LAVE

Lapin Vesileikkaus

Versatile Manufacturing Expert

10

2011 - 2021

When on-time delivery matters

The purpose of our business is to bring our clients added value with the high-quality services we provide. We comply with the ISO 9001 quality standard. We are also part of the Reliable Partner service maintained by Vastuu Group.
With the help of our skilled personnel and a diverse collaboration network we can respond to our clients' needs in a holistic and agile manner. Constant customer interaction and methods development make us pioneers in our industry.
Our operations combine design expertise and practical experience to ensure a smooth implementation of projects.

From design to manufacturing, we give you what you need!

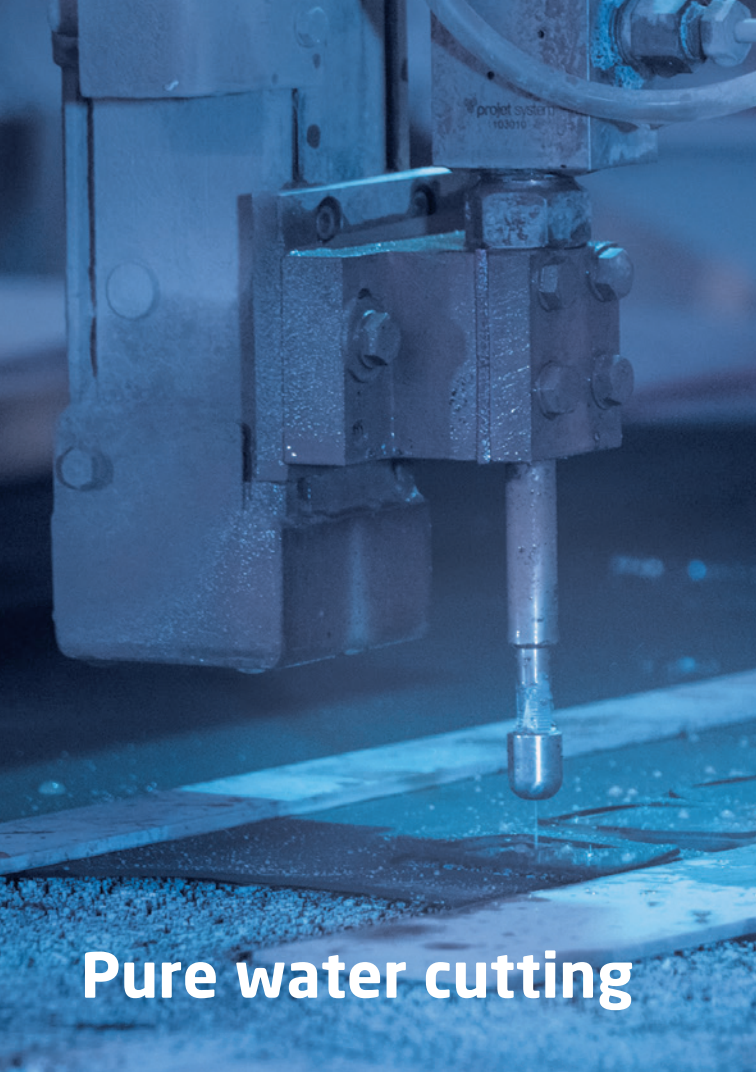
Water cutting methods

There are two different water cutting methods: pure water cutting and abrasive waterjet cutting (adding sand to water). Cutting takes place on the cutting table, where the water jet cuts through the material. The stream decelerates as the water impacts the water in the catcher tank.
Both cutting methods are based on applying high-pressure water spray through the nozzle of the jet on a small surface area. A piston pump creates high water pressure with lower hydraulic pressure.

In abrasive water jet cutting, sand is added to the water. At the head of the accelerator tube, the sand almost reaches the water flow rate that can reach up to 1 000 m/s.

In pure water cutting, only water is used for cutting. The amount of kerf is significantly smaller than with the abrasive method. Abrasive water jet cutting is excellent for cutting aluminium and wear-resistant steel. The machining allowance is considerably smaller than with other cutting methods.
The main advantage of waterjet cutting is that it does not cause thermic transformation in the cut material. This way, the material properties remain as they originally were.
Another benefit is that you can cut an almost limitless range of materials. The cut size does not depend on the material strength as with other cutting methods.

