URETECH
POLYURETHANE WEAR LININGS

NEXT GENERATION
Wear Resistant Liner Systems

www.uretech.net

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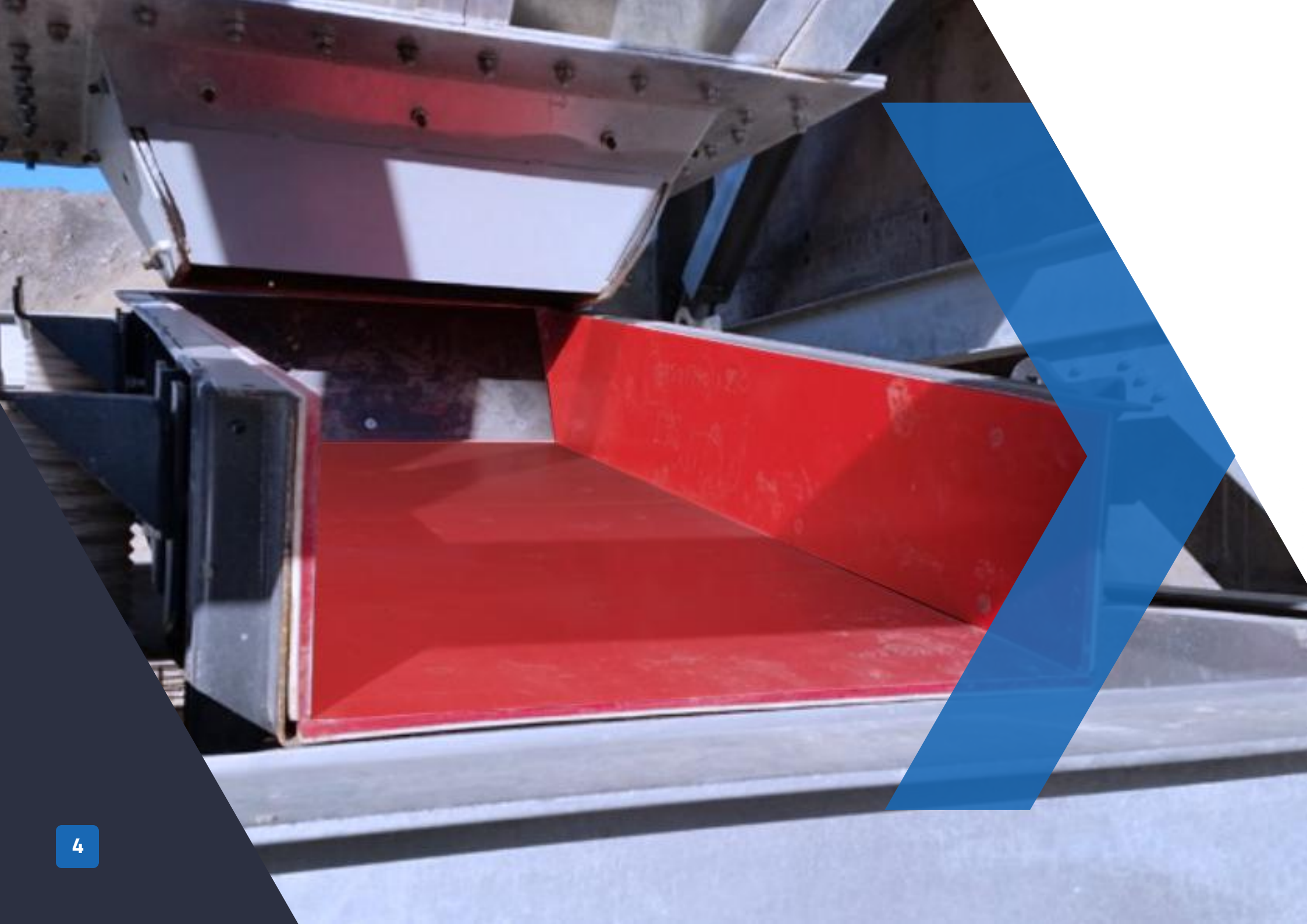

Introduction

Founded in 2004 in South Africa, Uretech has established itself as a market leader, dedicated to the manufacturing of high-quality polyurethane wear resistant liner systems to the bulk materials handling industries. The company has registered several patents owing to its continuous innovation and product development. Uretech is also proud to be ISO 9001 certified and has been certified since 2009.

Uretech products are sold and distributed, locally and internationally, with the help of independent, technically competent companies. Uretech, with its partners, have the technical expertise and experience to support an ever growing market for polyurethane wear liners, the next generation wear resistant liner systems.

Polyurethane liners will continue to grow in popularity for many decades to come owing to the superior elastomer material properties of polyurethane. Compared with steel liners, polyurethanes have proved to be more resilient within certain applications, whilst weighing 6 times lighter.

Uretech has been at the forefront of polyurethane wear resistant liner systems development and testing since 2004. The company was also the first to manufacture polyurethane wear liner with a low-density composite backing plate and dual color wear indicator system. The company successfully patented this new concept liner during 2006. Over the years, Uretech had faced many complex impact and abrasion problems, which lead to the further development of new, innovative products like impact bars and deadbox liners. These liners are used on a daily basis, in combination with flat liners to extend the life expectancy of materials processing equipment in many applications.

