also makes your lines look more professional and user-friendly.

## Coextrusion

With our coextrusion capabilities, you are no longer limited to the properties of one tube. For example, you can have the flexibility of Polyurethane and the chemical resistance of Nylon.

## Coiling

A coil is an excellent way to keep tubing organized and out of the way. We offer several standard coils in this catalog but it’s easy for us to make a variation. Refer to page 33 for a list of coiling terminology.

## Colors

In addition to our 28 stock colors, it’s easy for us to match virtually any color you can dream up. Just send us a swatch of what you want us to match. It’s simple, and we’re the fastest in the industry at turning color variations around.

## Cutting

We have the right equipment and are set up to precisely cut our tubing in an efficient and cost-effective manner. If you need your tubing cut into specific lengths, then save time, money and reduce waste by having us cut the tubing for you.

## Forming

An excellent alternative to the high cost of injection molded parts. Formed shapes can eliminate problems such as kinking and space constraints and often makes installation easier.

## Jacketing

If you want to route wire with your tubing or bundle a variety of tubes and wires together, ask us how we can help. For short lengths, we can pull the tubing and wire through the jacket material. For longer lengths we can extrude a jacket over the top.

## Packaging and Labeling

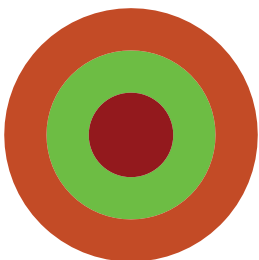
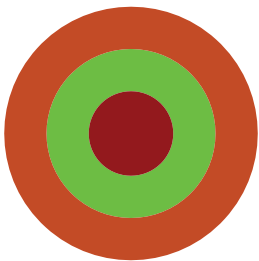
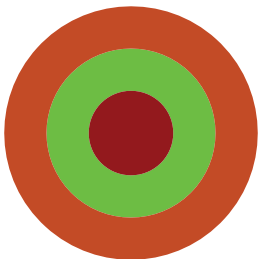
Our standard packaging process is to put short lengths in bags while longer lengths come on reels or in boxes. Other packaging options, custom reels, header cards and labels are available. Just ask!

## Printing

Freelin-Wade can print your custom specs on any order over 5,000 feet for free, or a nominal charge for smaller orders. The print is usually text but we also have graphics capabilities.

## Sizes

Don’t see the tube dimensions that you need? We have most dies already made, as well as an in-house die shop. We’re happy to extrude exactly the tube that you need.



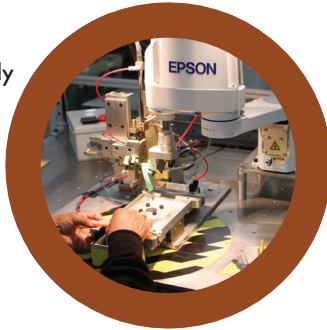
# Variation Lead Times

The majority of our catalog items are available for shipment within 24 hours of your order. Our general lead times for variations using stock tubing are:

- Coil variations - next day
- Cut lengths - 3 days
- Custom printing - 3 days
- Bonding variations - 2 weeks
- Custom extrusions - 3 weeks
- Forming - 2 weeks



