NCHRP
Project 25-25 (04)
Final Report

Environmental Stewardship Practices, Procedures, and Policies for Highway Construction and Maintenance

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http://environment.transportation.org/documents/nchrp/NCHRP-25-25-04.htm

Caltrans engineers are experimenting with fenders made of recycled plastic and other consumer products that can resist marine borers better than wood and not pose the environmental threat that most wood treatments present. After evaluating different materials, Caltrans found that recycled plastic with fiberglass rebar at the corners or bridge fenders is an acceptable alternative. Although it is twice as expensive as treated wood, initial studies suggest it lasts three times as long.(*i[799]*)

Aluminum Sign Recycling and Chromate Coating Elimination

In North Carolina, aluminum sign recycling is conducted through arrangements between the NCDOT and Department of Corrections. DOC purchased a Hydrostripper that utilizes a high-pressure water system to remove old reflective material from the signs. Because it uses water, the signs are not ground away which allows the aluminum to be used over and over. The most outstanding feature of this method is that the aluminum is not affected during the cleaning process, thereby eliminating the need to reapply the chromate coating.

The Missouri Department of Transportation (MODOT) began their sign reclamation program in 1978. The total cost of the original sign reclamation plant and its operation was $1.1 million. The use of the aluminum sign blanks, which were refinished that year in lieu of purchasing new aluminum sign blanks, saved MODOT more than the total cost of construction and operation of the reclamation operation. In each year of operation the plant has returned to MODOT than the original cost. The original plant was equipped with a metal sander, a press to straighten damaged blanks, along with a metal shear, which was used to cut away damaged parts of a blank in order to create a smaller sign blank rather than scrapping the damaged sign. In 1997, the reclamation operation was turned over to the Missouri Department of Corrections since they could do the work at an even greater savings to MODOT. Since that time various improvements have been incorporated to enhance the operation. A major change involved switching from a sanding operation to remove the sheeting material to a Hydro-Stripper which performs the cleaning operation. This method has an added advantage of not removing the aluminum coating of chromate that is used to provide better adherence of reflective sheeting or paint. The current cost of reclaiming rather than purchasing new sign blanks is a 75 percent savings. For the larger extruded structural signs the saving is slightly less. The saving to MODOT in 2003 was $3.5 million dollars.(*ii[800]*)

5.8. MAINTENANCE OF DIRT AND GRAVEL ROADS

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