

# Controlling Nonpoint Source Pollution

## Using Vacuum Sanders

### Description

The dustless vacuum sander targets paint chips and other debris produced through hull maintenance activities such as bottom sanding. As opposed to traditional equipment, this machine's sanding surface is ventilated to allow the attachment of a vacuum device which automatically collects debris as it is removed from hull surfaces and before it can reach the open environment. For more information, please visit [The Environmental Guide for Marinas](#).

### Implementation

The equipment purchased was the Fein Dust Free Basic Sanding System. This high quality system included: Msf 636-1 Random Orbit Sander; Low Profile Dust Extractor with Auto Start; 16' Hose and Fittings; and a 5 pack of 1 micron filter bags. The equipment came with a full one year warranty and extended support plan which allows the owner to return the equipment to the factory every six months where it is cleaned and overhauled at no charge. For your local Fein distributor call 1-800-441-9878. The equipment was used by staff and made available for tenant use at no cost. Tenants were notified by word of mouth, the mailing of two informational flyers (see Appendix D of hard copy) and through the posting of these same flyers within the participating marinas. The equipment was offered on a first come first serve basis. Both staff and tenants were instructed on proper operating procedures before using the equipment and asked to fill out a brief questionnaire upon returning it (see Appendix D of hard copy). The collected information was then compiled with the amount of material collected by the machine to establish a basis for evaluating its effectiveness.



### Evaluation

**Cost:** \$1,357 in equipment with an additional \$50 in time and printing.

**Pollutants Collected:** With an estimated collection rate of 98 percent (Grlovich, personal communication, 9/19/96) and in using standard 80 grit sand paper, this particular vacuum sander prepped 1,383 feet of vessel bottoms and in the process collected 171 pounds of bottom paint debris. By calculating a ratio we can see that the machine averaged 1.98 ounces of collected material per foot of boat sanded.

**Cost Effectiveness:** With the project survey identifying that only 50 percent of the

responding boaters actually sanded their hull this year, consider this: If just 35 percent of the State's 32,052 registered vessels (McGrath, personal communication, 9/19/96) had their bottoms sanded with this type of equipment each year, at an average length of 20 feet/per boat (McGrath, personal communication, 9/19/96), approximately 27,765 pounds of solid waste could potentially be prevented from reaching the open environment annually. When considering the individual installation of these machines, the initial purchase cost appears to present a barrier to such wide spread use, but recent studies have shown that this is not necessarily the case. According to Ross 1996, in addition to cleaning up the environment the use of vacuum sanders can dramatically increase the efficiency of sanding operations while also generating significant profits through customer rental.

### **Lessons Learned/Recommendations**

- Thoroughly research the market before purchasing your machine. Compare the overall cost, size of powerheads, quality of vacuum motors and filters, and the specifics of the individual warranties and product support plans.
- Consider developing a rental scheme to compensate for the initial investment. It can either be set up strictly to cover the cost of purchasing and operating the equipment, or it can be structured so as to become a profit center for the marina. Just remember that over the long run: the lower the cost to the user, the more users you will have and the more pollutants you will capture.
- Publicize, publicize, publicize. If you do not get the word out, the machine will not be used enough to make a return (either in profits or pollutants collected) on the initial investment.
- In addition to the mailing or posting of temporary flyers, consider posting permanent signs in hull maintenance areas which note that the equipment is available for tenant use.
- Do not forget about the benefits of the word-of-mouth technique. Inform staff that whenever they see someone sanding with traditional equipment they should advise them that a professional vacuum sander is available for their use which is more efficient and will protect their health as well as that of the environment.
- Always provide users with operating instructions and make sure that they understand them before using the machine. Take any steps necessary to limit liability on the part of the marina.
- Monitor the use and materials collected by the equipment for future reference. Such information could prove invaluable in making decisions regarding the continuation of the vacuum sanding program and/or regulatory compliance.

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