About Uretech Wear Liner Systems

We understand the importance of keeping production up and running, whilst keeping maintenance downtime to an absolute minimum. Wear liners are used as a sacrificial component to protect assets from wear and tear. It is critical for these sacrificial liners to offer the utmost protection, without sacrificing safety or economy. Polyurethane wear liners offer all the above.

- Uretech has conducted many tests, proving polyurethane to be more durable than steel in the right application.
- Cost-wise, Uretech liners are comparable to steel on a square meterage basis. In the right application Uretech liners offer a significantly more economical solution, due to reduced installation costs, ease of handling and longevity.
- Our liners eliminate Safety issues during change outs such as hand injuries, hot work and MSD injuries.

Finding the best liner has a substantial impact on the bottom-line profit, by reducing downtime, labour and injury related costs.

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The Benefits of Uretech Liners, Compared to Steel Liners

- 6 Times lighter than steel,
- Cost effective,
- Highly durable in impact and abrasion,
- Substantially reduces noise,
- Dual color wear indicator allows for preventative maintenance planning,
- Virtually eliminates conveyor belt damage,
- Faster and easier to install (Reduced on-site injuries)
- Fiber-reinforced backing further reduces weight while allowing easy cutting and installation on site.

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Quality

Uretech manufactures all of it products in-house, under strict ISO9001 guidelines. Our polyurethane raw materials are sourced from high-quality, world-class manufacturers.

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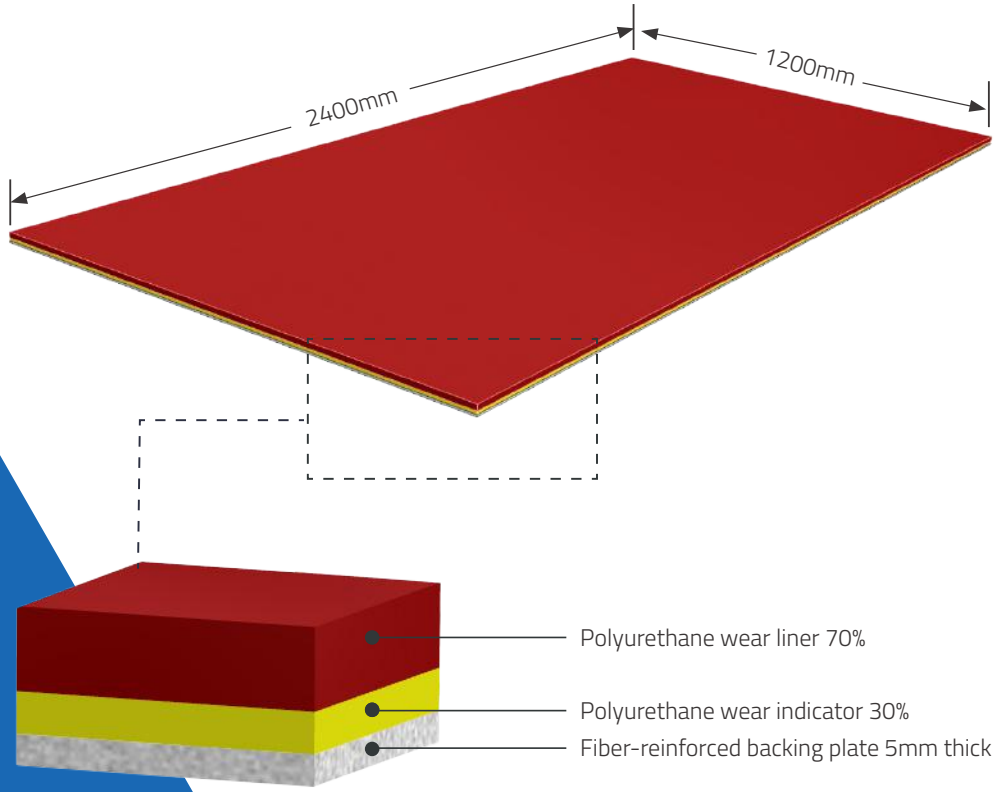
Flat liners
(i.e. Sheets and Liners)

Uretech offers flat liners in the form of sheets or cut-to-size liners. Flat liners have patented fiber-reinforced backing plates, providing stiffness to the liners. Liner stiffness will prolong the life expectancy of liners, by preventing material from flowing underneath the liners and thereby creating a bulging effect. The fibre-reinforced backing plates are easier to cut and drill, compared to traditional steel backings, thus making it more cost effective as the liners can be cut to size ex-factory or on site.

There's a major reduction in damages when using fibre-reinforced backing plates intead of metallic alternatives. Using non-metallic backing plates substantially reduces the risk of damage to downstream mining equipment, like conveyor belts and slurry pumps.

5.1 Standard Dimensions

Uretech manufactures sheets with a standard size of 2400 mm x 1200 mm. These sheets can be cut to customised shapes and sizes to fit any application. Uretech can manufacture liners to any thickness, 12mm – 40 mm being the most popular. Sheet thickness is normally determined by the customer's maintenance cycle and space allowance..

