

ELMC

ELEMENT MINING
AND CONSTRUCTION



Spare and Wear Parts for Crushing Equipment.

About the company

Element Mining and Construction (ELMC) is a Finnish manufacturer of spare and wear parts for crushers and slurry pumps providing a high level of quality and service

Why choose Element?

Quality without compromises

At Element, we understand the importance of high-quality, reliable spare and wear parts for your mining equipment. That's why we are committed to manufacturing and selling top-notch parts with the best value for money. Our parts are rigorously tested and held to the highest standards, ensuring that they are durable, long-lasting, and perform just as well as of the equipment producers. By choosing us, you experience the peace of mind that comes with knowing you are using the best spare parts available on the market.

Wide warehouse program

Our program starts with a thorough analysis of the equipment installed at mining enterprises, allowing us to predict demand and fill our warehouses with the products you need most. And with strategically located warehouses in Tampere and Porto, we can minimize delivery time. You can trust that you'll always have access to the spare and wear parts you need, when you need them.

Advanced supply chain management

Unlike other companies that rely on third-party suppliers, we have direct control over our suppliers through our own drawings, instructions, and on-site audits. This not only ensures the quality of our products, but also allows us to respond quickly to changes in demand and deliver products on time and on budget. Our supply chain operations are designed to maximize efficiency, allowing us to keep fair prices. We are committed to responsible sourcing and we work tirelessly to ensure that our supply chain is free from any unethical or exploitative practices.

Element is a reliable manufacturer of spare and wear parts for crushers

The range of components for crushing equipment includes: shafts, bushings, gears, bearings, frame parts, linings, jaw plates, and more. Element is not limited to the product line of one manufacturer and offers spare parts for most large industry brands such as Metso®, Sandvik®, Telesmith®, Terex®, FLSmidth®, and Kleemann®.

* Element Mining and Construction Oy (ELMC) is not an owner or representative of the brands of the equipment specified in the brochure. ELMC's spare parts and components are compatible with the specified equipment, and are manufactured and provided with warranty obligations of the Element trademark. The designations of trademarks and commercial designations of third parties are given in the brochure for informational purposes only and are not used for the individualization of ELMC's products.

Parts for jaw crushers

The replacement of wear parts for jaw and other types of crushers is a significant expenditure for any crushing and processing plant. The more often a plant needs to carry out repairs, the less efficient its production processes will be, which ultimately leads to lower profits.

For crushers, Element produces cost-effective liners that can solve two tasks at once: firstly, they increase the wear lifetime, which means that downtime is reduced; secondly, they reduce the operating costs of the plant. The range includes parts for crushers of various designs.



SUCCESSFUL CASES

INCREASED THE OPERATING TIME OF JAW PLATES

One of the problems that customers turn to Element for is insufficient jaw plate operating time, which is often due to the use of an unsuitable profile. One customer in particular faced such a problem.

Based on the drawings of the linings used by the customer and the feed parameters, our engineers offered jaw plates with a new profile design and selected an alloy more suitable for crushing hard and abrasive rocks.

Wear parts for jaw crushers

Jaw plates

Element produces jaw plates made of manganese steel. The content of manganese, chromium and other alloying elements is selected depending on the strength and abrasiveness of the crushed rock.

STANDARD ALLOYS

Alloy	Element Standard	Purpose
Mn13Cr2	C	For non-abrasive rocks of small and medium strength
Mn18Cr2	D	For general use

Element TiC

Element TiC — linings made of standard alloys C or D and reinforced with titanium carbide inserts. They show higher resistance to shock loads and cracking. This effect is achieved by special casting processes and heat treatment of the finished product.

During the tests, the linings with inserts showed a greater operating time in comparison with classic manganese steel wears without inserts.

Element TiC plates allows one to:

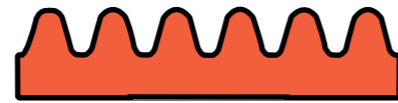
- ✓ Increase the intervals between plate replacement
- ✓ Reduce the number of maintenance stops
- ✓ Reduce the unit production costs, per unit of the final product

Cheek plates, deflector plates, and fasteners

The cheek plates of the frame and the deflector plate of the swing jaw are made of manganese steel or wear-resistant steel with a high Brinell hardness.

