

HARDOX®
WEARPARTS

YOUR ONE STOP WEAR SHOP



HARDOX WEARPARTS

Keeping all industries
up and running



We are constantly evolving. For the latest
listing of Hardox Wearparts centers,
please visit hardoxwearparts.com/contact



MINING



CEMENT



QUARRIES



CONSTRUCTION



AGRICULTURE



ENERGY



METAL WORKS



RECYCLING



PULP AND PAPER



Hardox Wearparts is the world's leading provider of wear parts and wear services. More than 160 centers in over 50 countries are strategically located to provide you with fast and competent access to wear products and services.

Every Hardox Wearparts center has a certified workshop with wear specialists, skilled craftsmen, and production resources to ensure your wear parts and repair work meet the highest standards.

We service all industries providing wear products for situations where steel meets abrasive material. Whether you are in mining, quarry, construction, forestry, coal or any other industry where abrasion is an issue, Hardox Wearparts will keep your production running with thousands of wear products to meet your needs.

Our wear solutions are your guarantee of maximum performance and service life for all your wear-critical applications.

We're your *one stop wear shop*—all you need to fight wear is available from one source.



MASTERS OF UPTIME

Fighting wear with knowledge,
products and services





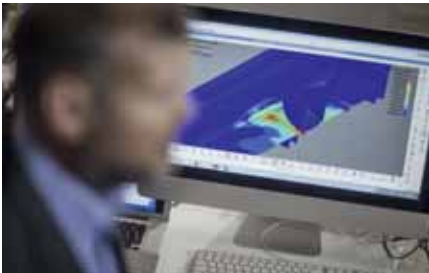
WEAR PRODUCTS

Hardox Wearparts produces thousands of wear parts to meet your needs for buckets, crushers, dozers, feeders, shredders and many more applications. For our complete product offering, visit our web shop at hardoxwearparts.com/shop and select the location nearest you.



TOP OF THE LINE WEAR MATERIALS

Wear parts are manufactured using the optimum material for your needs, whether it is Hardox® wear plate, Strenx™ performance steel, Toolox® engineering and tool steel, chromium and complex carbide overlays, or a combination.



CONSULTING SERVICES

We can offer you world-class advice from material selection to forecasting wear, from designing to producing wear products suitable for your processes and equipment. Experienced design engineers work with CAD, FEM (finite element method) and WearCalc simulation software to produce new parts from scratch or based on your drawings and instructions.



IN-HOUSE PRODUCTION

The production resources at Hardox Wearparts include cutting, machining, bending, and roll forming, as well as general fabrication and assembly of wear parts on your equipment.



ON SITE SERVICES

To minimize downtime we can measure, manufacture and install your wear parts on site, as part of our scheduled or emergency repair services. For large and production-critical equipment we can also use 3D laser scanning to speed up the process and make sure the new parts fit perfectly.



UPTIME MANAGEMENT

Hardox Wearparts uptime management services help companies evolve from reactive to proactive repair strategies, resulting in a more cost efficient production process. Our wear specialists can suggest ways to optimize maintenance routines through wear monitoring solutions and service agreements.



ONLINE ACCESS 24/7

Access a wide range of wear replacement parts online anytime and anywhere at the Hardox Wearparts web shop. For a complete list of the Hardox Wearparts centers providing web shop services, visit hardoxwearparts.com/shop

TECH TALK

Hard facts about wear materials, performance and technologies

Hardox wear plate forms the basis for most of our wear resistant parts and repair work. Hardox has delivered extreme wear resistance for more than 40 years, thanks to its unique combination of hardness and toughness. Depending on your particular wear situation, Hardox wear plate can improve performance and increase service life up to 25 times compared to mild steel. Thanks to the wide range of Hardox grades, it is possible to optimize service life for all types of equipment and applications.

WHY HARDOX LASTS LONGER

The combination of hardness and toughness is what makes Hardox wear plate outperform other wear materials on the market. Its hardness minimizes wear since it is difficult for the 'edges' of abrasive material to cut into the steel's surface. Hardness also means it has excellent yield and tensile strength, which helps maintain the structure's shape.

Its toughness makes it possible for Hardox to withstand heavy impact without cracking. Plus, you can trust Hardox to have consistent properties from one plate to the next. Its superior cleanliness and low carbon equivalent also make it easy to perform any repair welding needed.

OVERLAYS ARE TOP PERFORMERS

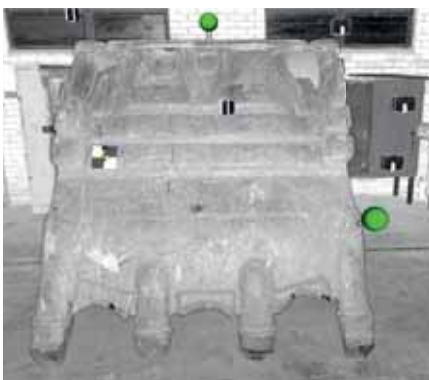
Our overlay products combat wear in severe abrasive conditions. By welding chromium carbides or complex carbides on top of mild steel or Hardox wear plate you get an extremely hard surface. Our optimum carbide concentration and consistently good wear resistance from the top surface through 75% depth in overlay result in wear parts with longer service life compared to competitive products.

