

Klaveness tests sandblasting from the oil industry on ships

The shipping company Klaveness will be the first to use a special vacuum blasting technique to remove paint. The goal is to reduce plastic emissions in the ocean.



The Klaveness ship MV Barcarena will be the first to test out Pinovo's sandblasting technology to remove paint. (Photo: Klaveness)



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Klaveness Combination Carriers (KCC) had long overlooked the fact that the maintenance of the company's ships led to the release of microplastics into the ocean, the company said in a press release, but now they want to remedy it by using a sandblasting method that is new in the maritime industry.

The method is to use a sandblasting machine that sucks up and stores particles. Pinovo has previously used the technology for service in the oil industry, on bridges and in the armed forces.

"It is important for us to get a case in the shipping industry. Now we're going to test it out on one ship, and then the plan is to implement it on more. For us, it is first and foremost important to get a foot inside," says Joakim Olausson, Operations Manager at Pinovo.

Two million tons

It is the paint that is released from the ship when the steel rusts, which eventually decomposes into microplastics in the sea. In the press release, they estimate that a total of between 1.5 and

2.25 million tonnes of paint from ships and installations end up in the sea annually, and that this is the second largest source of plastic emissions in the Norwegian Sea.

The calculation originates from Pinovo and is previously presented at the [World Economic Forum](#). The assumption is experience from manufacturing that suggests that five times more paint falls off ships than the OECD has previously calculated.

The estimate is based on six million tonnes of paint being used as marine coating on steel structures and ships annually. And about half the contents of the paint are plastic. Of the paint that falls off, they estimate that between 50 and 75 percent end up in the sea.

Paint residues were also called the second largest source of emissions, after residues of car tires and road markings, in a report by [Mepex for the](#) National Directorate of [Public Safety](#) in 2014.

Oil business

TU wrote about [the sandblasting company as early as 2015](#). At the time, they bet all the cards on the oil industry, and experienced bad times when the industry deprioritized maintenance.

"We now see shipping as one of our markets. We have already carried out assignments on bridges and some assignments for the Norwegian and British armed forces. So we have expanded the market since 2015, but oil is still important to us," says Olausson.

In the oil industry and the armed forces, microplastics have not been the most important argument for using the emission-free sandblasting method, but rather safety. In the oil industry, it was important to have a dust-free solution that could create a surface profile also on live pipes in fields with a risk of explosion.

In the armed forces, the method is used on submarines and frigates where the goal is not to get dust particles in sensitive electronics.

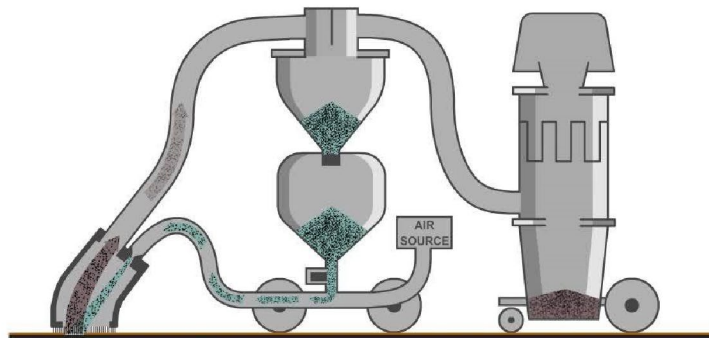
"This with microplastics has come up in recent years. That's a big problem, but few are really aware of how much is actually released via paint from ships. The figures on this are uncertain, but we are working with a research institution that will provide more clarity on this this summer. We know that more paint will drop towards the end of its lifespan," says Olausson.

How the solution works

The appliance itself works by feeding blasting sand (usually aluminium oxide) from a pressurized sandblasting pot to the sandblasting tool. There, the surface of the ship is sandblasted. The paint residues, blast sand and rust are sucked back into a pre-separator where the blow sand that can be reused is dropped into a silo.

Dust and air are sucked on to a suction unit where waste is collected in a container, while the air is filtered and released.

"When you pause the vacuum sandblasting, a valve opens that releases blasting sand from the silo to the sandblasting pot for reuse. The blasting sand can be reused 10-20 times. A proportion crushed to dust for each round cannot be reused and sent to the waste container. The equipment can be supplied with HEPA filter if you are going to work with, for example, lead paint," writes Chief Designer Torleiv Njaa in Pinovo.



Grit hits surface to be treated. Dust, corrosion, paint and grit is removed

Sandblasting

This is how the sandblasting works.