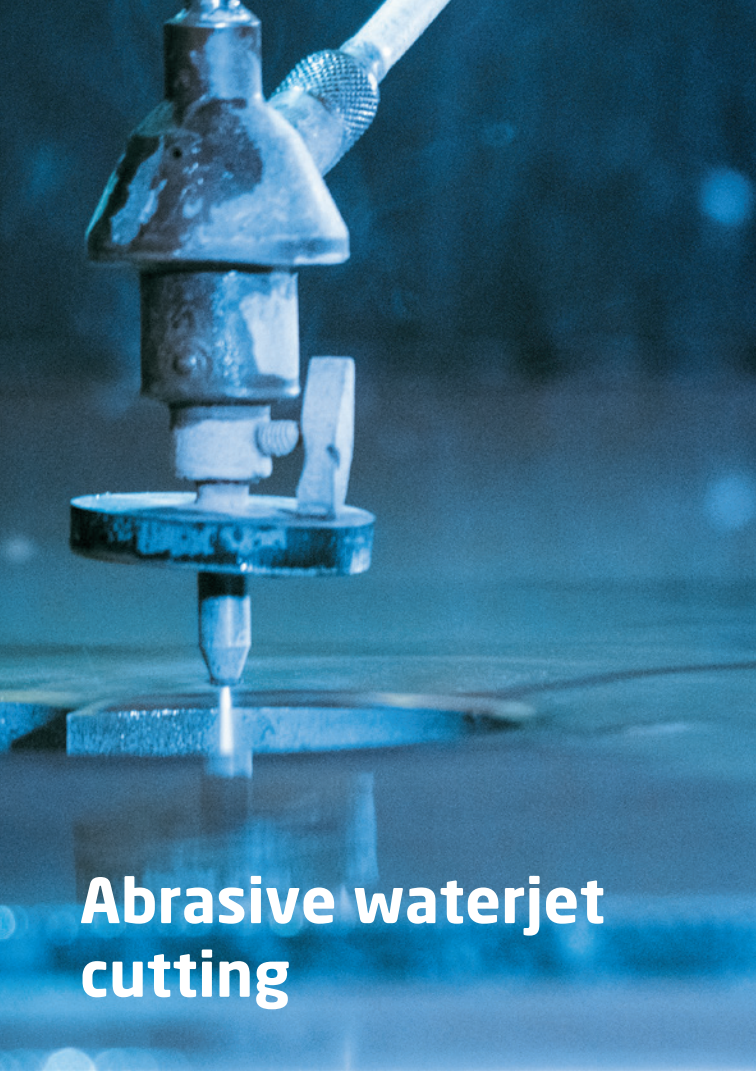
Water cutting is suitable for almost all kinds of materials up to the strength of 100 mm. The cutting areas of our equipment are 1500 x 3100 mm and 3100 x 6100 mm.



Pure water cutting

Pure water cutting uses only clean water. With this method, the kerf width is about 0.3 mm. When cutting with clean water, the materials are limited to soft materials such as rubber, thin plastics, plywood, and soft, porous materials such as cellular rubber.
As a support surface for pure water cutting, we use a cell-like surface to keep the cut material away from the water surface. It also prevents the material from moving due to water bursts. As the kerf is narrow, this method also allows

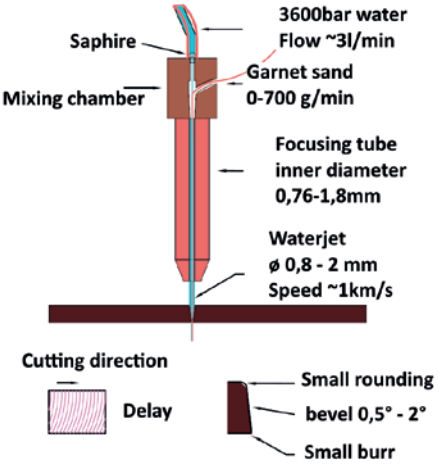
producing smaller shapes. For example, you can use pure water cutting to make surface seals with different rubber types. You can also purchase the material through us, saving time and effort.
Thanks to our diverse network of suppliers, we can deliver just the right material for each need. If necessary, we manufacture parts according to a model or drawing. In this case, you do not necessarily need CAD images to produce the parts.