Also, we offer standard fasteners, such as bolts, nuts, washers, in addition to special fasteners: wedges, clamping and supporting strips.

PROFILES



CORRUGATED

This profile is used for layered materials with a large amount of fines in the feed at small close side settings values.



UNIVERSAL

For general use.



COARSE CORRUGATED

This profile is used for layered and abrasive materials with a large amount of fines in the feed at large close side settings values.



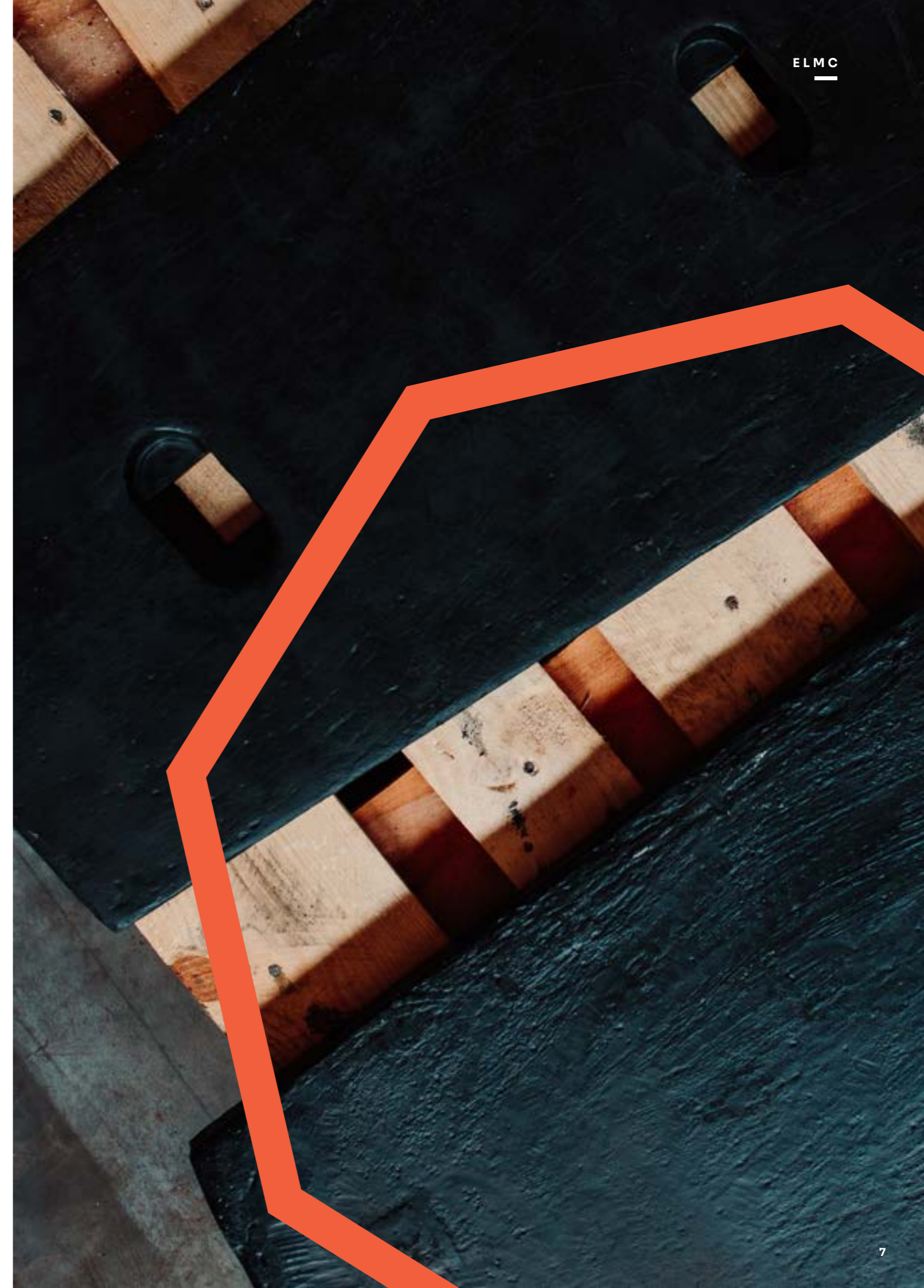
QUARRY

For heavy duty conditions. This is used for crushing particularly hard and abrasive materials. It is recommended to use it together with plates of the Coarse Corrugated or Sharp Tooth types.



