

HARDOX®
WEAR PLATE

ON SITE

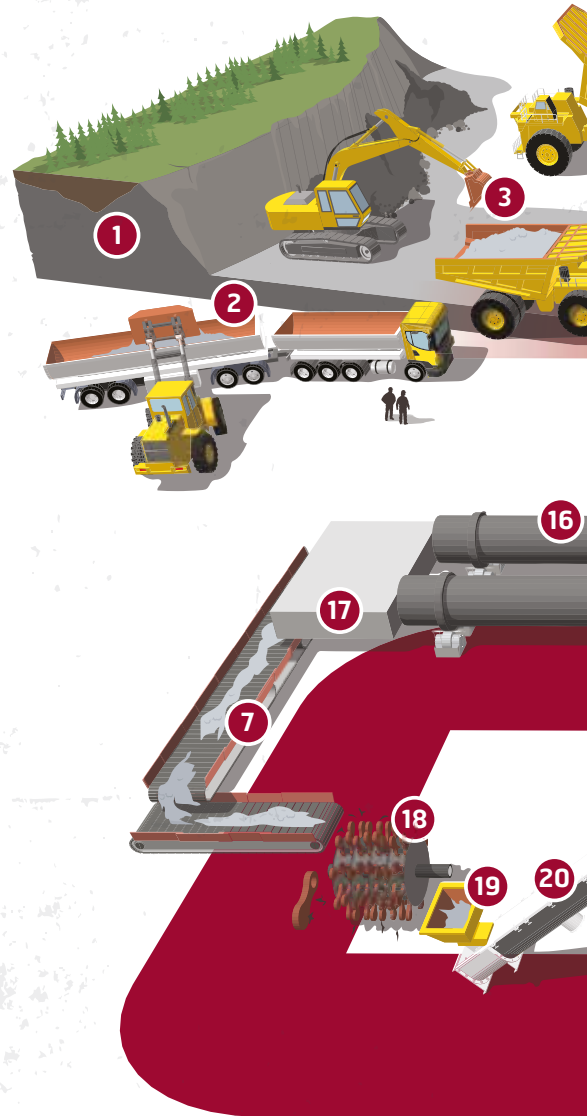
CEMENT PRODUCTION



SSAB

WHAT IS YOUR WEAR CHALLENGE?

From the limestone quarry to loading and transporting the final product, Hardox® wear plate is the ultimate solution for cement production. This premium wear steel offers exceptional hardness, strength and durability to withstand excavating, crushing, screening, and grinding the stone. Cement producers can count on Hardox® wear plate to provide long-lasting performance, increased productivity, and reduced maintenance costs.



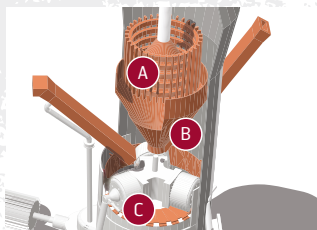
Sustainability in action

The environmental footprint from the cement production chain can be reduced by using Hardox® steel. The hardness and toughness of Hardox® allow for thinner dimensions and lighter yet highly durable equipment which saves fuel and increases productivity.



JAW CRUSHERS

For the cheek plates in a jaw crusher Hardox® 500, Hardox® 550 and Hardox® 600 are all suitable to battle the wear and impact loads generated by crushing limestone.



VERTICAL RAW MILL

Hardox® 450 and Hardox® 500 Tuf protect against wear of the guide vanes, frame, deflection plates and air separator (A). Hardox® 600 is used as liner plates in the cone (B) and in the grinding table (C).



GUIDE PLATES

Hardox® 500 is a common choice for guide plates in the clinker cooling bed.