Abrasive waterjet cutting

In an abrasive waterjet cutting, sand is added to the water. Adding sand makes it possible to cut hard and thick materials. In addition, abrasive waterjet cutting is an excellent method for processing special materials such as all types of plastic, wood, titanium, stone, glass, special and wear-resistant steels, stainless, acid-resistant, and ultra-strength steels, armour steels, hard-coated and tempered steels.

If we compare water cutting and flame cutting, you need to leave a machining allowance of 13 mm when flame cutting 60 mm wear-resistant steel. With a 40 mm S355 plate, there must be 7 mm machining allowance to achieve the material hardness. With water cutting, you only need the machining allowance necessary for finishing, maybe 2 mm. This way, you can save the material required for machining allowance in wear-resistant steel to up to 85 % and with S355 material, up to 65 %. For large batches, this means significant overall material savings.



You can also use abrasive waterjet cutting to manufacture plates complying with the 1090 standard for the construction industry. Depending on plate thickness, the standard has a minimum diameter for flame cut holes. Smaller holes must be made mechanically by drilling or by water cutting. The cutting surface is slightly conical, and the lower surface has a small overpress.

Bevel cutting

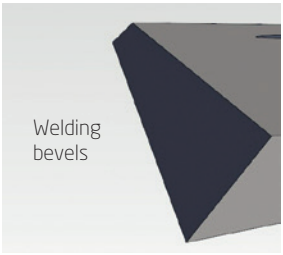
Our new water cutting machine is **the most versatile one in Northern Finland**. We can work on entirely new shapes thanks to the bevel cutting head on the device. The bevel cutting method is relatively new, and its opportunities have yet to be fully exploited.
You can easily manufacture even large parts, as the machine can cut very large plates. The size of the cutting table is up to 3 x 6 meters.

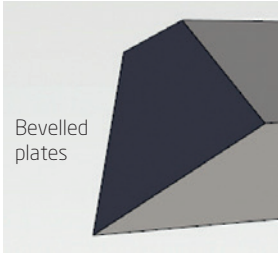
Traditional
direct cutting

Bevel cutting
max. 60 degrees

Combination cutting
that combines both
cutting modes

Examples of shapes that the machine's 60-degree bevel head allows:

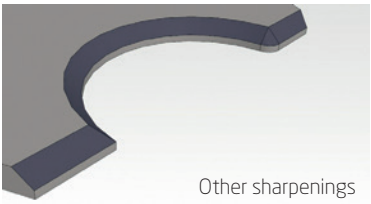




In our stock we have multiple materials

Check www.lave.fi/varastomateriaalit

Countersinks



Other sharpenings

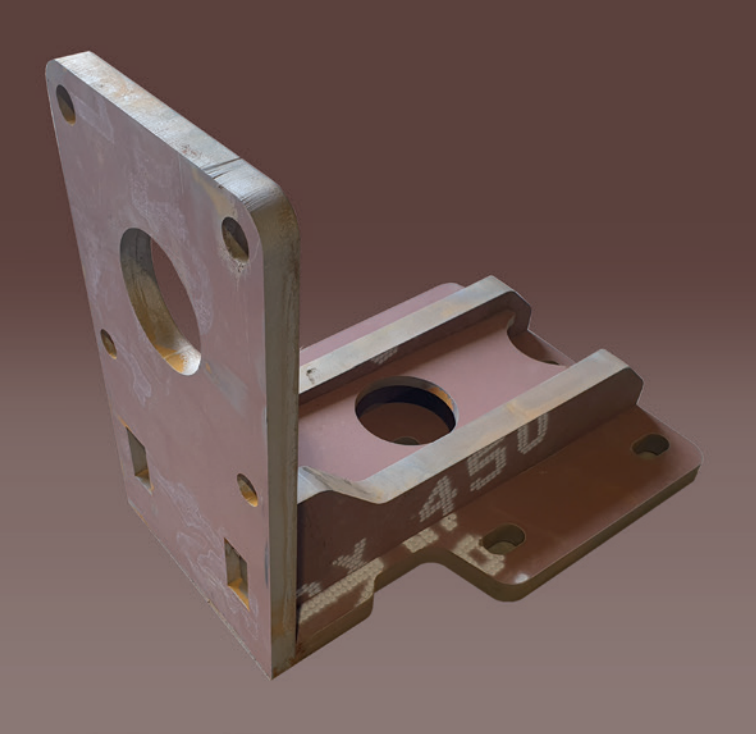
HARDOX®
WEARPARTS

Experts at your service

The Hardox® Wearparts network is SSAB's global collaboration network to identify and solve various steel wear challenges. We are now part of this comprehensive network as the only operator in Northern Finland. We have at our disposal wear experts from all over the world, as well as up-to-date information on novel materials and related know-how. This way we can solve our clients most demanding challenges.

Longer service life

We can find solutions for most demands with our engineering and water cutting expertise and the Hardox® Wearparts network. With the right choice of materials, you can multiply the product's life span, saving costs. By optimising the thickness of the material used, the part can have a lighter structure, giving you cost savings.
Alternatively, you can retain the material thickness, and this will give your product a longer service life. We will follow up on the wear of the product together with the end user. Hardox® products do not show any unusual wear or deviation because they are hard through and through (the core hardness is 90 % of the guaranteed minimum surface hardness). No other wear-resistant steels can guarantee this feature.
With the Hardox® Wearparts network, we can implement the machining of challenging materials to achieve the best result. Challenge us to make your products more durable! Please get in touch with us by calling +358 50 3394 778. Or come over to our office to chat and have a cup of coffee or invite us over to assess your needs.



Hardox products

Hardox450

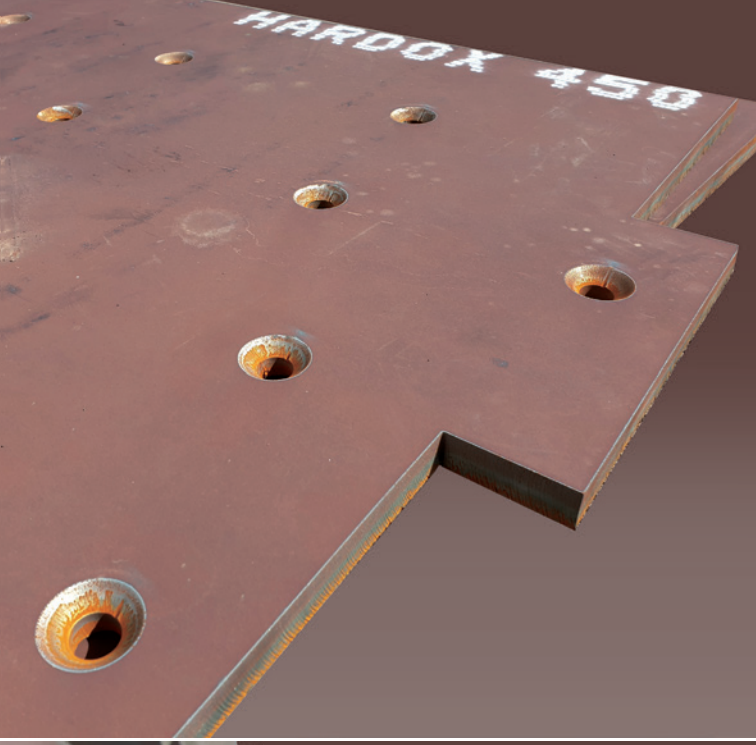
Hardox® 450 is versatile abrasion-resistant steel. It combines good bendability and weldability and excellent impact toughness.
Hardox® 450 has the same welding properties as Hardox® 400. We currently have Hardox® 450 of almost every strength between 5 and 40 mm on our shelves. When selecting materials, every additional hardness level increases the life span by 20 -30 %. For example, switching from Hardox® 400 to the Hardox® 450 we store gives your product a much longer service life.