WEARCALC PREDICTS WEAR

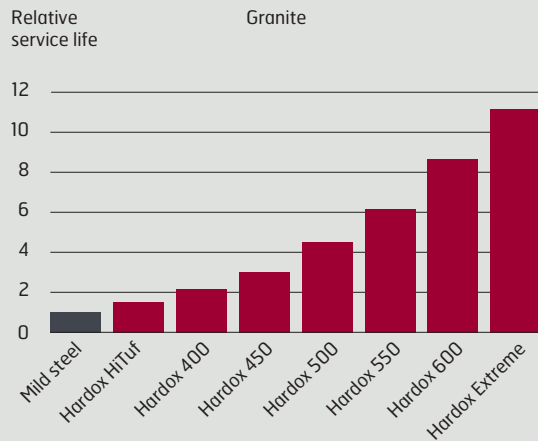
Our WearCalc software can predict the wear for almost any combination of abrasive material and grade of Hardox wear plate, chromium carbide or other steel options. Relative service life is calculated based on the wear plate hardness, wear conditions and the type of abrasive material impacting the surface. To access WearCalc, contact your local Hardox Wearparts center.

HIGH-TECH IN 3D

3D laser scanning is a tool that can minimize your downtime by shortening the time it takes to measure the equipment and fit the new wear parts. Scanning is used to create an accurate 3D model of the equipment, ensuring that the new wear parts will fit instantly. The same 3D model can also be imported to CAD for more extensive structural analysis of the equipment.

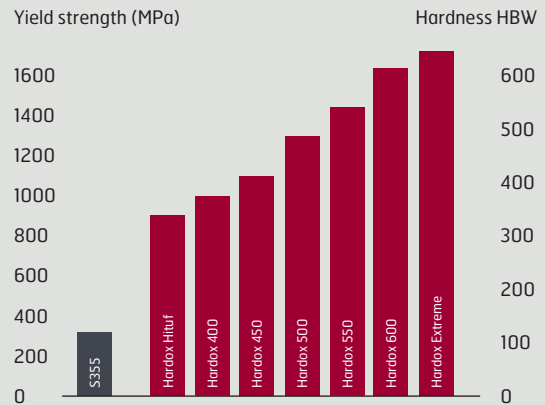


WEAR RESISTANCE



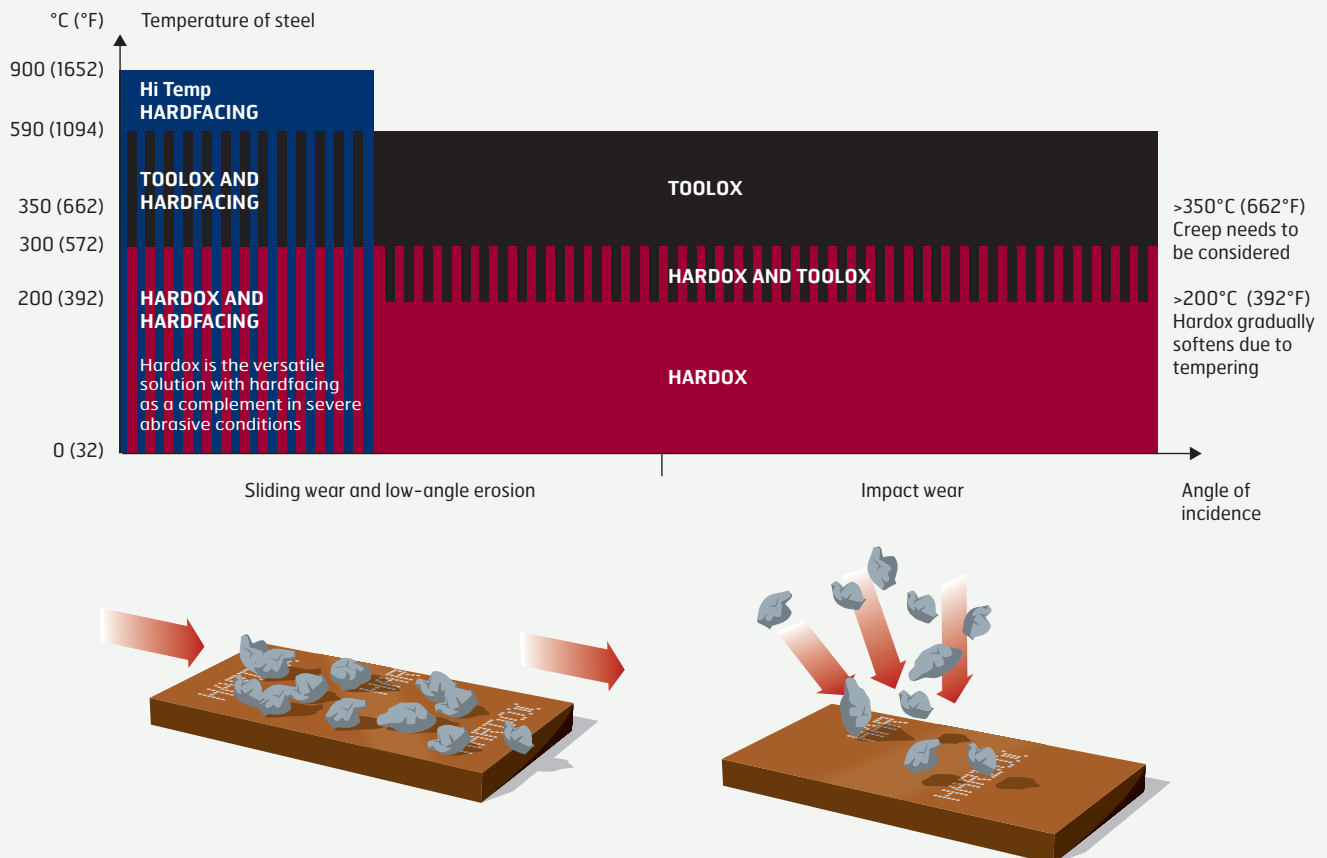
Optimal material selection depends on the interaction between the plate hardness and abrasiveness of the material. The chart shows the relative service life of different steel grades when subjected to wear from granite. An upgrade from mild steel to Hardox 500 can increase service life by nearly 5 times.