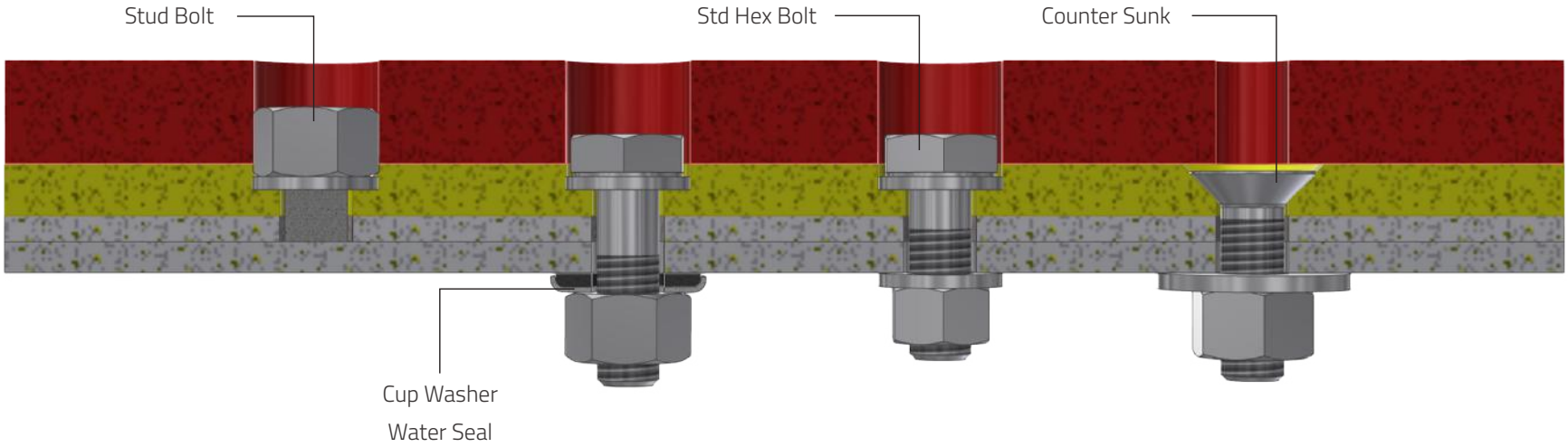


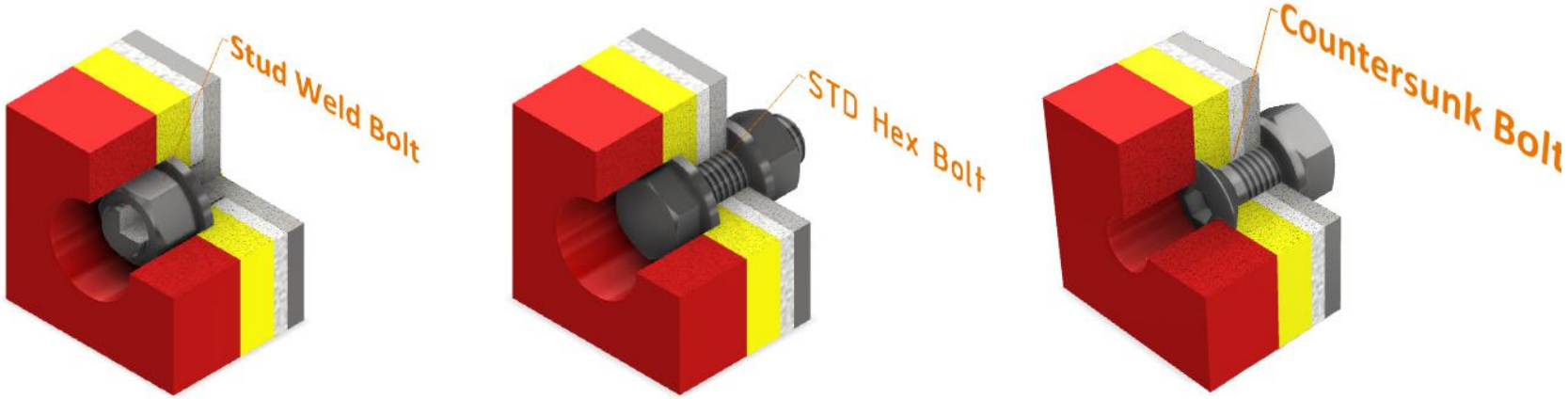
5.2 Preventative Wear Indicators

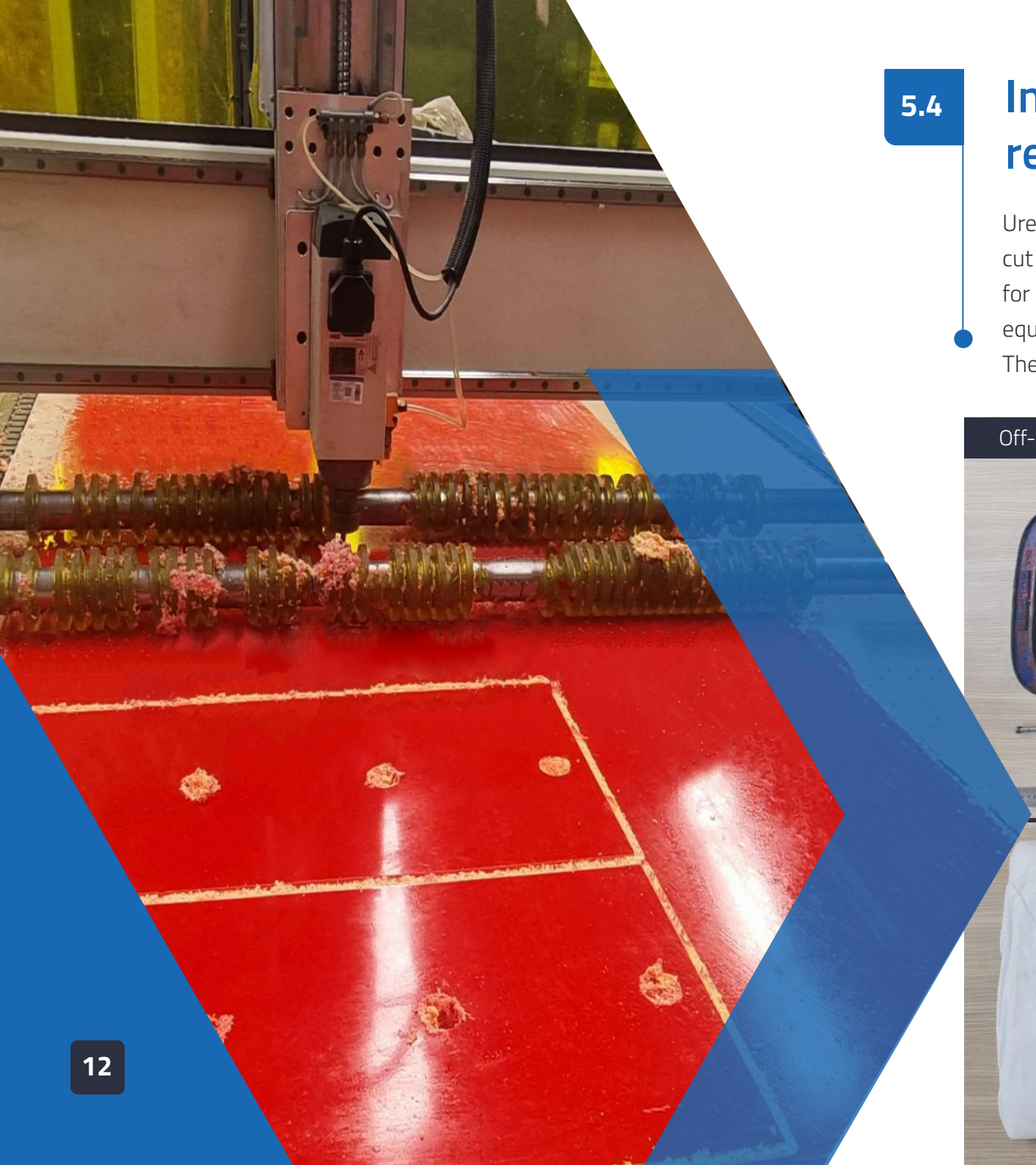
Uretech's unique wear indicator layer enables end-users to visualise when liners have been worn out to their minimum thickness so that replacement can be planned. Uretech liners literally changes color when the liners are worn. Uretech liners are typically a red layer that covers a bright yellow layer beneath, for easy observation. Wear indicators make it easier for plant operators to plan their maintenance cycles better and prevent damage to equipment. Wear indicators also highlight high wear areas within applications, enabling operators to consider chute, material flow or liner design changes. Wear indicators are normally 30% of the overall thickness of the liners, thereby indicating to the operators the remaining life expectancy.

5.3 Attachment Systems

