

Lining system from pros for pros for optimal conveyance of bulk materials

The Flex Cover product line made of PE-UHMW is one of the “engineering plastics” and embodies a number of advantages in order to prevent friction, wear, and material flow problems. The lowest surface friction, above average wear resistance, no moisture absorption at all, outstanding chemical resistance, and corrosion prevention as well as a low weight are this product line’s key characteristics. The Flex Cover materials are also environmentally friendly because they can be recycled.



Flex Cover lining systems were developed in cooperation with the international industry on all continents, and they have proven themselves in demanding use. Whether as linings for truck and railroad car cargo troughs, silo facilities, vibrating conveyor troughs, or slides and screw conveyors. For all applications with bulk materials, such as stones, ores, coal, cement, asphalt or food, there is a compatible model to replace steel. The base material, high-purity PE-UHMW (ultra-high molecular weight polyethylene), can be modified with additives to suit the customer’s requirements. A specific weight eight times lower than steel increases significantly such factors as a dump truck’s maximum loading charge.

Application areas

- › Truck cargo troughs
- › Charging hoppers
- › Bunkers
- › Containers
- › Bucket wheel excavators
- › Transfer stations
- › Wheel loaders
- › Silos
- › Belt scrapers
- › Trough chain conveyors
- › Railroad cars
- › Agricultural technology
- › Mining
- › Transport/logistics
- › Disposal
- › Cement/lime/gypsum industry
- › Power supply
- › Ceramic industry and glass industry
- › Construction, stones, soil
- › Agriculture
- › Nutrition and pharmaceutical industry
- › Other industries that process bulk materials

Materials in the Flex Cover product line

Flex 11 in its purest form of PE-UHMW is the basic variant for transporting difficult bulk materials. Without any additive, developed especially for the food industry according (EU) No.10/2011 with FSP certificate (Food Secure Product), it is available in standard colors natural, green and black and also in various RAL colors as well.

Flex Line in mint green is an advanced development of the Flex 11 basic variant and has been particularly successful in mining. It is also available as a special version with anti-static or flame-retarding properties. Most of the applications have been very successfully used for railroad car linings. Due to the low specific weight, each car can transport up to 10 metric tons more material.

Flex Protect features with improved wear resistance due to its increased molecular weight and has a rubber coating on one side. The rubber coating absorbs vibrations and expansion, and features noise reduction and increased impact absorption. It is relatively simple to glue it to steel bodies, which eliminates cost-intensive screwing. We are happy to pass on the appropriate installation instructions.

Flex 77 offers the right basis for hot bulk materials such as asphalt. Special additives allow permanent temperatures up to 110 °C (230 °F). According to the FDA, this material can also be used for the food and agriculture industries. Thanks to its “cross-link” properties, Flex 77 additionally ensures increased impact resistance and outstanding sliding properties.

Flex 88 is modified with a very wide range of microsilica. A special admixture lengthens the molecular chains several times over and consequently increases the wear characteristic. Additional additives significantly improve the bulk material’s gliding and sliding behavior.

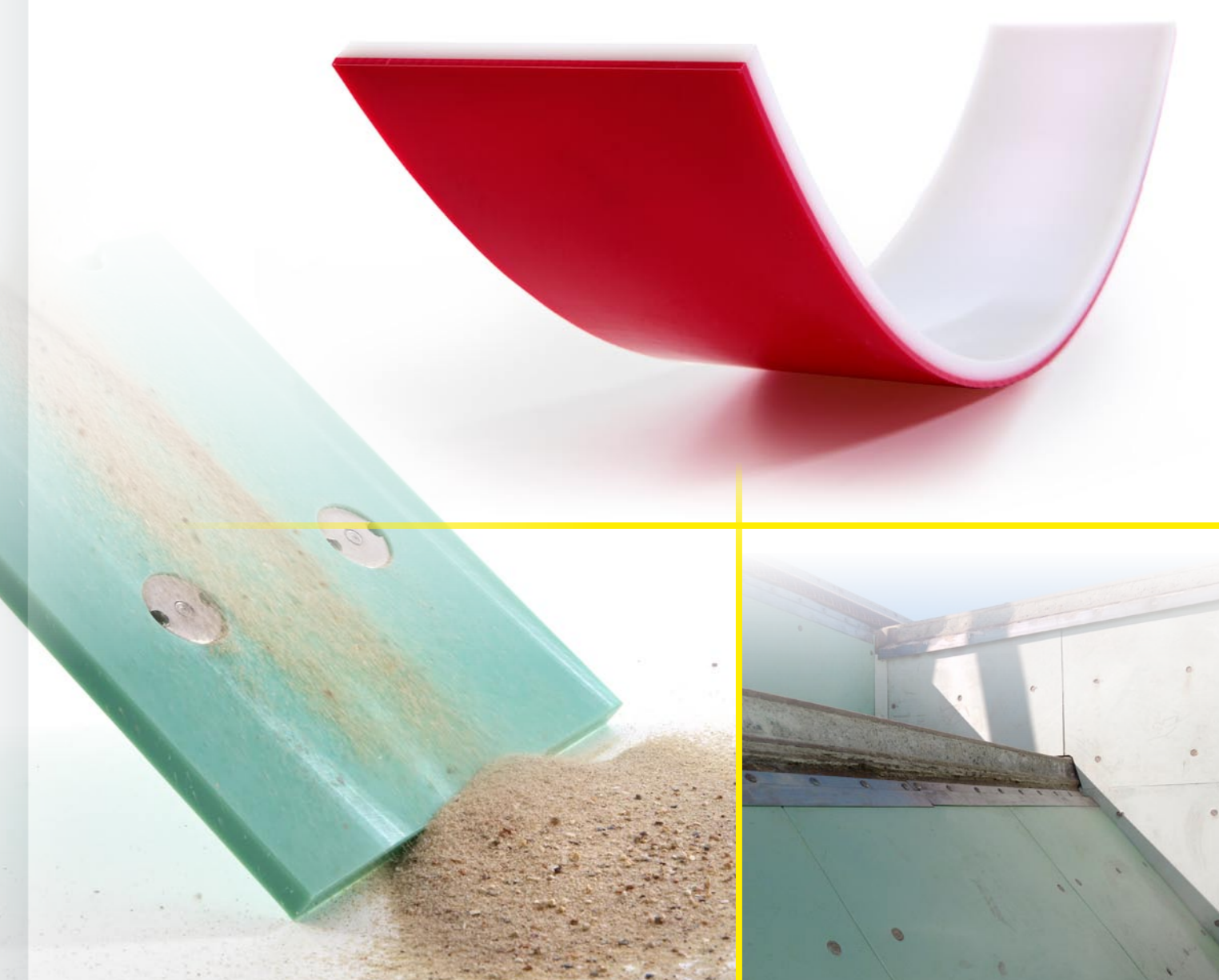
Cera Flex offers a persuasive price-performance ratio and good wear and sliding properties. Application areas are, for example, undemanding bulk materials such as normal soil (sand/peat), as well as coal or wood shavings. Particularly suitable for lining containers or screw conveyors for biogas plants, because of its outstanding bending characteristic it is also an economical alternative.