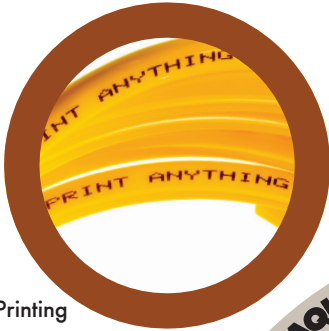
Assembly



Packaging



Printing



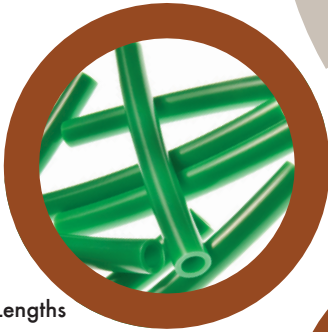
Bonding



Size



Cut Lengths



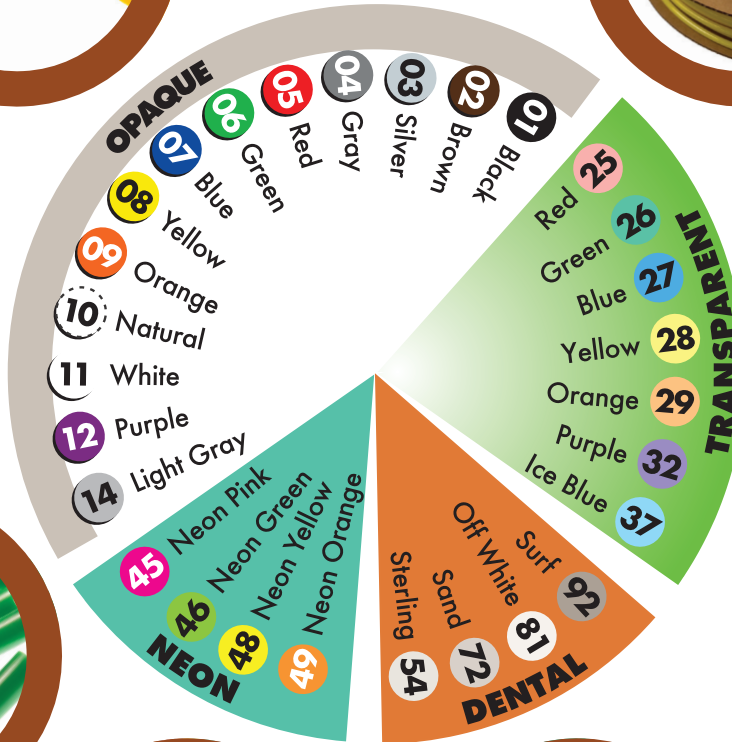
Formed



Colors



Coiling



# Off-Catalog Plastics

In addition to our standard stock, on a daily basis we work with 13 other resin formulas. If you are looking for something a bit different than our standard tubing resin, call us. We can provide you with a solution to meet your needs. Below is our list of non-catalog polymers, along with some of the properties of each:

**Nylon 11 - Semi-Rigid FDA:** FDA 21 CFR 177.1500(5.2). This is a Nylon 11 for contact with food.

**PEBAX:** This is a special nylon/polyurethane hybrid material.

**Polyester:** This rigid material has some properties that make it similar to Nylon.

**PUR 58D - F/R:** This is a fire-retardant grade of Polyurethane in 58D durometer.

**PUR 80A:** This material is stiffer than our 70A but more flexible than our 85A.

**PUR 80A - NSF:** This material is similar to the 80A but the resin complies with NSF 61 (potable water systems).

**PUR 80A - Medical:** This is a medical grade polyurethane.

**PUR 85A - F/R:** This is a fire-retardant grade of Polyurethane in 85A durometer.

**PUR 85A - Ester:** Our standard polyurethanes are Ether-based polymers. The Ester is slightly better at handling oil but degrades quickly if exposed to water.

**PUR 55D:** This Shore-D durometer polyurethane is significantly stiffer than our PUR 95A.

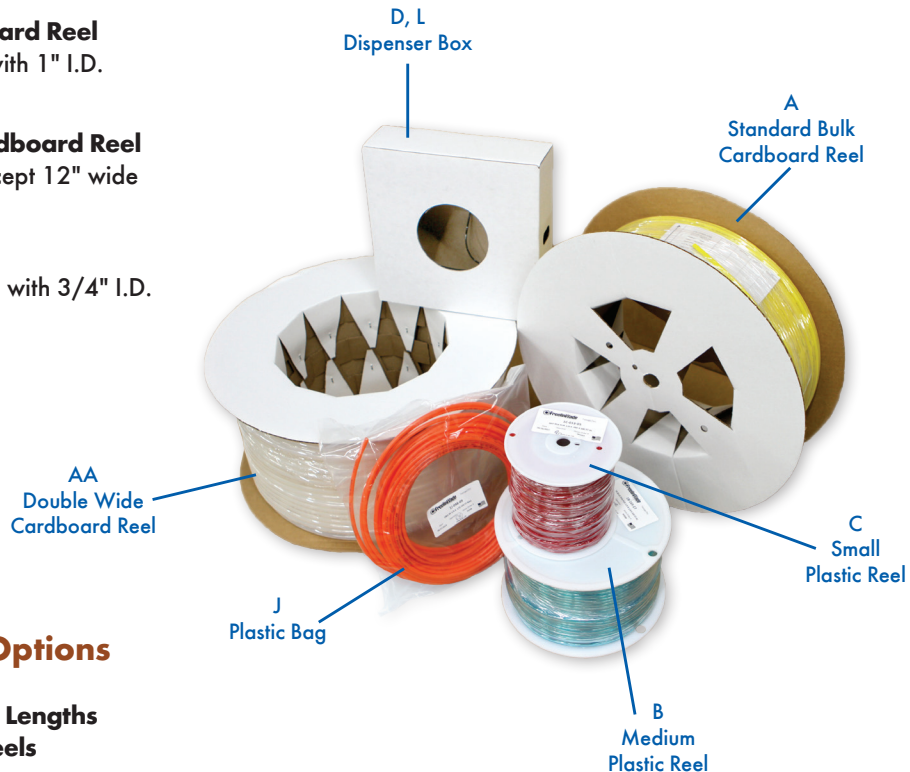
**PVC 65A, 70A, 85A:** These are non-phthalate PVC materials.