Uretech liners can be attached by a range of off-the-shelf fastening systems. Countersunk bolt heads are the recommended fasteners. This method does not require a countersunk hole to be drilled, only a straight-drilled hole. The bolt head will effortlessly be pulled into the elastic polyurethane. The bolt head ultimately seats against the composite backing plate. Once installed, the polyurethane will act as 'n mechanical lock, preventing bolts from dislodging from the liners. An additional benefit of using this installation method is that the drill-hole is much smaller, preventing excessive wear around the hole.



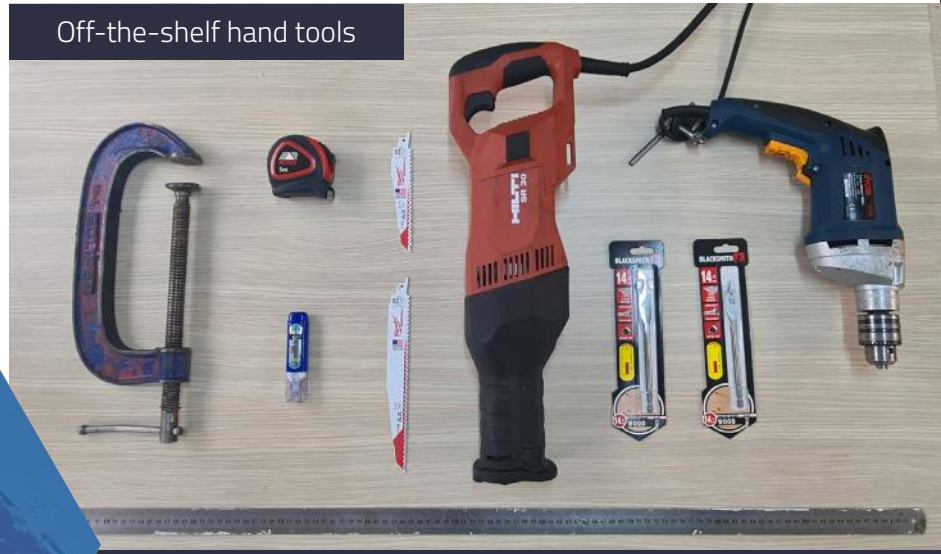




5.4 Installation tools and recommended PPE

Uretech liners are easily installed. They are custom cut and drilled using readily available hand tools, or for higher volume production, automated cutting equipment like CNC or waterjet machines can be used. The result is a high-quality, professional finish.

