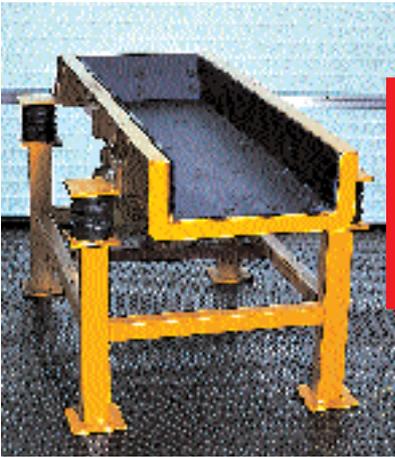




Rhino Hyde® Wear Protection for the Bulk Goods Industry



ARTHUR KRÜGER
Technik in Kunststoff



With Rhino Hyde® against abrasion and wear

When abrasive, aggressive bulk goods such as grain, glass, concrete or scrap metal are transported by scratching, scraping and grinding their way over screw-conveyor troughs, shakers, chutes, slides, through pipes and funnels or are moved in mixers, then huge problems are a foregone conclusion.

Everyday work in the bulk goods industry in particular makes this point perfectly clear with exceptionally high abrasion, extreme wear, and adhesion of the bulk goods.

Cost factor – high abrasion

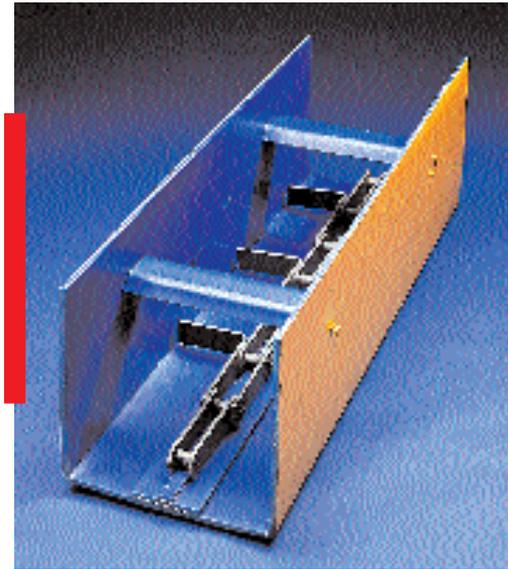
The consequences are obvious. System parts – some difficult to reach – must be replaced, modified or cleaned. Precious time is lost, and additional costs are caused by loss of production.

Long service life thanks to Rhino Hyde

In future rely on the “thick skin” of Rhino Hyde, a material that is up to 20 times more resistant to abrasion than steel and significantly extends the service life of your equipment systems.

As a specialist firm for “engineering in plastics”, we, the company ARTHUR KRÜGER, have become specialised in the development of effective wear protection solutions.

Our recipe: high-level competence, latest know-how, and more than 20 years of experience in the application of Rhino Hyde.



Lining of a chain conveyor with Rhino Hyde

Carrier shoe for use in chain conveyors

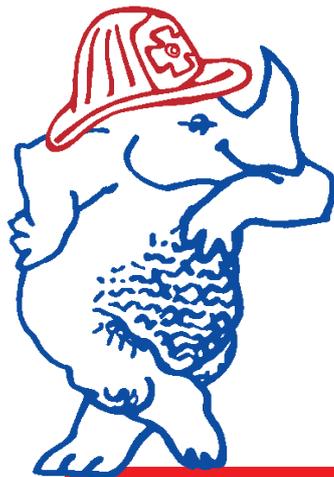


On the road to success for more than 20 years. Now new in our product range: Rhino Hyde® Fire Fighter (FF)

The high abrasion resistance of Rhino Hyde alone is a clear argument for the use of this unusual plastic.

Rhino Hyde – tough, durable, and much more

Rhino Hyde has more to offer than only abrasion resistance. Other advantages are: this material is extremely sound-proofing, shock-absorbing, product-protecting, food-safe, minimally adhesive, light, antistatic, largely acid-resistant and alkali-resistant, cut-resistant, and cold-deformable.



New: Rhino Hyde® Fire Fighter (FF)

The Rhino Hyde delivery programme was extended to include the "Fire Fighter" (FF) quality. This new product from the Rhino Hyde family features all the properties of the previously available Rhino Hyde product types. However, in the case of Rhino Hyde Fire Fighter (FF), the following product properties, among others, have been added:

- ▶ an exclusively patented fire resistance
- ▶ Rhino Hyde Fire Fighter (FF) is self-extinguishing
- ▶ the continuous service temperature is 80°C

Best practical experiences

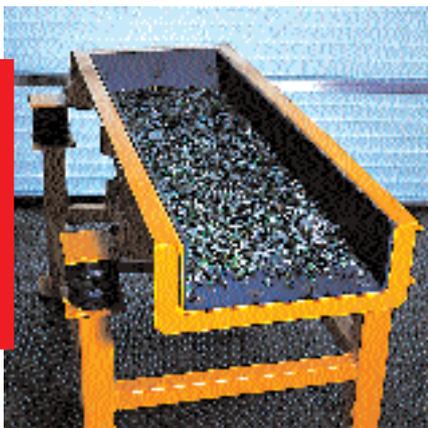
For more than 20 years, Rhino Hyde® has been used very successfully in the following branches of industry:

- ▶ for silo and storage businesses
- ▶ in sand, gravel, limestone and ore extraction as well as in concrete production
- ▶ in the coal industry, in ash and slag processing
- ▶ in the glass industry and recycling branch
- ▶ for owner-operators of blasting chambers
- ▶ in sewage plants
- ▶ in punching shops, etc.

