



ARGONICS
ENGINEERED POLYURETHANE

Installation Guide for



Polyurethane Liners

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FOREWORD

Argonics Polyurethane lining material is designed to extend the wear life and reduce the maintenance requirements of your process equipment.

This manual contains important information regarding polyurethane material. It includes hazards that might exist and precautions to be taken during the installation or removal of these lining systems.

POLYURETHANE WEAR PRODUCT

This product will emit fumes when overheated!

This product does not present any health hazards in the state it is shipped. However, subsequent operations such as welding, grinding, cutting, etc. may produce dusts, polymer decomposition by-products and metal fumes.

Dusts and fumes may be irritating to eyes and respiratory tract. Dusts may be flammable. Provide adequate ventilation and follow all installation instructions.

Store away from flame or other sources of ignition. Must be protected from heat and sparks generated by welding or cutting torches. Hazardous decomposition by-products include: carbon monoxide, carbon dioxide, hydrogen cyanide, nitrogen oxides, miscellaneous hydrocarbons and polymer fragments, metal fumes and oxides.

Cutting Techniques

If necessary, the polyurethane liners can be cut using either a band saw, heavy-duty jigsaw or reciprocating saw.

Plain urethane sheets and liners:

If cutting with a band, jig or reciprocating saw use a course tooth blade. You may also use a utility knife. Bending the liner section over a board will help increase the surface tension and make the cut a little easier.

When cutting expanded metal backed liners, use a fine tooth blade.

No matter what type of saw you choose to cut the liner, advance the blade slowly, run at lower RPMs, and spray a lubricant in the cut path to minimize friction and heat build-up.

NOTE: Do not use a circular saw to cut polyurethane liners, as they will generate too much heat, causing gumming of the blade.

Drilling Techniques

Drilling is best done using a ½" high torque drill. The bit should be a spade or fluted style (standard bit), and a low RPM should be used. Allow time between boreholes for the bit to cool, if necessary. Spraying the hole with water or other lubricant will also improve boring.

Bolting Techniques

The best technique for bolting a polyurethane liner is by using the Argonics urethane coated bolt. The optimum installation would be to countersink the urethane liner the same thickness as the head on the coated bolt.

NOTE: If you choose to use plain elevator bolts or carriage bolts, it is advisable to keep them out of the material flow path. If that is unavoidable, countersink the bolthole and cover the bolt head with a polyurethane-based or silicone caulk.

Using the Argonics Counter Bore Tool

The Argonics counter bore tool is specifically designed to work in conjunction with the Argonics urethane coated bolts.

1. Determine the desired depth of the counter bore hole needed in the urethane liner section.
2. Loosen the stop collar on the counter bore tool with an Allen wrench. Slide the stop to the desired depth and retighten.

As a general rule of thumb, counter bore depth for a plain-backed urethane sheet should be set to three-quarters the thickness of the liner that you are installing.

If bolting a liner that has a solid or expanded metal insert, it is okay to counter bore down to the metal.

Coated bolt spacing along the edge of the liner should be 6-8" O.C. and approximately 18" O.C. throughout the rest of the liner.

Gluing Techniques

There are a variety of excellent adhesives that are specifically designed for attaching rubber or polyurethane to a metal substrate. Follow the guidelines that are prescribed by the manufacturer of the adhesive.

Bostic 1100 polyurethane adhesive

For smaller jobs we recommend using Bostic 1100. Bostic 1100 has a 100-minute cure time, which is an advantage when compared to other adhesives.

Make sure that the substrate is free of debris and other contaminants by cleaning with a solvent. Then abrade the metal and clean again, to ensure maximum adhesion.

Apply a ¼" to ⅜" bead of Bostic 1100 ½" from the edge, around the perimeter of the liner section. Then apply an "X" pattern in the center of the liner and other beads between the lines of the "X" as necessary. Clamp the edges and seams down using a 2x4 or plywood to prevent curling of the liner edges.

Sealing Gaps

After your liner is in place and securely fastened, inspect the installation to identify if there are any gaps. Caulk any gaps that appear between the liner segments. Be sure to force the caulking compound as deeply into the gap as possible. Argonics recommends Bostic 1100 fast set adhesive. Bostic 1100 is a polyurethane-based caulk with a 100-minute cure time. If this is not available, pure silicone caulk can be used.

Proper Care and Maintenance

The purchase of this liner is a substantial investment. Maximum cost-effective performance can be reached through proper care and maintenance. The following tips should be observed:

Storage

If the liner will be out of service or in storage and waiting to be installed for long periods of time, protect it from the elements. Prolonged solar heat can cause thermal decomposition and stagnant water may promote hydrolysis, both of which can degrade liner performance over time.

Gouges or Tears

If a gouge or tear occurs, a polyurethane-based caulking adhesive can be used to fill holes or fix damaged areas. The affected area should be cleaned, dried, stripped of grease or other contaminants, and patched. This should be done as soon as possible to retard the size of the tear.

Seam Care

Seams are generally the most susceptible areas. If material penetration starts to cause problems along a liner seam, damage can quickly spread. Seams should be inspected often, and resealed or repaired as required.