

WHY USE THERMOSET URETHANES?

Performance

Abrasion Resistance
Toughness
Tear Resistance
Load-bearing Ability

Cost Effectiveness

Lessen down time in process operations
Lower tooling and equipment costs for small production runs



WHY USE URETHANE INSTEAD OF OTHER MATERIALS?

URETHANE VS.	METAL	PLASTIC	RUBBER
ADVANTAGE	LIGHTER WEIGHT	NON-BRITTLE	RESISTS ABRASION
	LESS NOISE	ELASTOMERIC MEMORY	CUT AND TEAR RESISTANCE
	BETTER WEAR	RESISTS ABRASION	HIGHER LOAD BEARING
	CHEAPER TO MAKE		CLARITY/TRANSLUCENCE
	RESISTS CORROSION		OZONE RESISTANCE CRACKING
			POURABLE/CASTABLE
			HARDER DUROMETER RANGE
DISADVANTAGE	STRENGTH	COST	COST
	RIGIDITY	RANGE OF USES	RANGE OF USES
	ENVIRONMENT	TEMPERATURE	TEMPERATURE
		ENVIRONMENT	FLEXIBILITY



Solutions . . . in Roller/Wheel Recovering

quality control guarantees . . .

- ◆ consistent, reliable quality in all roller and wheel recovering urethane
- ◆ selecting and processing material carefully
- ◆ superior performance and durability
- ◆ precision grind to close

 can formulate and produce just about any size or kind of roller recovering, beginning with the smallest wheels and extending up to rolls 24" in diameter and 300" long, or 52" in diameter and 180" long. And we can consistently deliver on schedule and at a price that helps keep you profitable.

Applications:

- ◆ Corrugated Feed Rolls
- ◆ V Rolls
- ◆ Clipper Rollers
- ◆ Coater Rollers
- ◆ Drive Rollers
- ◆ Paint Rollers
- ◆ Idler Rollers
- ◆ Sander Rollers
- ◆ Pulley Wheels
- ◆ Coaster Wheels
- ◆ Amusement Park Ride Wheels
- ◆ Laundry Dryer Wheels
- ◆ Crane Wheels
- ◆ Textile Rolls
- ◆ Bridal Rolls

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DIAMONDBACK® URETHANE PRODUCTS

A PRACTICAL APPROACH TO ABRASION RESISTANCE

WHERE TO USE DIAMONDBACK®

The following are applications in which Diamondback® has been successfully used. If your particular application is not listed, please contact our Sales Department for technical assistance.

Grain Industry – Areas of the bucket elevator including head section, distributors, transitions, elbows, spouts and chutes, and screw conveyors.

Mining and Related – Spouts and chutes, elbows, bins and hoppers, belt scrapers, noise and vibration dampening, feed boxes, classifier shoes, perforated particle sizing screens, and skirt boards.

Concrete – Lining of central batch mixers and blades.

Foundry Castings – Lining of vibratory trough for deburring of parts. Sandblast and shotblast curtains.

Note: Diamondback® is not recommended for use in areas with a vertical incline of less than 10° or areas with constant temperatures of 180° F (82° C) or greater.

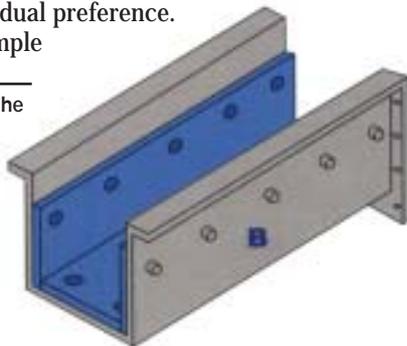
HOW TO INSTALL FLAT DIAMONDBACK® SHEET AND PADS.

Diamondback® sheet is available with expanded metal backing, Slotback™ metal backing, cotton fabric backing and non-reinforced, with no backing.

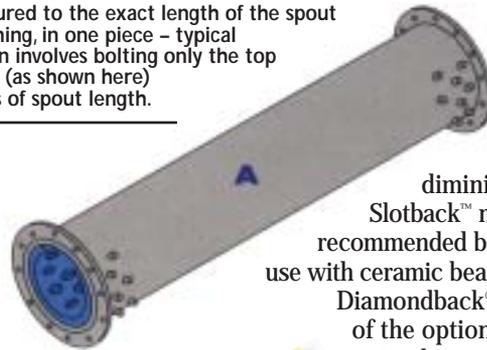
Generally speaking, the type of backing is a matter of individual preference. In thinner sections, for example

In square or rectangular chutes the entire bottom should be lined, as well as 75-80% of the side walls – side walls should be lined first, bottom last.