Off-the-shelf hand tools



Recommended PPE

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Engineered Liners

(i.e. Impact bars, Deadbox Liners and Bull-nose liners)

The need for engineered liners came from high impact and abrasion applications where normal flat liners were not providing optimum solutions. Although Uretech has manufactured and installed a wide range of engineered liners, some of which have now become standardised products.

6.1 Deadbox Liners

A deadbox is a term commonly used within the bulk material handling community, describing a practice whereby ore is deliberately allowed to build-up in a high-impact area to cover the underlying structure; thereby using the ore as the protective coating. Dead boxes are extensively used in high impact and abrasion areas, as it is a very economical solution to protect the underlying applications.

Uretech's polyurethane deadbox liner system was the first of its kind. The compartmentalised structure of the deadbox liners encourages material build-up within the compartments (or shelves), resulting in material onto material flow. The underlying deadbox is therefore in a sense buried underneath ore flowing over it. This makes it ideal for applications exposed to very high material flow volumes.

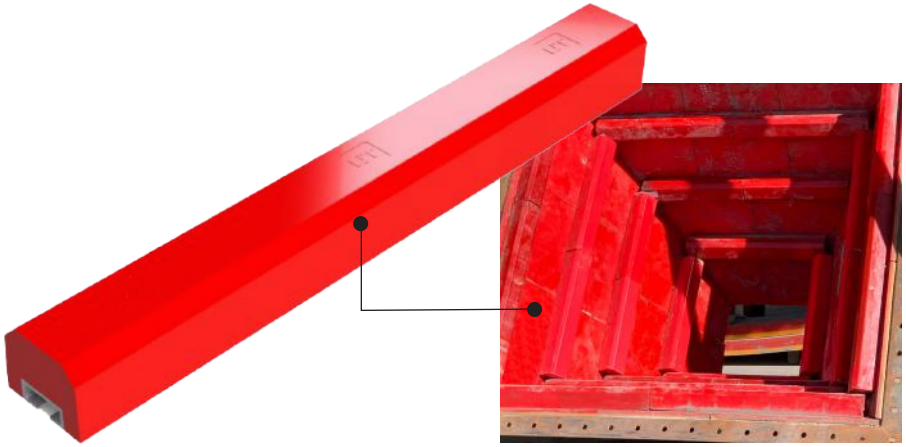
Deadbox liners are also manufactured with Uretech's patented fiber-reinforced backing plates, ensuring safe and fast installation times.

6.2 Impact Bars

Uretech's impact bars are, as the name suggests, used in applications where high impact resistance is required. Impact bars are excellent replacements for areas where profiled steel rails are installed.

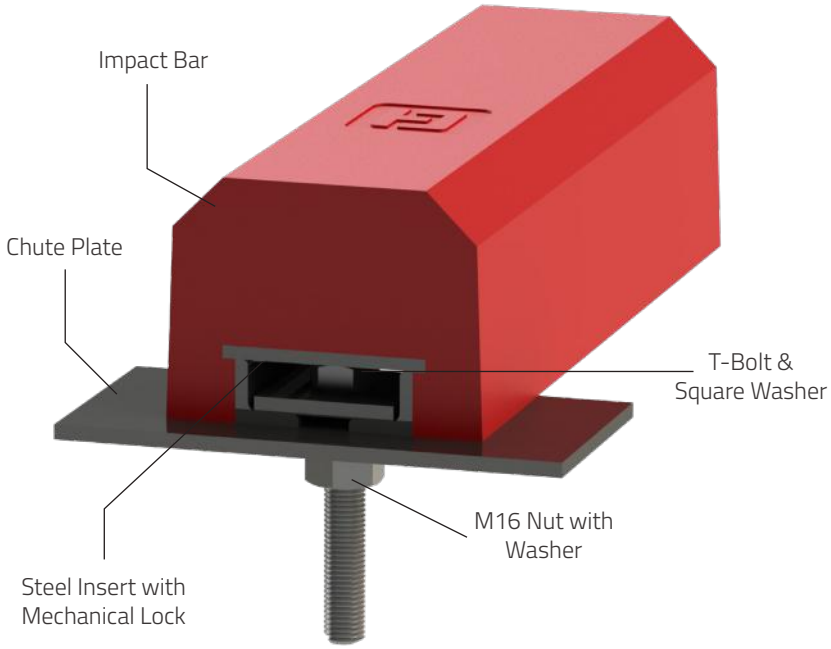
When impact bars are installed with relatively small gaps between them, these gaps will fill with material to form a dead box.

Uretech's standard impact bar is 100x100x1000mm but can be manufactured to custom sizes.