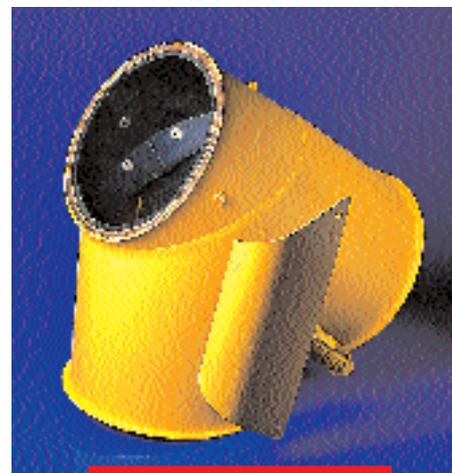
Application examples

Elevators, silos, funnels, slides, conveying pipes, tipping bins, segments, pipe bends, chain conveyors, screw conveyors, bunkers, mixers, vibrating chutes, etc.

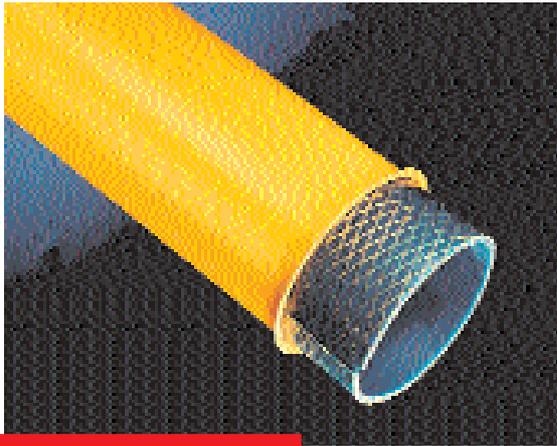
Vibrating chute: sides and bottom well protected with Rhino Hyde



Tipping bin: lined with Rhino Hyde



Customised wear protection – from ARTHUR KRÜGER



Rounded Rhino Hyde lining (type SB with expanded metal)

With Rhino Hyde® we deliver the optimum wear protection material. In addition to that, we develop very individual problem-resolving proposals based on your requirements. After your OK, the lining parts for your system are manufactured.

Almost everything is possible: from bending to cutting to size
Rhino Hyde makes work easy for us. The toughness of this material is paired with good formability and variety of processing possibilities.

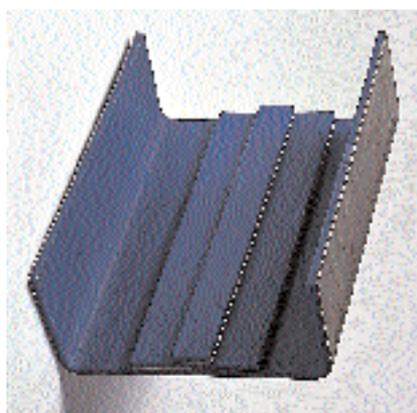
▶ Cutting to size: the plates can be cut with guillotine/sheet shears or a jigsaw as well as by means of a laser (type SM) and water jet. Never cut with a disc grinder (angle grinder)!

- ▶ Rounding: plates can be rounded the same way as metal plates. Smallest possible diameter: 120 mm
- ▶ Bending: possible up to an angle of 90°.
- ▶ Screwing together: For the assembly work, bucket or elevator screws and hexagon nuts M8 pursuant to DIN 15237 are used.
- ▶ Gluing together: type FB (cotton fabric back). Adhesive – epoxy adhesive, e.g. Araldit AW 106 with hardener HV 953 U.



Easy to deform and process in many ways: Rhino Hyde in the bending press

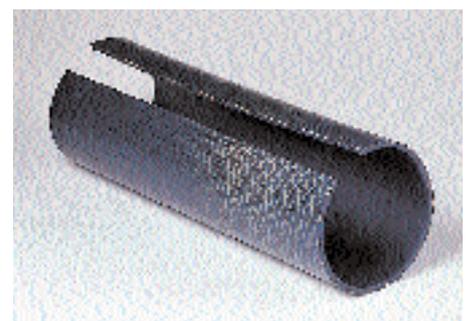
Bent chain conveying part (Rhino Hyde/steel back) with wearing rail and chain guide rail lining, type SM



Rhino Hyde bent 90°, type SB



Rhino Hyde rounded, type SB



Rhino Hyde®: available types and technical data

Rhino Hyde is available in different material types. The use of individual types depends on practical requirements such as speed, fall height, temperature, moisture, and other factors.

