



UHMW – transporting the heavy-duty materials

PLASTICS IN
TRANSPORTATION

by Tim Brown

When it comes to transporting heavy-duty, abrasive materials such as coal, limestone, gravel, sand, asphalt, phosphates, salt and even quarry materials — UHMW (ultra high molecular weight polyethylene) bedliners have proven their worth and durability for years. UHMW lining systems significantly outlast aluminum and steel floors in most applications, protecting them at the same time. Wet, sticky and even frozen materials dump easier and with a lower dump height. These advantages provide safer and more productive hauling with more fully dumped loads per day, translating into increased revenue for the owner.

Today's dump truck liners have evolved considerably with the availability of new sheet sizes, special grades and improved fastening systems.

Generally, 4 feet x 10 feet sheets are fusion welded into a one-piece, drop-in liner that can be rolled into a manageable coil for easy shipment. The most common thicknesses used are 3/8" and 1/2", with 1/4" chosen for the less abrasive materials. The sheets are butt-fusion welded and fabricated to fit the exact dimensions of the bed — whether 16 feet or 40 feet in length. Liners for the sidewalls and bulkhead are usually optional.

The biggest and most recent development in this industry is the availability of a new compression-molded UHMW

sheet that measures an incredible 8 feet by 20 feet. These large sheets greatly reduce, or even eliminate the weld seams. The overall cost to fabricate the liner is improved by reducing the labor time, and with fewer weld seams there is less risk of a break or crack.

Natural UHMW is well known for its abrasion resistance, impact strength and self-lubricating properties, which makes it easy to see why its two primary markets are unit (conveyor) and bulk material handling. Although standard and re-processed grades are still widely used as bedliners, special premium grades continue to prove their effectiveness. Additives such as silicone and U.V. stabilizers can be blended into the sheet in the manufacturing process to enhance a desired property.

One of the premium grades that has become very popular is a heat-stabilized version. Often called "asphalt grade," it includes special additives that allow the UHMW liner to operate in temperatures as high as 350°F (176°C). The limitations of the polymer itself could not withstand the hot asphalt continuously, but due to the typical time involved in loading and transporting the asphalt to a job site, it works exceptionally well. Once the asphalt is dumped, the liner can air-cool as the truck returns for another load.

With the availability of larger sheets and larger butt-welders, liner fastening systems have improved as well. Weld washers and plugs are still widely used, especially in off-road trucks which often require multiple-piece liners because of the slopes and angles of their floors. However one-piece liners can be simply rolled out into the bed and held in place with cover strips on the sides, allowing the UHMW to expand and contract easily without buckling as it is exposed to varying temperatures. Mechanical fasteners are usually required around the bulkhead to further hold the liner in place and to keep materials from getting between the liner and the body.



Röchling's Polystone® M Premium Grade bedliners excel in hauling the toughest materials.

Dump trucks and trailers operate in all parts of the world and in numerous industries; in mining, construction, sand and gravel, landscaping, waste disposal, paving, agriculture and almost any other area where bulk material must be moved. From independent owners and operators to large fleet managers, UHMW bedliners provide them with a quick return on their investment. Once they experience the advantages of these liners, they never want to haul materials without them.

The national sales manager from one of the country's leading bedliner specialists and fabricators states, "The growing technology of UHMW liners has significantly impacted the sales of truck body liners. Customers are realizing the benefits. The longer life, better release properties and the competitive price makes it an easy decision for the customer. UHMW liners will have a definitive place in the dump truck market for many years to come."



Röchling Engineering Plastics' MegaSheet™ significantly reduces weld seams. MegaSheet™ is a compression-molded UHMW sheet that measures an incredible 8 feet by 20 feet.

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