STRENGTH AND HARDNESS



The graph presents the hardness and yield strength of different Hardox grades, ranging from 350 HB to 650 HB. The key with the high performance of Hardox is its unique combination of high hardness, strength and toughness. This allows Hardox to both resist wear and withstand heavy impact without permanent deformation or cracking.

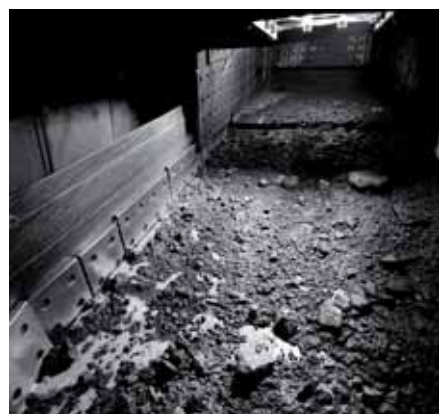
FIGHTING WEAR IN DIFFERENT CONDITIONS AND TEMPERATURES



Some wear materials are targeted at special wear conditions, while others are all-around performers. Hardox wear plate has excellent wear resistance for all impact angles up to a working temperature of around 300°C. For temperatures above that and up to 590°C Toolox is a more suitable choice. Hardfacing wear parts have good wear resistance to sliding and moderate impact wear up to a temperature of around 500°C. Beyond this temperature, special HiTemp hardfacing grades can be used up to 900°C.