SHARP TOOTH

This profile provides fantastic grip.



Parts of cone and gyratory crushers

WEAR PARTS

Mantles, bowl liners, arm guards, pinion shaft arm liners, top shell and bottom shell liners, feed cones and plates.

CAPITAL PARTS

Shafts, frame parts, gears, eccentrics.

Element has developed a range of alloys for different application conditions: the mantles and bowl liners are usually made of manganese steels, grades C, D, D2, and for heavy conditions we use additional alloying elements: molybdenum, nickel, titanium, and others.

AUSTENITIC MANGANESE STEEL GRADES

C

Mn 13 % Cr 2 %

For non-abrasive rocks of small and medium strength.

D

Mn 18 % Cr 2 %

For general application. An Improved formula with additional chromium alloying. A significant increase in hardness after heat treatment, increased resistance to abrasive wear.

D2

Mn 22 % Cr 2 %

Suitable for the most abrasive of rocks. We recommend using this material at the second or third stages of crushing. Possesses the highest resistance to abrasive wear among Element's line of manganese steels.

SPARE PARTS

Bushings for various purposes, torch rings, head nuts, thrust bearings, supports, brackets, plates, seals, gaskets, springs, conical and spherical bearings.



SUCCESSFUL CASES

INCREASED THE OPERATING TIME OF CONE LINERS

One of Element's recent customers, a gravel pit in Romania, produces crushed river aggregates containing silica. The medium cone crusher runs around 18 hours per day. Initially, its management procured concaves and mantles from the equipment manufacturer several times per year. Their service time was 700 working hours and although the customer was satisfied with the performance, it resulted in high repair costs. The performance of alternative suppliers was poor as their liners served only 350 working hours on average. With the use of standard orange liners, we helped the customer to save on equipment maintenance.

Now the customer is using a second set of Element's liners along with other spare parts such as a main shaft sleeve, eccentric bushings, a main shaft step, step washers, piston wearing plates, head nuts, inner head nuts, and dust seal rings.

THOR technology

THOR — technology for modifying the structure of manganese steel

Element uses THOR technology for the production of liners for cone and gyratory crushers. The use of THOR wear-resistant linings directly affects the increase in the inter-repair period, reduces the specific production costs per unit of the final product and reduces the number of maintenance stops.

THOR series linings wear out less due to improved crystallization conditions, reducing the amount of non-metallic and gas inclusions in addition to harmful impurities. The life capacity of THOR linings, on average, is 30% more than standard wear parts. All standard C, D, D2 alloys can be modified using THOR technology.

Characteristics of THOR linings:

- ✓ **Increased strength and hardness when compared to standard linings, which are made of austenitic high-manganese steels;**
- ✓ **Better resistance to abrasive wear;**
- ✓ **The ability to withstand high mechanical loads: high-strength and resistance to deformation.**



SUCCESSFUL CASES

THOR LININGS HAVE INCREASED THE REPAIR INTERVAL

The company in question installed a set of THOR linings on a large Symons type cone crusher. The operating conditions at the quarry were extremely tough. The THOR linings lasted 39 days, during which they processed 158,428 tons of stone. According to Element's analysis, the lining's operating time was higher than the average of ten previous sets before it, which were provided by other manufacturers over 2021. The average capacity of non-branded liners was 73,000 tons.

A GYRATORY CRUSHER HAS DOUBLED ITS OPERATING TIME

A large ore mining and processing plant installed a set of THOR linings for its crushing cone (upper, middle, lower linings) and one set for the crushing bowl (linings of the first and second belts) of its gyratory crusher.

The previously used set of cone linings had an average life span of 1.8 million tons, while the THOR linings passed through 3.6 million tons. At the same time, the cost of Element's linings per ton of processed ore is about 25% lower.



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