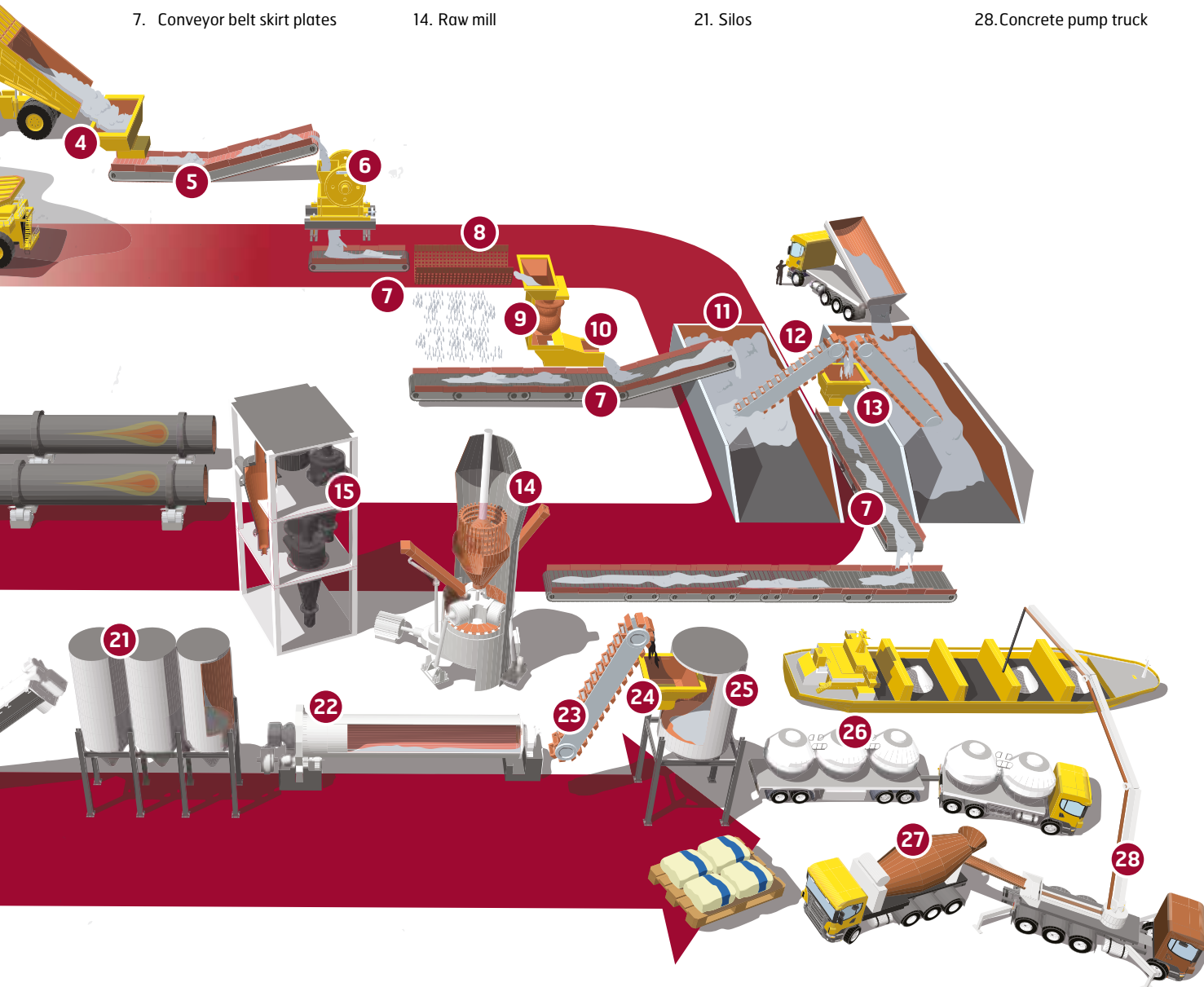


CONCRETE MIXER DRUM

Hardox® 450 and Hardox® 500 Tuf in the drum shell, spirals, chutes and hopper of a concrete mixer truck are perfect choices for a durable and lightweight solution.

CEMENT PRODUCTION FLOW

- | | | | |
|-------------------------------|----------------------|----------------------------|-----------------------------------|
| 1. Open pit | 8. Crusher screen | 15. Preheating in cyclones | 22. Ball mill |
| 2. Loader and tipper | 9. Cone crusher | 16. Rotary kiln | 23. Bucket elevator |
| 3. Excavator and dump truck | 10. Chute | 17. Clinker cooling bed | 24. Hopper |
| 4. Hopper | 11. Storage bins | 18. Hammer crusher | 25. Silo |
| 5. Conveyor belt | 12. Elevator buckets | 19. Hopper | 26. Transport of finished product |
| 6. Jaw crusher | 13. Hopper | 20. Screw conveyor | 27. Concrete mixer |
| 7. Conveyor belt skirt plates | 14. Raw mill | 21. Silos | 28. Concrete pump truck |



LINER PLATES

Hardox® 500, Hardox® 550 and Hardox® 600 are versatile grades for liner plates in all types of mills, chutes, hoppers, crushers, silos, and other applications in the cement production chain.