6.2.1 Attachment Systems

Impact bars are attached to the substrates by means of a steel sliding channels, in combination with Uretech's flat-head bolts.



Bucket wheel reclaimer liners

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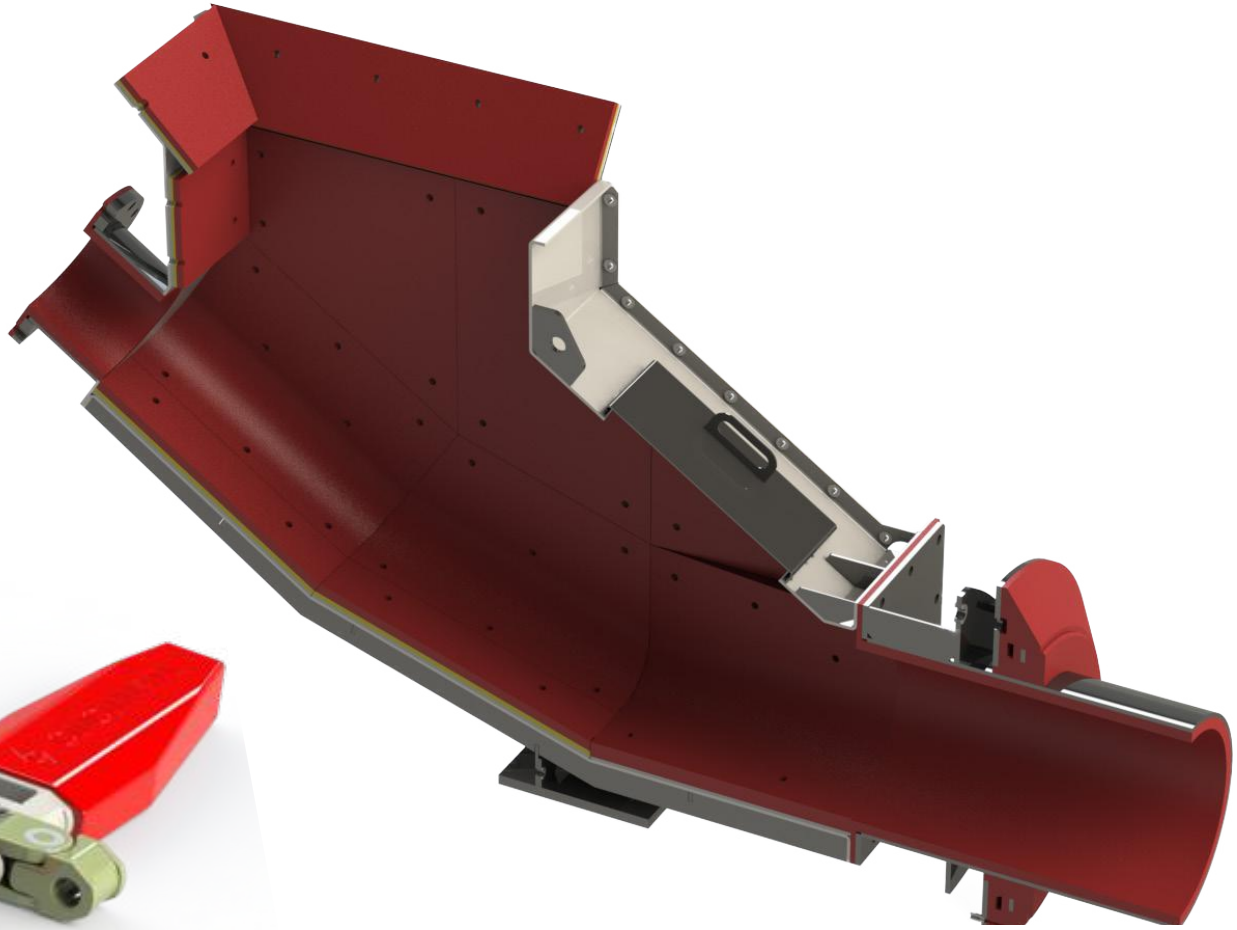
Customised Liners

Customised liners are manufactured to customers' specific requirements or needs. These products are bespoke and manufactured on request. They are not seen as standard stock items. Examples of customised liners include bucket wheel reclaimer liners, specialised screen decks, ventilation equipment, corner liners, etc.