**PVC 85A Matte:** This is a non-glossy PVC material.

**TPE 80A:** A thermoplastic alternative to rubber.

## Standard Packaging Options

- A Standard Bulk Cardboard Reel**  
21" diameter x 6" wide with 1" I.D. center hub.
- AA Double Wide Bulk Cardboard Reel**  
Same size as "A" reel except 12" wide with an open hub.
- B Medium Plastic Reel**  
10.5" diameter x 6" wide with 3/4" I.D. center hub.
- C Small Plastic Reel**  
6.5" diameter x 6" wide with 3/4" I.D. center hub.
- D, L Dispenser Boxes**
- E Cut Lengths**
- J Plastic Bag**



## Custom Packaging Options

- Lazy Susan Bundles
- Plastic Reels for Longer Lengths
- Corrugated Plastic A Reels

# Formed Tubing Variations

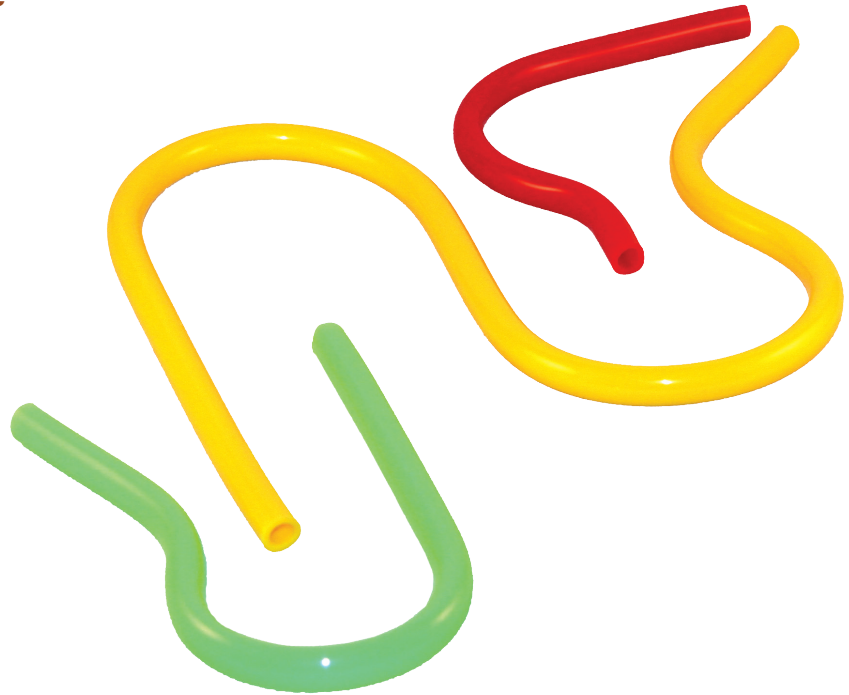
**A**n excellent alternative to the high cost of creating an injection molded part. Freelin-Wade can rapidly develop formed tubing and hose parts for your prototype or production needs. Formed shapes can eliminate problems such as kinking and space constraints and often makes installation easier.

**Some common requests we receive include:**

- **Elbows**
- **Curves**
- **Multiple Bends**

## Reasons to use a formed tube

- Reduced chance of machine down time due to kinking or improper assembly.
- Allows tube to be shaped very closely to be placed tightly within machine design requirements.
- Reduced assembly time, no measuring and cutting or associated potential errors.
- Uniform, professional appearance with a higher perceived value.
- Allows easy maintenance with factory formed parts, identifiable by part number.
- Allows very tight placement of components in an assembly with predictable results.
- Offered in 2-D configurations.



## Not Just our Green Tubing is Green

**A**t Freelin-Wade, reducing, recycling and reusing are ingrained into our culture.

**Office:** Employees recycle virtually all paper and other office waste. In addition, we continue to make strides toward going "paperless".

**Manufacturing:** We recycle our scrap in-house and throughout our operation. This dramatically cuts our waste and reduces our footprint on the environment.

Freelin-Wade utilizes mechanical and electronic filtering systems to remove oil particulates from smoke generated during production operations before exhausting to the atmosphere.

**Water Usage:** Freelin-Wade uses chilled filtered water to cool its extruded products. This water is recycled during the production process and then drained. Independent tests ensure that no contaminants are released.

**Chemicals:** Freelin-Wade recycles/destroys its machine oils & hazardous waste chemicals through licensed companies in accordance with EPA guidelines.

**Die Cleaning:** Freelin-Wade utilizes a high temperature, zero emission burn-off oven to remove plastic film left on tooling. This system eliminates any particulates entering the atmosphere.

**Contaminated Plastic Materials:** Freelin-Wade recycles waste plastic with licensed plastic recycling companies.

