



**A-Tech, Inc.,** is a distributor of industrial and process automation products including sensors, instrumentation, heaters and controls.

*Their field sales engineers and technical support associates provide assistance and support in solving their customer's most difficult problems through technical enhanced products, customized solutions, and service.*



## Silicone Case Study One: Solid Cording

A-Tech, Inc.'s representative is a regular visitor to the Alliance Production Plant. During one of his visits, he spoke with our engineer about our new silicone extrusion capabilities. He indicated that his company has a large market for silicone gripper cords. One client, a large food processor, has a consistent need for a silicone cord for use in processing chicken in their plant.

Alliance found that within their own production plant, they often use similar cording in their machinery. The engineers made a test batch and used them in-house to determine the quality and found that the gripper cords they produced were of a higher quality than those currently used. They then sent samples of these gripper cords to A-Tech to forward to their client.

The client was happy with the samples, and A-Tech has decided to fulfill the silicone gripper cord orders they receive with those produced by Alliance Rubber Company.

To learn more about other industries that have improved their work flow by using silicone extruded products offered by Alliance Rubber, please visit <https://rubberband.com/products/121/custom-extrusion>.

Or contact our experts directly by e-mailing [sales@alliance-rubber.com](mailto:sales@alliance-rubber.com).



**Lee Rubber Products,** an Alliance distributor, is a factory-direct discounter for all types of rubber bands. They work with band manufacturers to supply rubber bands at competitive prices directly to the customer.

They work with clients to solve problems and to determine just the right band for the application.

## Silicone Case Study Two: Flame Retardant Compounds

Lee Rubber contacted us on behalf of a manufacturing company that produces connectors, hand tools, testers, and meters for the electrical and telecommunications industries.

The client required that the band contain a formulation that met UL 94V-0. They also required a durometer of 35-40 Shore A, 300 psi minimum tensile strength, and 250% minimum elongation using this information.

Alliance engineers developed a compound material that would meet the client's requirements.

In-house tests for UL 94V-0 flammability compliance were performed on sample bands produced from the developed compound. It was determined that the bands were not affected in any way by a 2000° F direct flame. In addition, a blow-torch that could reach temperatures up to 6000° F was applied to the testing process. The compound bands would burn at these high temperatures but would self-extinguish when the torch was removed.

Once extruded, Alliance provided a sample to the client so they could run their own compliance testing.



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## Silicone Case Study Three: *Silicone Rubber Bands*

**Chemical Manufacturers** benefit from silicone products above other types of elastomers because silicone lasts longer and can stand up to a wider variety of environmental conditions.

Silicones used in industrial applications protect equipment from:

- Water damage
- UV damage
- Extreme heat
- Extreme cold
- Climate Changes
- Corrosion
- Chemicals and oils
- Microbes

Plus, silicones retain these properties over time so materials are less susceptible to damage from weathering, aging, temperature or climate fluctuations and normal wear and tear.



Alliance was contacted by a distributor on behalf of their client, a large chemical company in search of a silicone rubber band to act as a spacer on a roller functioning in a hot environment.

Engineers at the client's facility knew some, but not all of the specific traits of this particular band. They provided physical drawings, but those drawings only contained the dimensions and tolerances and stated that the bands were blue colored silicone with talc coating. They were very secretive regarding any process usage details.

To best meet the client's needs it was imperative that Alliance obtain the most specific guidelines possible. To achieve this, Alliance asked the client to send samples of the existing bands for further testing. To protect the client's manufacturing information Alliance signed a Confidentiality Disclosure Agreement.

From the samples received, Alliance was able to determine shore durometer or hardness of the material as 50 Shore A. Testing on FTIR equipment verified the bands were a silicone profile. Additionally, burn testing was performed to determine the heat tolerance level required in the finished product. Alliance's engineers were able to take information from the sample bands supplied and reverse engineer an exact band to meet the chemical company's needs.

Samples of Alliance's silicone rubber band were supplied to the potential customer and these are expected to be tested at the end of July or early August 2018.

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## Silicone Case Study Four: *Custom Silicone Tubing*

**Integrated Supply Company, LLC**, out of Missouri, primarily operates as an independently-owned distributor of industrial supplies, business forms, and both custom and stock packaging and paper supplies.

*They strive to be an integrated supply source for all materials in production, shipping, marketing, and administrative. They are also experienced in the retail and banking industries and serve businesses across Missouri, Illinois, Western Kentucky and Northern Arkansas.*



Integrated Supply Company contacted Alliance on behalf of one of their clients. They were made aware of Alliance's plans for silicone extrusion by the Alliance Sales Division in late 2017. When an opportunity for a silicone profile presented itself several months later, Integrated Supply reached out to obtain a quote.

The tubing that Integrated Supply's client used was constructed of peroxide cured, unreinforced white silicone with an inner diameter of 0.625", outer diameter of 0.750", wall thickness of 0.0625", Shore of 35A (+/-5), in 10" cut lengths to be packaged 120 pieces per bag.

The client uses these tubes to load explosives for mining. It was imperative that the client have a product that could fit these specifications and could be produced on a consistent basis.

Manufacturing confirmed that the tubing could be produced and a final sales quote was sent within two business days after receiving the specifications. Alliance's quote turn around was quick due to the thorough information received.

After receiving the quote, the client requested a sample of the product, and the samples were produced and forwarded.

The sample sent had talc which the potential customer did not like initially. However, shortly following their original reaction the weather became hot and the tubing they were currently using started sticking together. They decided they had renewed interest in talc on the profile.

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### **Bunzl Distribution**

**USA, inc.** supplies a range of products including out-sourced food packaging, disposable supplies, and cleaning and safety products to food processors, super-markets, non-food retailers, convenience stores and other users.

Based in St. Louis, Missouri, Bunzl Distribution is the largest division of Bunzl plc., an international distribution and outsourcing group headquartered in London.



## **Silicone Case Study Five: Beef Processing Stomach Bands**

Bunzl Distribution contacted Alliance on behalf of one of their clients, a large meat packing plant. Bunzl has a long term business relationship with Alliance Rubber which resulted in a call to see if we could produce a silicone band for their client.

The current rubber bands used by the meat packing plant were #14 and #30 standard rubber bands. The stomach and innards were contained in a bag cinched by the bands. The bands would often malfunction causing unnecessary delays in processing. The bands would come loose allowing the bag contents to spill into the carcass which could contaminate the beef. The customer wanted to achieve the following: 1 band to replace the 2 they were using; and a silicone band as opposed to rubber. The customer selected 2 1/2" x 1/16" as the dimensions they wanted for the new bands.

We did make some assumptions that they wanted silicone for its strength, longevity, and the non-latex for direct food content attributes. Rubber bands do not maintain their tight hold in a refrigerated environment.

Alliance determined the specifications required to meet the customer's needs - a band with a tighter grip and less stretch could best be achieved using a silicone compound.

The samples were sent via Bunzl to their customer to test.

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**This distributor** supplies machines, control systems and replacement parts for many applications for the packaging, metal working and material handling industries.

## Silicone Case Study Six: Solid Tubing

This distributor requested we provide samples for their customer of silicone conduit tubing. Based on the samples provided our team performed some reverse engineering and presented Word with 3 options:

1. Blue, closed cell, foam tubing with a 70 Shore A durometer.
2. Solid blue tubing with a 65 Shore A durometer.
3. Solid white tubing with a softer 50 Shore A durometer.

They chose and are purchasing option 2.



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