WEAR PARTS



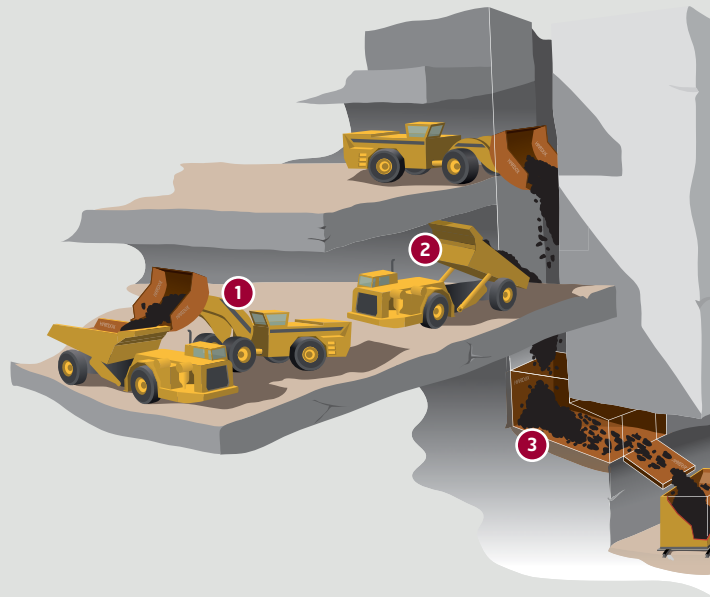


THAT WORK



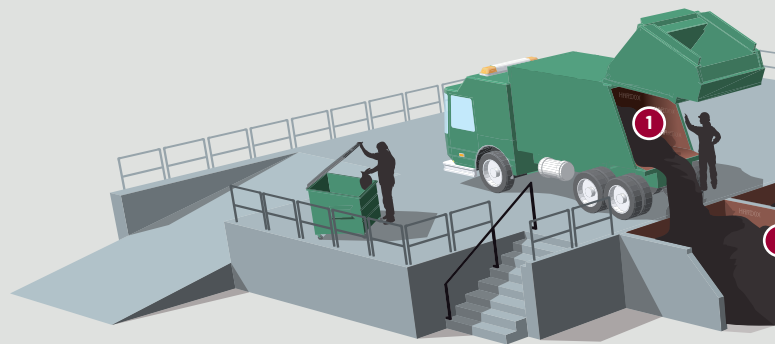
UNDERGROUND MINING

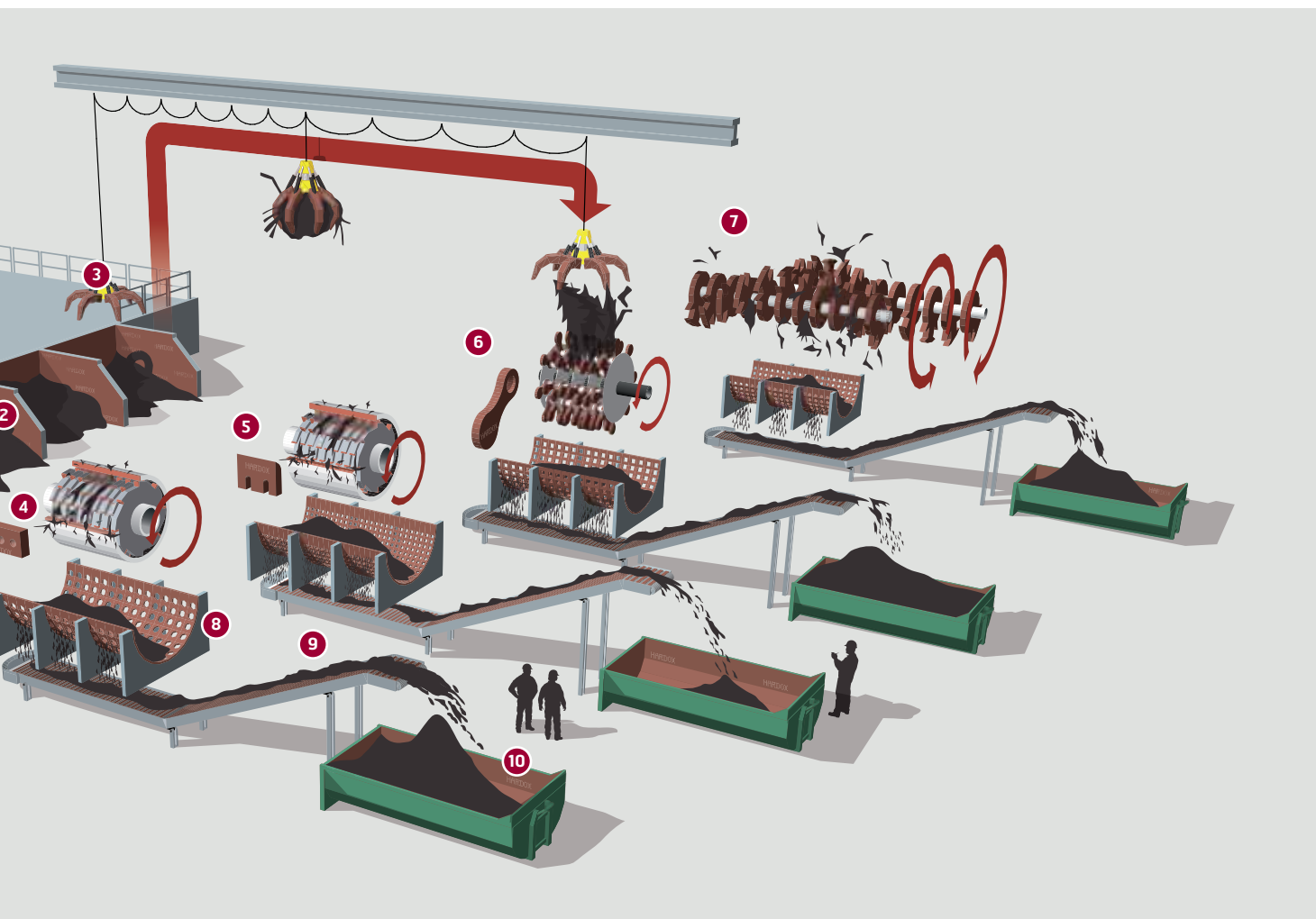
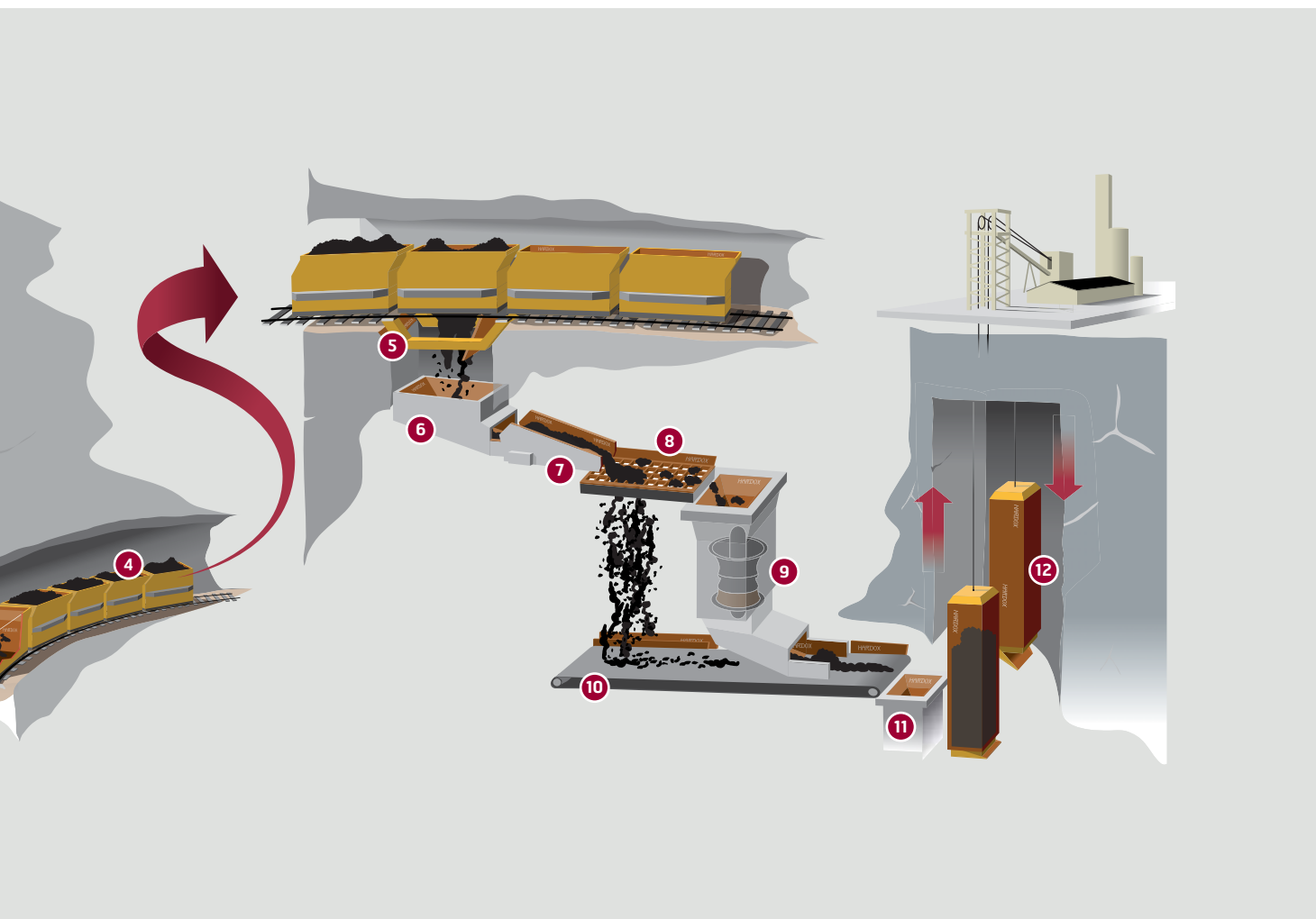
- 1. Front loader**
 - Cutting edges
 - Bucket side cutters
 - Bottom
 - Connector
 - Pins
 - Wear bars and strips
- 2. Dump truck**
 - Structural wear plate
 - Liner package
- 3. Buffer bin**
 - Liner plates
- 4. Mine trolley**
 - Bottom and side walls
- 5. Discharge site**
 - Liner plates
 - Grizzly bars
- 6. Transfer chute**
 - Liner plate
- 7. Feeder**
 - Liner plate
- 8. Screener**
 - Screening plate
- 9. Crusher**
 - Liner plate
- 10. Conveyor**
 - Side plates
- 11. Measuring bin**
 - Liner plate
- 12. Skip**
 - Liner plate