HAMMER CRUSHERS

Hammers in Hardox® 500, Hardox® 550 or Hardox® 600 are used for crushing limestone and clinker. The high toughness of Hardox® steel provides high resistance against cracking.



BALL MILLS

Hardox® 500, Hardox® 550 and Hardox® 600 are the recommended materials for wear protection at the inlet and outlet in ball mills. Lifter bars benefit from using Hardox® 500.



SCREENS

Screens are used for sorting material. Hardox® 450 or Hardox® 500 Tuf are recommended grades. For extremely abrasive environments, screens can also be made of Hardox® 550 or Hardox® 600.

WEAR: THE INSIDE STORY

Your choice of wear plate has consequences for your business. Hardox® wear steel maximizes the wear performance of your equipment and machines, reduces workshop lead times and increases the overall productivity of your operations.

Thanks to the consistent properties of Hardox steel, you can always rely on its high performance. It also means a highly predictable service life, allowing you to optimize your maintenance planning.

With its combination of high hardness, high strength, and toughness, Hardox® can be used in a variety of applications, including loading, transport and crushing of abrasive materials.

What's the secret behind Hardox®? It starts early in production with state-of-the-art steelmaking and a unique hardening and quenching process, resulting in wear plates with outstanding hardness, toughness, and workshop friendliness.

SUPPORT AT YOUR SERVICE

In addition to our steel products, SSAB provides you with technical support from SSAB Tech Support and SSAB Knowledge Service Center. Our technical support can help with everything from optimizing your product design to hands-on workshop issues. Our Technical Development Managers and material specialists have decades of experience in solving wear challenges.

SSAB is a Nordic and US-based steel company. SSAB offers value added products and services developed in close cooperation with its customers to create a stronger, lighter and more sustainable world. SSAB has employees in over 50 countries. SSAB has production facilities in Sweden, Finland and the US. SSAB is listed on Nasdaq Stockholm and has a secondary listing on Nasdaq Helsinki. www.ssab.com

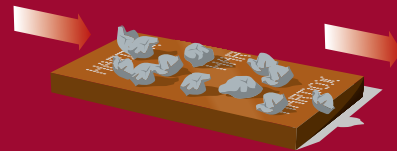
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DIFFERENT TYPES OF WEAR

Wear comes in different forms, and each has a different impact on the service life of your application. The most common wear types are sliding wear and impact wear. When abrasive particles are trapped in a narrow gap between two steel surfaces it causes squeezing wear. Each type of rock is composed of a unique set of minerals which contribute to the specific type of abrasive wear damage.

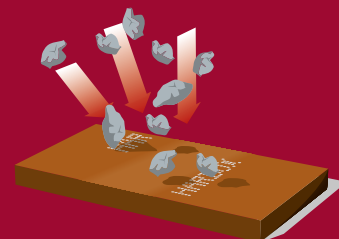
HARDOX® WEARCALC

Hardox® WearCalc app is a powerful prediction tool that calculates wear and helps you optimize your choice of wear steel. It allows you to predict relative wear life and compare different wear solutions. Whatever your application and wear situation, Hardox® is your ticket to outstanding wear performance.



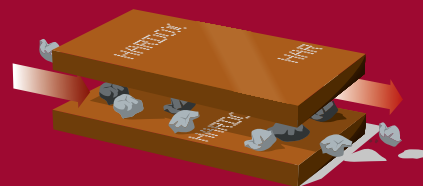
SLIDING WEAR

Hardox® steel has great resistance to sliding wear since it's difficult for abrasive materials to cut into the steel's hard surface.



IMPACT WEAR

Hardox® is a wear steel with high toughness, which makes it stand up to impact from rocks and other heavy objects striking the steel.



SQUEEZING WEAR

Squeezing wear is a less common type of wear but will benefit from the hardness of Hardox® the same way as for sliding and impact wear.