Technical data

- ▶ Standard format 3000 x 1200 mm
- ▶ Thicknesses 6.5 / 8 / 12.5 / 20 / 25 mm
- ▶ Service temperature -30°C to +120°C
- ▶ Friction coefficient 0.15 / 0.25 (0.08 wet)

- ▶ Hardness (Shore A) 85°
- ▶ Melting point 200°C
- ▶ Sound-proofing
- ▶ up to 30 dB(A) compared with steel
- ▶ FDA-approved

Available types/technical data

Typ	Temperature	Thicknesses ² in mm	with expanded metal	with steel plate	with cotton fabric
Blue	up to 80°C	6,5	SB 8	SM 8	FB 6,5 on roll Width 1200 mm Length up to 30 m
		8	SB 12,5	SM 12,5	
		12,5	SB 20, SB 25	SM 20	
		20, 25	SB 8 HG		
Yellow/orange	up to 60°C	8	SB 12,5 SH	SM 12,5 SH	
Yellow	up to 80°C	12,5	SB 20 SH		
		20	SB 8	SM 8	
Red ¹	up to 100°C	8	SB 8 HT		
Green	up to 120°C	8	SB 8 FF		
NEW Dark-red	up to 80°C	8	SBC 8		
Ceramic	up to 80°C	8			

¹ hydrolysis-resistant

² other thicknesses on request

HG = High Gliding (very good gliding properties)

SH = Super Hyde (maximum impact strength)

HT = High-Temperature resistance

FF = Fire Fighter

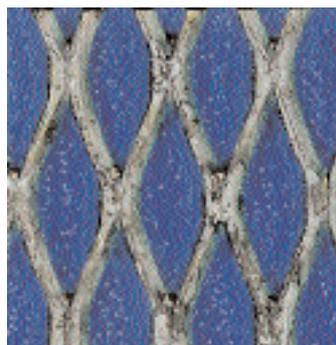
Conveying speed for the individual Rhino Hyde types:

– FB, SB and SM: max. 20 m/sec.

– HG and SH: 25 m/sec

Rhino Hyde backs

Back SB with expanded metal



Back SB with 2-mm steel plate



Back SB with cotton fabric



Rhinox® – the highly abrasion resistant, flexible liner and repair material

Rhinox rounds off our range of materials for corrosion protection in bulk material industry applications.

Rhinox is a two-component moulded material made from highly abrasion-resistant grained ceramic and epoxy resin. It is used in all areas where Rhino Hyde is too stiff or where media are conveyed at high speed.

In addition, Rhinox is successfully used in applications where highly corrosive and sharp-edged materials (such as in recycling) are conveyed under dry or wet conditions.

Rhinox is also a proven material for repairing slides, grooves, tubes, curved elements, pipe or tube magnets, pumps, ventilator housings, separators and curves in suction plants and features these outstanding product characteristics:

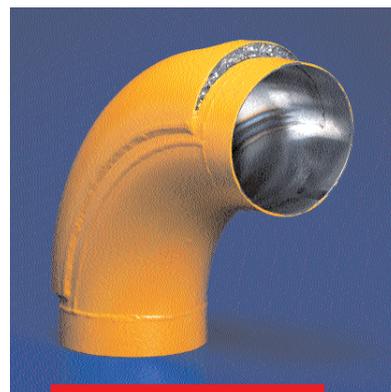
- ▶ it absorbs impacts
- ▶ it is resistant to acid and alkali
- ▶ it has a continuous service temperature between -30° and $+120^{\circ}\text{C}$.

Available containers:

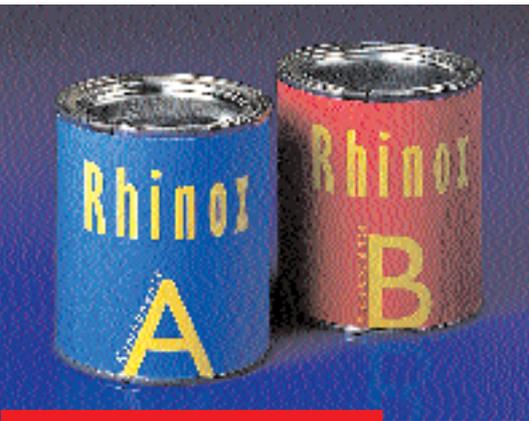
in two tins consisting of 2.25 kg (1 tin with 1.5 kg of resin and 1 tin with 0.75 kg of hardener). This quantity is sufficient for an area of approx. 100 x 15 cm with a lining thickness of approx. 8 cm.

Further information

Our specialists in wear protection engineering will gladly provide you



Tube coated with Rhinox.
Coating of tube interiors is also possible.



Rhinox, the two-component lining material for indoor and outdoor use:
component A = resin
component B = hardener

with further information about the Rhino Hyde product range, about other wear protection and anti-adhesion materials and about the extensive range of semi-finished and finished products from ARTHUR KRÜGER.

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