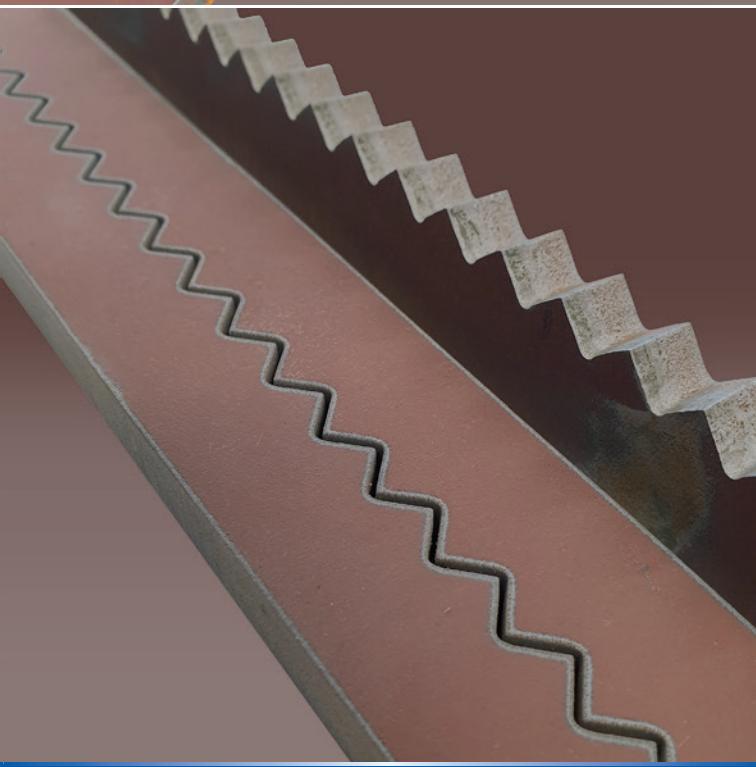
Hardox HiAce

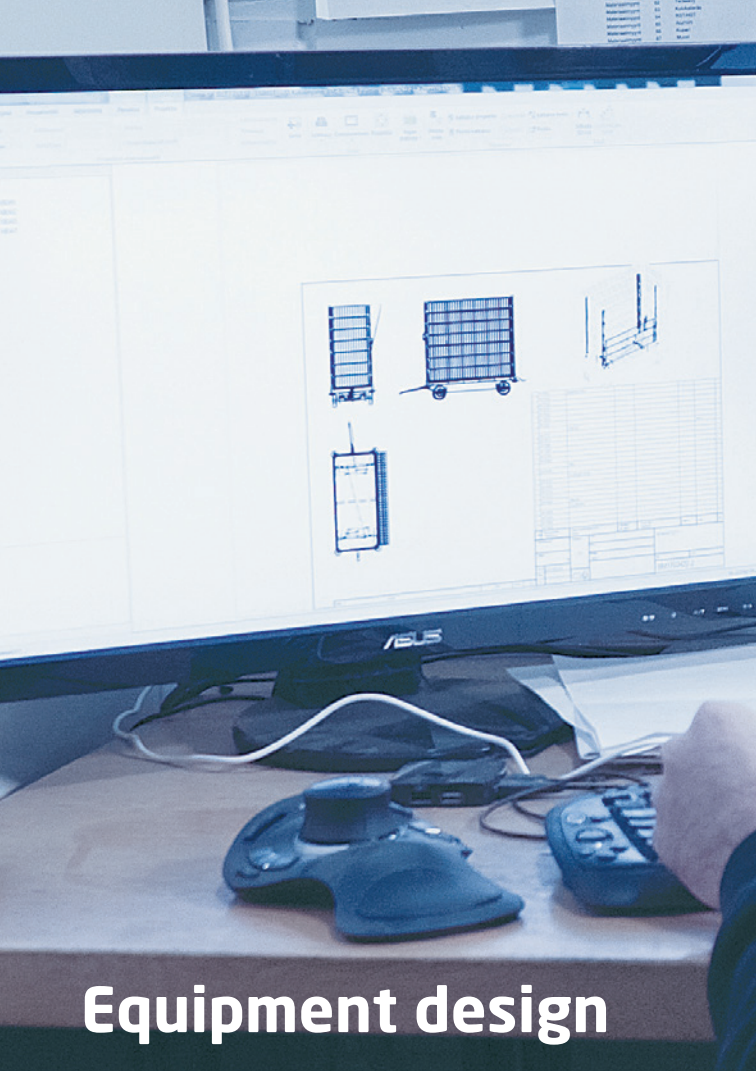
Hardox® HiAce is an excellent material against abrasive wear and corrosion. HiAce has excellent machining capabilities similar to Hardox® 450.
Hardox® HiAce is a corrosion-resistant steel sheet for challenging, corrosive, and abrasive conditions that are common in municipal and industrial waste management (garbage trucks), energy utilities using waste, as well as mining and refining industry (debarking plants).