RECYCLING

- 1. Garbage truck**
 - Structural wear plate
- 2. Storage bin**
 - Liner plates
- 3. Grapples**
 - Wear liners
 - Pins
 - Bushings
- 4. Prismatic knives**
 - Knives
 - Blow bars
 - Lining plates
 - Screens
- 5. Granulator knives**
 - Knives
 - Liners
 - Screeners
 - Axle
- 6. Hammer mill**
 - Hammers
 - Liners
 - Grizzly bars
 - Screens
 - Spacer disc
 - Axle
- 7. Shredder**
 - Shredder knives
 - Spacer disc
 - Liners
 - Axle
- 8. Sieves/Screens**
- 9. Conveyor belt**
 - Side liners
- 10. Container**





QUARRY AND OPEN PIT MINING

1. Dipper shovel

- Inside floor
- Inside shell lining
- Inside wear bars
- Outside side protection
- Wear blocks and bars
- Outside floor protection (exterior)
- Door liner protection
- Teeth protection (cover adaptors)
- Dipper

2. Bulldozer

- Blade
- Cutting edge
- Rippers

3. Dump truck

- Dead bed solution
- Floor wear bars
- Side wear bars
- Wear plate in sliding area
- Wear plate in impact area

4. Excavator buckets

- Shell
- Pins
- Wear pads
- Liner plates
- Cutting edge
- Bucket side cutters
- Bucket side jaw shrouds
- Wear bars and strips
- Lip shrouds

5. Dump pocket

- Liner plate

6. Feeder

- Lining plate
- Grizzly bars/screens

7. Screens

- Mid bars
- Grizzly bars
- Screen

8. Jaw crushers

- Lining plates
- Wedges
- Hopper and outlet
- Cheek

9. Conveyor

- Bottom liner plates
- Side liner plates
- Sprocket wheels
- Paddles
- Pans/flights

10. Transfer chute

- Lining
- Hopper to primary crusher
- Lower part hopper

11. Hammer crushers

- Hammers
- Liners
- Grizzly bars
- Screens
- Spacer disc
- Axle
- Crusher rotor segments