FEEDERS & SCREEN LINERS

BATCH PLANTS

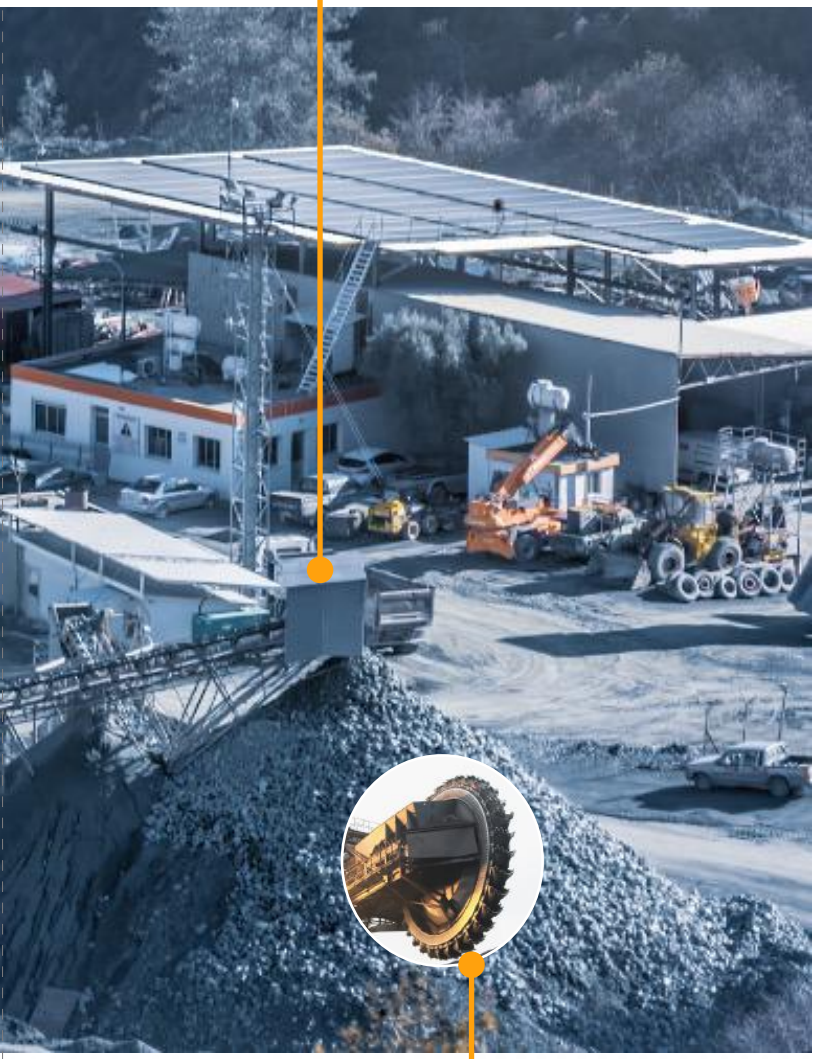
SCREEN UNDERPANS

MINE SKIPS

LOADOUT STATIONS

LAUNDERS

CHUTES



BUCKET WHEEL RECLAIMERS

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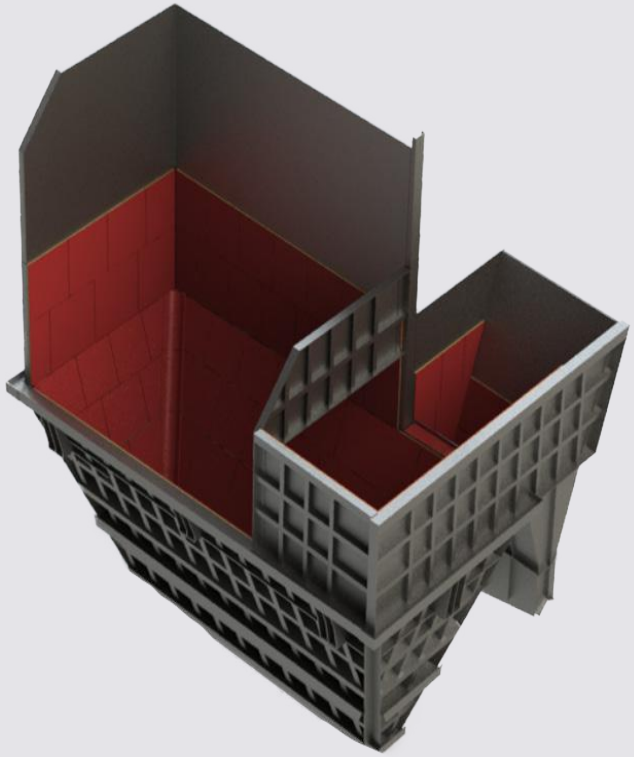
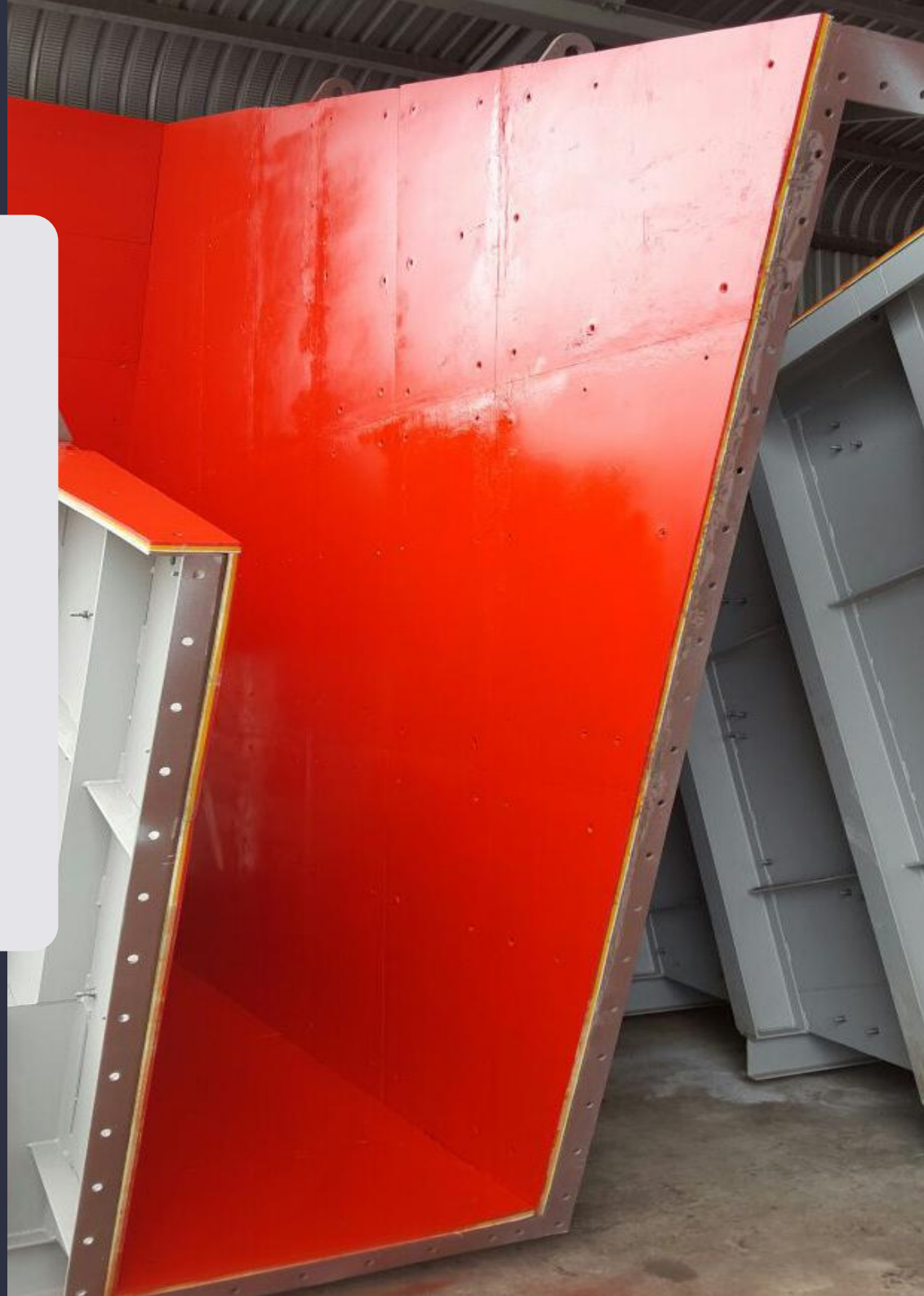
Typical Applications