3/16"-1/2" (4.8mm-12.7mm) thick, many users opt for expanded metal back or Slotback™ metal back because the metal adds rigidity to the urethane, allowing it to lay flatter when installed. The metal backing also allows mechanical forming of the fabricated pieces. As the thickness increases, the need for metal backing, in many cases,

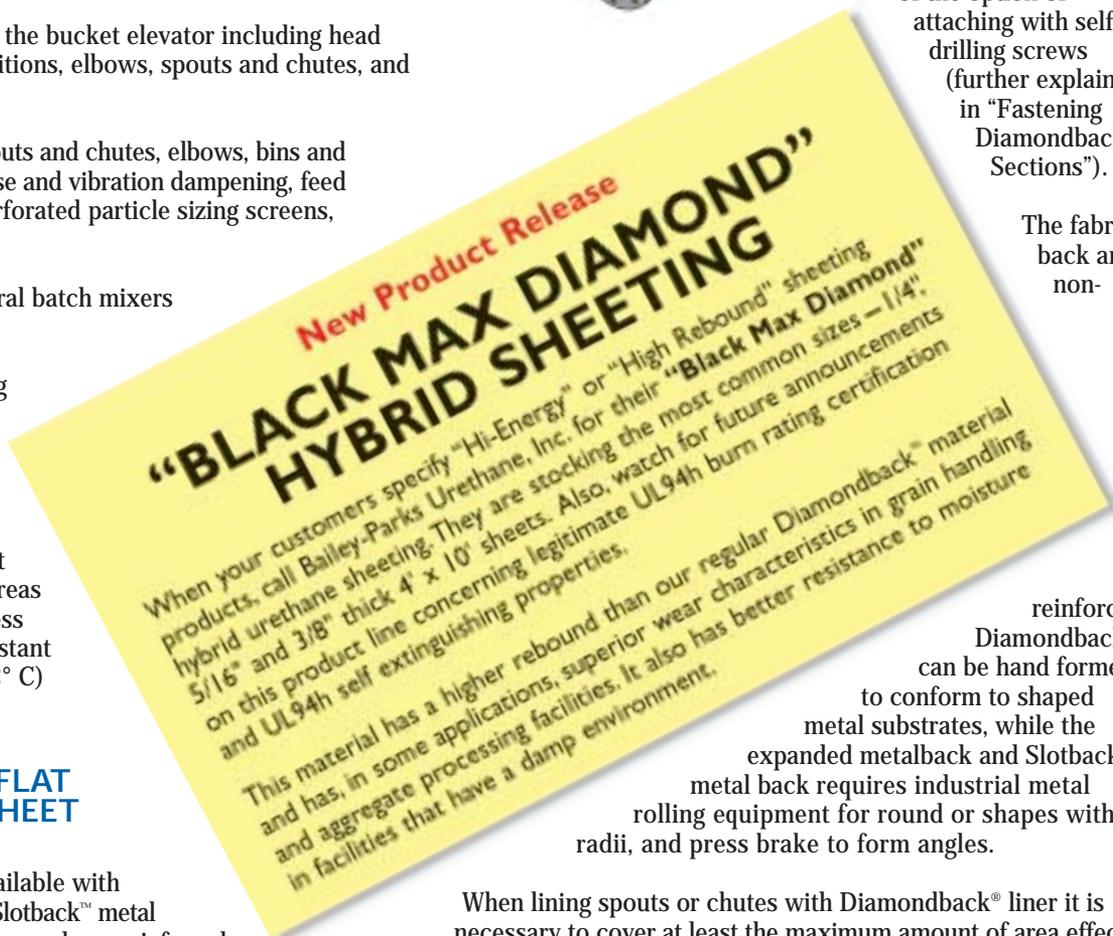


Long, continuous runs of Diamondback® can be manufactured to the exact length of the spout you are lining, in one piece – typical installation involves bolting only the top & bottom (as shown here) regardless of spout length.



diminishes. Slotback™ metal is the recommended backing for use with ceramic bead Diamondback® because of the option of attaching with self drilling screws (further explained in "Fastening Diamondback® Sections").

The fabric back and non-



reinforced Diamondback® can be hand formed to conform to shaped metal substrates, while the expanded metalback and Slotback™ metal back requires industrial metal rolling equipment for round or shapes with radii, and press brake to form angles.