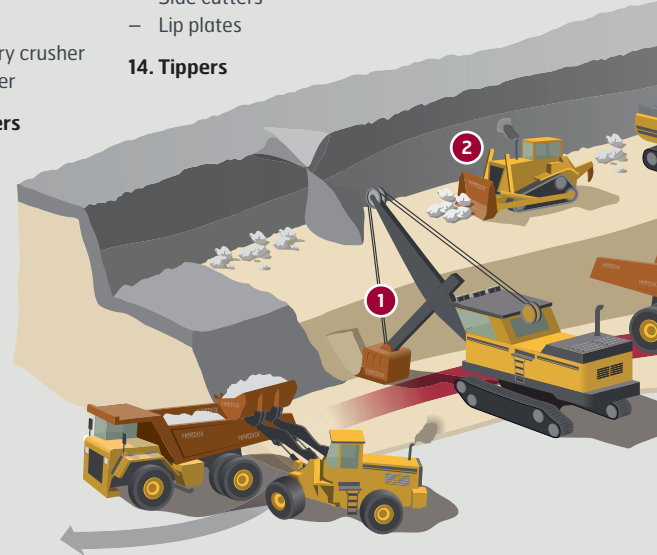
12. Final screening

- Crusher screens

13. Loader

- Shell bottom
- Side plates
- Wear ribs
- Side cutters
- Lip plates

14. Tipper



CEMENT

1. Open pit

2. Loader and tipper

- Loader
- Wear pads
- Bucket side cutters
- Cutting edge
- Wear bars and strips
- Lip shrouds
- Tipper
- Structural wear plate

3. Excavator and dump truck

- Excavator
- Shell
- Pins
- Wear pads
- Liner plates
- Cutting edge
- Bucket side cutters
- Bucket side jaw shrouds
- Wear bars and strips
- Lip shrouds
- Dump truck
- Liner plates
- Dead bed

4. Hopper

- Liner plates

5. Conveyor belt steel/apron feeder

- Bottom liner plates
- Side liner plates
- Sprocket wheels
- Paddles
- Pans/flights

6. Jaw crusher

- Cheek liner plates
- Hopper/outlet liner plates

7. Conveyor belt rubber

- Sprocket wheels
- Side liner plates

8. Crusher screen

- Grizzly bars
- Grizzly bar seats
- Screens

9. Cone crusher

- Liner plates for inlet and main frame
- Protector ring – cone head
- Liner plates hopper and outlet

10. Chute

- Liner plates

11. Conveyor belt rubber

12. Storage bins

- Liner plates

13. Elevator buckets

- Shell
- Wear pads
- Wear bars and strips
- Cutting edge
- Side cutters
- Sprocket wheels

14. Hopper

- Liner plates

15. Conveyor belt rubber

16. Raw mill

- Guide vanes
- Liner chute
- Liner plate reject cone
- Liner plate mill house
- Rotor liner plates
- Side liners grinding table