Uretech's unique liner systems have been tested and monitored in many applications, exposed to impact and wear, since 2004. Based on the successes we have had, our customers have standardised on Uretech's product offering for many of these applications. Please see below some of the more popular applications where our products are used.

Chutes (Overflow & Transfer Chutes)



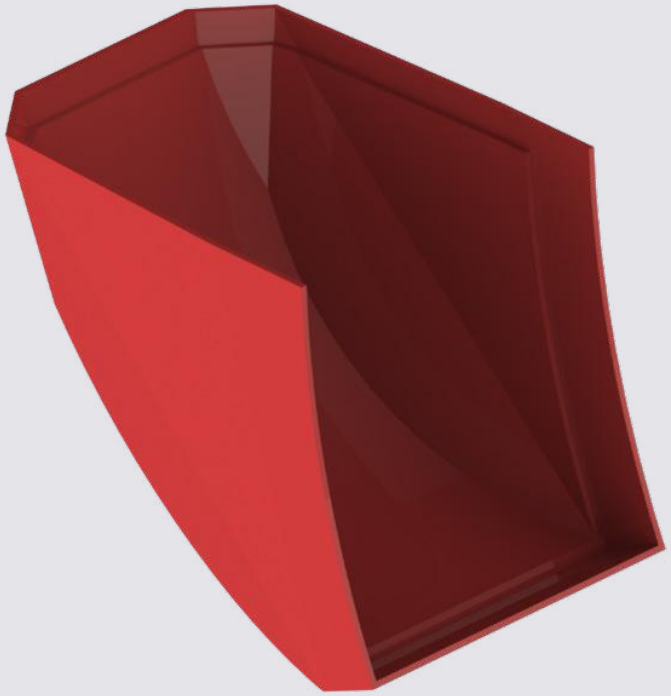
Chutes are used to transport material from one process step to another. When material is fed into a process or discharged from it, chutes collect, convey and prepare the material flow for the following processing phase.



Screen Underpans

Screen underpans are located directly beneath vibrating screens. The function of the screen underpan is to collect and transport screened aggregates.

Reclaimers (bucket wheel)



Bucket wheel reclaimers are used to rapidly collect and move large volumes of ore and other bulk materials from a stockpile to a processing facility.

Vibratory feeders & screen liners

As the name suggests, a vibratory feeder or screen is an instrument that uses vibration to feed material through a process or machine while controlling the rate of flow. Vibratory feeders utilise both vibration and gravity to move material forward.

Launders

One of the most efficient ways to transport any flowable liquid is in an open channel. When an open channel carries slurries and pulps, it is referred to as a launder.

Batch Plants

A concrete plant, also known as a batch plant, is used to combine various ingredients to form concrete.

Loadout Stations

Equipment used for the loading of trains and trucks.

Mine Skips

Mine skips are used to bring mined material to the surface of a mine shaft.

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