Hardox® 500 Tuf

The next generation Hardox® 500 Tuf wear plate is both high strength and extremely hard, and its toughness is guaranteed.
Hardox® 500 Tuf plates combine the best features of Hardox® 450 and Hardox® 500 steel. The result is a wear plate for which there are no real competitors in the market. Other Hardox® grades are also available through us (e.g., Hardox® 550 and Hardox® 600).

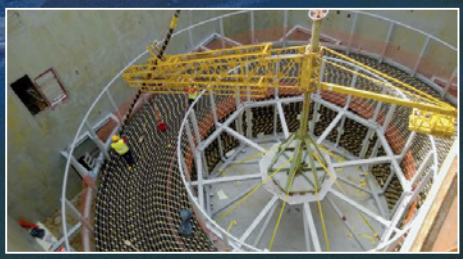

HARDOX 450

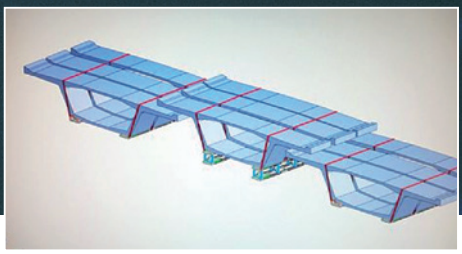




Equipment design

Lave engineering department specialises in solving mechanical problems, modernising old machinery and equipment, and developing and manufacturing new products. Our expertise is in the design of machinery and equipment. With the help of modern 3D software, we can quickly produce manufacturing drawings based on the client's idea. We also have experience in welding and installation work, ensuring the quality and finishing of the end product. We use methods that can be





easily applied to the manufacturing process. Our strengths are knowledge of manufacturing methods and continuous manufacturing process monitoring.
If necessary, we analyse the strengths of parts and assembly fixtures. The analysis helps optimise materials and their strengths. It saves our client money.
The design department's services also include technical documentation and drawing services.

Product manufacturing and development

We manufacture products from design to implementation thanks to our versatile **production expertise**. We can manufacture products without ready-made drawings or by the client
according to the drawings. We aim to make the manufacturing process as easy as possible for our clients. We design the product in cooperation with our client based on their ideas. In manufacturing, we use our own expertise and, if necessary, our cooperation network. We have manufactured for our clients e.g.

- Cable winches
- Hose reels
- Hydraulic accumulators
- Catch basins
- Hydraulic equipment
- Lifting equipment for ship loading
- Cable tanks for ship loading

In addition, we modernise, repair, modify and design old products to make them more durable or functional. We have

- provided fenestration for sea containers to facilitate unloading
- furnished containers for construction site use
- modified sea containers into kiosks
- modified sea containers into mobile gates
- repaired a hospital trolley and its basic functions
- modernised interchangeable containers

Repairs

Our installation department specialises in welding and repairing steel and aluminium structures. In addition, it also performs a wide range of assembly work. Water cutting makes it easy to implement various aids to facilitate welding and installation work. Our equipment includes Mig, Tig, rod and gas welding equipment.

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