17. Preheating in cyclones

- Liner chutes
- Cyclone lining
- Tubes

18. Rotary kiln

19. Clinker cooler

20. Conveyor belt rubber

21. Hammer crusher

- Hammers
- Liners
- Grizzly bars
- Screens
- Spacer disc
- Axle

22. Hopper

- Liner plates

23. Screw conveyor

- Tubes and trough
- Liner plates

24. Silos

- Liner plates

25. Ball mill

26. Elevator bucket

27. Hopper

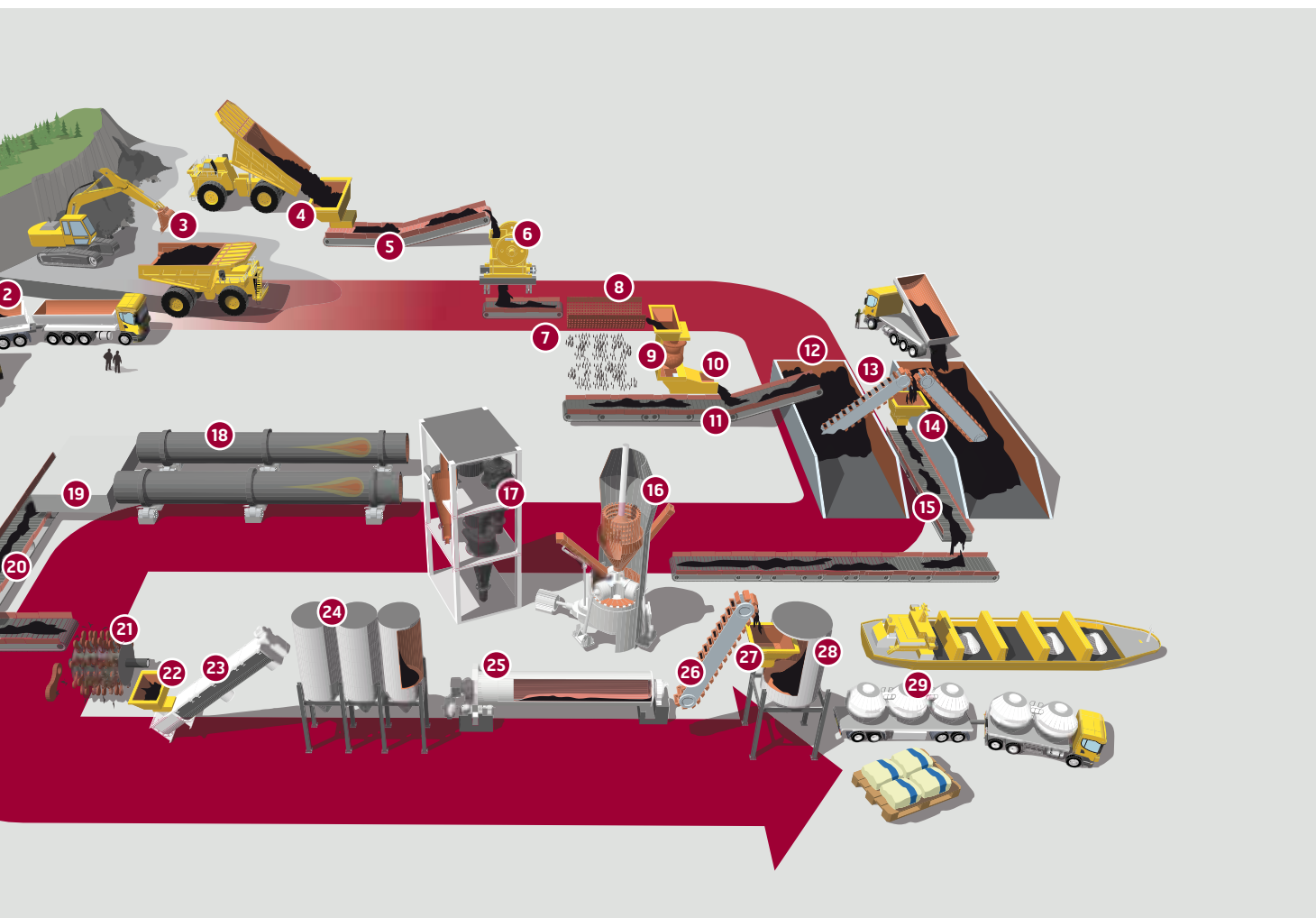
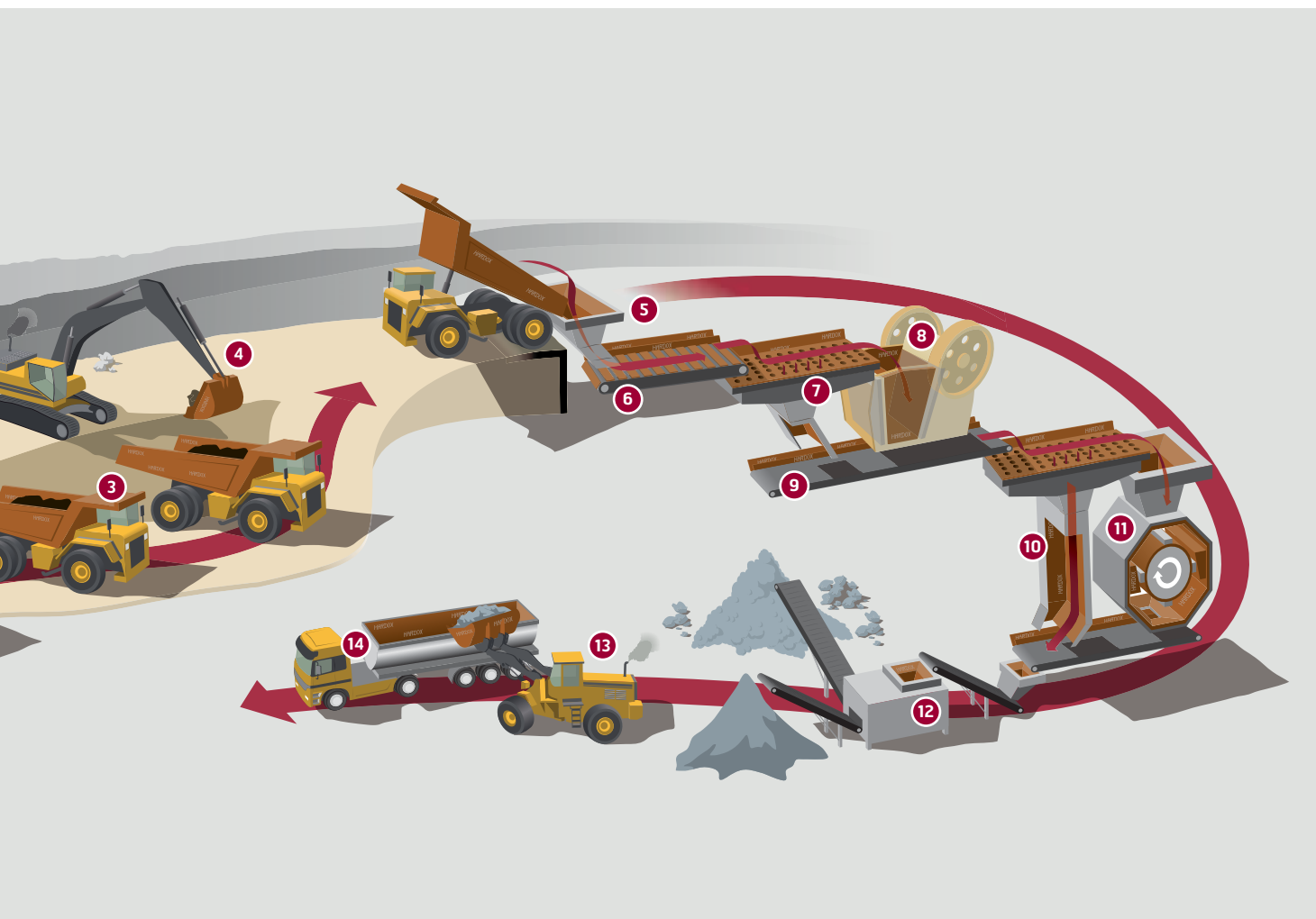
- Liner plates