Flex Wear is a two-color solution that directly shows the wear. As a rule, we use a color combination where white is the wear dimension and red (≥ 4 mm) is the indicator. The result is a visual wear indicator that shows if the lining should be replaced at the next standstill. These products are most particularly suitable for use in screw and trough chain conveyors.

Flex-Cover material characteristics

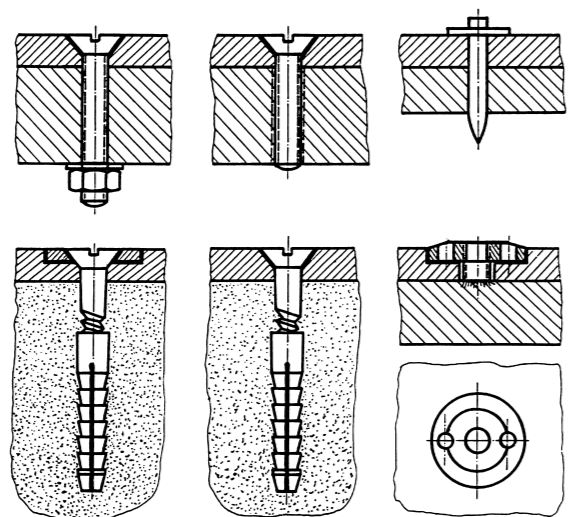
Material	Wear resistance	Impact strength	Sliding properties	UV resistance	Anti-static	Operating temperature °C	Operating temperature short-term °C
Flex 11	+++	++++	++++	+	no	-250° to +80°	-250° to +105°
Flex Line	+++	++++	++++	++	optional	-250° to +80°	-250° to +105°
Flex Protect	+++	++++	++++	+++	no	-250° to +80°	-250° to +105°
Flex 77	+++	+++	++++	++	no	-250° to +110°	-250° to +135°
Flex 88	++++	++++	+++	++	no	-250° to +80°	-250° to +105°
Cera Flex	+++	+++	+++	++	no	-250° to +80°	-250° to +105°
Flex Wear	++++	++++	++++	+	no	-250° to +80°	-250° to +105°

++++ very good +++ good ++ satisfactory + sufficient



Mounting systems and installation methods

The optimum solution for your application area requires the interaction of all components, a single unit formed by material selection, installation method, mounting method, and sealing of abutting edges. It is fundamentally possible to mount the plastic sheeting in different ways. In steel elements, threaded, welded bolts are usually used for mounting, while in reinforced concrete bunkers, countersunk screws with expansion anchors are usually chosen. Flex Protect can be bonded by using the one-sided rubber coating.



Examples of different mounting methods with countersunk screws, bolts, anchors, threaded bolts with washers, etc.



FLEX cover

Years of experience meet the most modern technology

Wefapress has decades of experience in linings. As the first manufacturer of PE-UHMW plastic sheet in Europe, we already started gaining basic installation experience in 1958. Around 1975, the possibilities of lining complete truck cargo troughs with sheet material were recognized. Wefapress has modern, demanding CAD systems that show customers designs for plastic sheet suitable for their objects. Upon request, the sheet material can also be appropriately milled and pre-drilled for the construction site. This service enormously simplifies assembly at the site.

Execution and selection of the lining

As a rule, the sheets are between 10 and 15 mm thick. In special cases, thicknesses up to 40 mm can also be advisable. The plastic sheet selection is based on criteria such as bulk material, flowability, particle size, moisture content and also the design of the funnel shape.

FlexCover panels are available in different sheet sizes and as a rule, are delivered with one side planed.

FLEX 11

FLEX 77

FLEX 88

FLEX line

FLEX protect

FLEX wear

cera flex

FLEX cover



Lining system for bulk materials

Do you have any questions?
Then talk to us!

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Flex Cover