When lining spouts or chutes with Diamondback® liner it is necessary to cover at least the maximum amount of area effected by abrasion. Generally speaking round spout is lined to cover 80 percent of its inside circumference. (Diagram A) In square or rectangular chutes the entire bottom should be lined as well as 75 to 80 percent of the side walls. (Diagram B)

CUTTING DIAMONDBACK®

Expanded metal backed and Slotback™ metal backed Diamondback® are most effectively cut by means of a metal cutting shear, either the electric or hydraulic type, rated minimum, for 1/4" (6.4 mm) mild steel plate. Pressures and speeds should be the same as the recommendations for steel plate. Diamondback® should be sheared with the metal side up. Metal backed Diamondback® can also be cut using a table top band saw. A standard coarse tooth (4 to 5 teeth per 1"[2.5 cm]) blade, run at 1500-2000 RPM is recommended. Do not use a circular saw as friction produced by cutting will cause gumming of the blade possibly ruining your saw.

In addition to the cutting methods mentioned above, fabric backed and non-reinforced Diamondback® can also be cut with a box

board cutter or a rotary slitter with a lubricant feed to cool the blade.

Ceramic bead impregnated Diamondback®, because of the hardness of ceramic, is extremely difficult to saw, requiring special diamond tipped blades. Even with these blades it is a slow and tedious process.

The best cutting method to date is with a hydraulic shear, rated for 3/8" (9.5 mm) mild steel plate or a scissor type Beverly shear. Using an electric shear is not recommended as many have a faster cutting stroke and are more likely to hang up, possibly damaging the blade.

DRILLING DIAMONDBACK®

Diamondback® can be easily drilled with either two or three flute metal drilling bits, either high speed or carbon. Frequent lubrication with kerosene or cutting oil is recommended.

Drilling through ceramic bead impregnated Diamondback® is possible by using a carbide tipped bit, but countersinking is virtually impossible.

FASTENING DIAMONDBACK®

Diamondback®, with all types of backing, is most commonly fastened by means of bolting. Flat head elevator bolts or Bailey-Parks Wedgie Bolts® are recommended. Spacing of the bolts is normally determined by the thickness of the sheet, the type backing and design of the substrate to which it is fastened. As a general rule of thumb, spacing is 1-1/2" to 2" (3.8 cm-5 cm) centers from the edge of the sheet, with 6"-18" (5 cm-45 cm) center to center spacing throughout sheet. Again, the center to center spacing is determined by the thickness, and also the type backing. 1/4" (6.4 mm) thick expanded metal back can be fastened on 8" (20 cm) centers in a flat section, 1/2" (12.7 mm) thick on 10" (25 cm) centers. The same thickness with no backing should be installed, respectively, on 6" (15 cm) and 8" (20 cm) centers. In sections with radii, more bolts are normally needed.

Alternatives to this type fastening are gluing, with fabric back, and self-drilling metal screws with Slotback™ metal back.

When gluing fabric backed Diamondback®, you must completely clean and degrease the surface to which you are bonding. Normally this requires sandblasting, then cleaning with an industrial solvent such as methyl ethyl ketone or acetone. Most good high quality contact cements will do a good job, provided instructions are properly followed. Always refer to the solvent and/or cement manufacturer's MSDS before using.

Slotback™ metal back Diamondback® can be fastened to metal substrates by using self drilling metal screws. To do this a pilot hole must be drilled through the metal substrates and the Diamondback®. The self drilling metal screw is then started through the back of the metal substrate, and up through the back of the Diamondback® sheet. With this method the Diamondback® sheet is pulled down from the bottom, rather than pushed down from the top, as with a bolt. Center to center spacing is normally 1"-2" (2.5 cm-5 cm) closer than with bolts. This is an especially effective means of installing ceramic bead Diamondback® with Slotback™ metal backing.

For information not covered in this bulletin, please contact our sales office.

Typical Urethane Project

Application: Review the overall customer needs regarding product impact and sliding abrasion problem(s), volume per year, product handled, and temperature requirements. Select the proper urethane thickness to provide the customer the best wearability for his application and budget.

Urethane Backing: The correct backing is very important for the in success of the liner life. The equipment being lined should be reviewed per flatness, irregular contours, and desired fastening method.

Installation: The preferred fastening method determines the backing required as follows:

Backing	Fasteners
Fabric	Glue / Bolt
Expanded Metal	Bolt
Slot Back™	Self tapping metal screws through the backside.

Ceramic / Embedded in Urethane

Application: Soybean processing and high volume terminals are areas for usage of ceramic bead w/urethane. Better life expectancy of 3 to 4 times have been reported by customers versus straight urethane.

Installation: Similar methods are available per the bolting of standard urethane.

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