28. Silo

- Liner plates

29. Transport of finished product







PEOPLE MAKING A DIFFERENCE

With a promise of excellence

Hardox Wearparts has been in business for 15 years, steadily adding new local full-service centers that provide wear solutions. That's all we do, and we are determined to do it better than anybody else.

The service you get when contacting Hardox Wearparts should be the best service you have ever received. The performance of our products should amaze you and your delivery be received as promised.

The people working at Hardox Wearparts back up these claims. In a brochure, we can only say it. In real life, you can experience it. To qualify as a Hardox Wearparts center, having adequate equipment is not enough. The center has to live up to strict standards on staff expertise and skills, ensuring best practices in quality, productivity and wear knowledge.

To ensure top performance, every Hardox Wearparts center has access to wear specialists providing the latest knowledge in wear, design and production of wear parts using hard materials. Training and skills transfer is done on a continuous basis. By sharing experiences, our Hardox Wearparts centers likely have the largest wear knowledge base in the world.

We have been working with Hardox wear plate, the industry leading material, from the start. This has given us unparalleled power to tackle wear challenges and reach maximum performance and service life. Whatever your application, our materials and design experts will support you in creating new and smarter wear solutions. That's a promise.



TITAN AMERICA AVOIDS \$50,000 RISK

Titan America, a leading cement and building materials manufacturer in the U.S., was concerned that the lip and jaw shrouds on its buckets would come off during production. This could result in up to \$50,000 in damages to their crusher and wear parts. The Hardox Wearparts center in Northport, Alabama suggested welding on a liner package made of Hardox wear plate with complex carbide overlay lip and vertical jaw shrouds. This solution resolved its concern and also increased the service life of its lip shrouds (A) and jaw shrouds (B) 2 to 3 times. Titan America was pleased with the results and it has since ordered Hardox Wearparts overlay liners for additional dragline and loader buckets.



CEMENT MILL DOUBLES SERVICE LIFE

A major cement mill in Malaysia was experiencing frequent maintenance shutdowns due to its grate bars and segments wearing out quickly. The Hardox Wearparts center in Langkawi, Malaysia collected samples of the limestone material, conducted a wear analysis and recommended Hardox 400 and 450 to replace the AR plate it was using. The service life of the grate basket assembly has doubled from six months to a year as a result. In addition, the wear rate is very predictable and no chips or cracks occur during high impact, which had been a major problem in the past. The improved grate performance has resulted in the customer ordering solutions for other wear applications, including liner plates for chutes, elevator buckets, clinker crusher casing liners, and hammers for crushers.



ON SITE, ON CALL

For urgent and proactive wear services

Come rain or shine, snow or sleet, heat or cold—you can trust the people from Hardox Wearparts to show up on site with the right parts, tools and spirit to keep you working.

We call Hardox Wearparts a *one stop wear shop*. Calling it a non-stop wear shop would be equally fitting. You can reach us 24/7 if that is what your production requires.

If you face a sudden and unplanned stop, our experienced service crew can come to the rescue with on site replacement and repair work.

Naturally, a proactive approach to wear is recommended. Regular wear monitoring and scheduled maintenance are the bread-and-butter of our services.

Whatever your industry, Hardox Wearparts is committed to keeping you going—delivering the best wear solutions and peace of mind at the same time.



ACCESS YOUR WEAR PARTS ONLINE

Anytime and anywhere

The Hardox Wearparts web shop is your *one stop wear shop* on the web. It reshapes the way wear parts are supplied. It is fast, convenient, and will help speed up the order process. That means less downtime for you.

The Hardox Wearparts web shop is all about making your daily work as easy as possible. You have online access to literally thousands of wear replacement parts. You can access the web shop from your computer, tablet or smartphone.

Navigating the shop is as easy as 1, 2, 3

1. Select your industry, equipment, wear part
2. Complete dimensions and materials required
3. Request quote

You can select from standard parts or even upload your customized drawings. Once you have added your wear parts to the cart, you submit a request for a quote. This will prompt a quick response from a representative at a Hardox Wearparts center close to you.

You will be contacted to finalize the details of your order request, with prices, delivery conditions and other services such as onsite installation, if required.

Enjoy wear shopping 24/7 at
hardoxwearparts.com/shop



HARCO
PRODUCTS
NORTHPORT

**HARCO PRODUCTS
NORTHPORT**

Loader Buckets



ITEM NO.

DESCRIPTION

PRICE

QTY.

TOTAL

DATE

BY

REMARKS

APPROVED

SIGNATURE

DATE

BY

REMARKS

APPROVED

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REMARKS

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We would love to hear about your uptime needs



Find a center near you at
hardoxwearparts.com/contact



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