

How the PortBin treats oil films in ports

Some customers have been asking for an oil absorbent as an ad on to the PortBin. To add a small absorbent is possible, but makes no sense, either from an economical or biological point of view.

Here is the explanation:

First some input from The Norwegian Coastal Administration:

In oil spill recovery a combination of chemical and mechanical dispersion is a part of the solution. Mechanical mostly being waves in offshore situations. For larger volumes, removal is always needed.

What about the smaller leakages in the Port?

When having continuous leakage of smaller volumes of oil (making the well known thin colourful oil-film). Find the source and stop it. If it is smaller accidents, we are talking about **Code 1, 2 and 3** in the table above. The thin film will be dispersed naturally by mechanical forces like braking waves. In ports however there are often calm water. Under such circumstances the strong suction propeller inside the **PortBin tide** will act as «braking waves» and be the mechanical force disperse the film.

Code	Description	Thickness of the layer (µm, micro meters)	Liters/km ²
1	Sheen	0,04 - 0,30	40 - 300
2	Rainbow	0,3 - 5,0	300 - 5000
3	Metallic	5,0 - 50	5000 - 50 000
4	Discontinuous, True Oil Color	50 - 200	50 000 - 200 000
5	Continuous, True Oil Color	More than 200	More than 200 000

Table1: Terminology for different layers of oil on water used oil recovery handling.

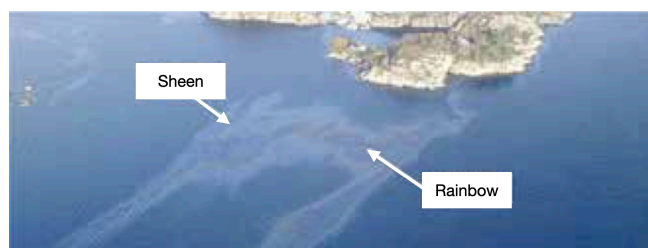


Illustration 1: The oil flake is only Sheen and Rainbow and is not actionable.

SINTEF in Norway, is one of Europe's largest independent research organisations. Sintef states: *PortBin tide is a weir skimmer and is using a propeller for suction of surface water. The surface water is spread out and diluted into water below the surface. In this process thin oil films sucked down will be given a mechanical treatment and will be mixed into the underlying water masses. Thin oil layers in the categories Sheen, Rainbow and Metallic will mostly be oil droplets <70µm and will be naturally dispersed and be integrated in the water column.*

The natural marine bacteria are always there. Using a **PortBin** boosting the biological process is absolutely the most environmental friendly solution.

Adding an absorbent to a PortBin will be a very low volume of absorbing capacity, and in best cases work badly. They are mostly made of poly propylene. They will over time lose its hydrophobic abilities and even generate micro plastics. The absorbent has to be replaced on a regular basis. It takes time, cost money, use material and has to be disposed. It will be environmentally suboptimal compared to let the environment do the job itself. If the oil spill is more substantial, it will be more than the natural capacity of the environment. This is environmental damage. Then we use absorbent booms. All absorbent booms delivered by SpillTech are made of cotton wool, with lowest possible environmental footprint.

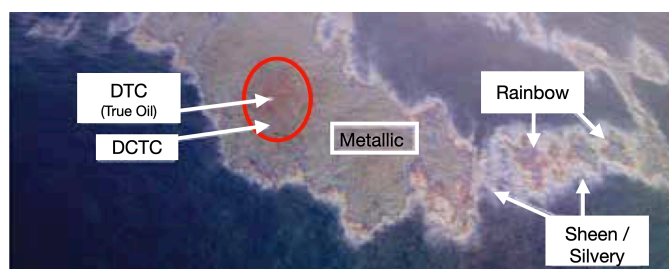


Illustration 2: The oil flake contains all the codes. Action must be taken towards the thick part, within the red ring. (CTC = Continuous True Oil Colour. DCTC = Discontinuous True Oil Colour.)

Technology for oil spill protection is our history and background. Using the right tool is to understand what will be the optimal environmental solution. Acting within the carrying capacity of the environment is a part of this equation.