

**National Center on Accessibility
Temporary Beach Surface Accessibility Study
Submitted to the National Center on Accessibility
by
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Executive Summary

The purpose of this study was to investigate the utility of various types of temporary beach surfaces that may provide accessibility to people with mobility impairments. The objective was to provide information to managers of beach areas that would allow them to compare the options regarding temporary surfaces for beach access.

The study was limited to the assessment of seven temporary surface products that purportedly create effective access for persons with mobility impairments across the sand to the water's edge: Diamond Rubber Mat, Ecotrack, Lattice, PATH, Recycled Plastic Lumber, Safety Deck, and Super Deck. The study focused on consumer perceptions of the surfaces as well as costs, installation time, and maintenance.

A total of 72 subjects participated in the study. They ranged in age from 19 to 92 years with a mean age of 50.6 years. The subjects had a variety of disabilities—no one disability represented more than 16.7% of the total. Only four subjects (5.6%) did not use an assistive device. More than half of the subjects (61.5%) used some type of wheelchair or scooter. A third of the subjects (34.7%) used either a motorized wheelchair or electric scooter; and another 27.8% used a manual wheelchair. The majority of subjects functioned independently; 94.4% needed no or minimal assistance in crossing the beach surfaces and 59.7% reported they did not usually need assistance in physical activities.

Subjects also reported on their beach behaviors. Most subjects (84.7%) reported they avoided the beach “because it's difficult getting across the sand.” Nearly all subjects (95.8%) indicated they would visit the beach more often if they could get across the sand more easily. Independence on the beach was critical to the subjects, as 70.8% reported that it was important for them to be able to travel across the beach without assistance.

Four of the surfaces were rated as extremely easy to install: Lattice, Recycled Plastic Lumber, Diamond Rubber Mat, and PATH. Of these, Lattice was rated as the easiest. Recycled Plastic Lumber was rated as one of the easiest surfaces to install despite the fact that installation time was significantly longer than any other surface. Two surfaces, Ecotrack and Super Deck, were rated moderately easy to install; and one, Safety Deck, was rated as extremely difficult to install.

Weekly sand build-up occurred on each the surfaces. The build-up was easily swept or shoveled (depending on the amount of sand) on all but one of the surfaces. Ecotrack was reported to be more difficult to clear due to the indentations in that surface. Erosion around the edges was a problem for two of the thicker surfaces: Recycled Plastic Lumber and Super Deck. The drop off caused by the erosion produced a

potential safety problem. Erosion occurred around each of the surfaces but wasn't as noticeable on the thinner surfaces.

After using all of the seven surfaces tested, subjects were asked to rank the top three surfaces they preferred using. No surface was selected as first choice by a majority of subjects, though three of the surfaces (Diamond Rubber Mat, Ecotrack, and Recycled Plastic) were selected as first, second or third choice by a majority of subjects. Diamond Rubber Mat was selected first choice by the largest number of subjects (29.6%) and was also selected as first, second or third choice by the largest number of subjects (78.7%). Recycled Plastic was first choice by 22.5% of subjects and was among the top three choices of 52.1%. Ecotrack was selected as first choice by only 16.9% of subjects; but it was selected as first, second or third choice by 78.7% of subjects.

Subjects' overall preferences for surfaces were further explored through their responses to questions in three major areas of function: tactual, mobility, and aesthetic. Tactual function was examined through subject perceptions of surface comfort, roughness, and slipperiness. There were no significant differences among subjects' perceptions of the surfaces' slipperiness. Only the uncomfortable ratings for PATH were significantly different from those of the other surfaces. PATH was perceived as less comfortable than the other surfaces. PATH and Safety Deck were rated as significantly rougher than the other surfaces.

Examination of the second area of function, mobility, while important in itself, also provided insight into subject ratings of tactual function. Four elements of mobility were examined: stability, control, ease of movement, and turning. Safety Deck and PATH were rated as significantly less stable than Recycled Plastic, Ecotrack, and Rubber Mat. PATH was rated significantly less stable than Safety Deck. There were no significant differences among the other surfaces on stability. Subjects perceived that they had less control of their movements on PATH than on any of the other surfaces except Safety Deck. There was no significant difference between PATH and Safety Deck, but Safety Deck was perceived as providing less control than Ecotrack and Lattice. There were no significant differences among the other surfaces. Ease of movement was perceived as significantly more difficult for Safety Deck and PATH than for any of the other surfaces. There was no significant difference between Safety Deck and PATH. There also were no significant differences among the other surfaces. Once again, PATH and Safety Deck were perceived as more difficult to turn on than any of the other surfaces. There was no significant difference between Safety Deck and PATH. There also were no significant differences among the other surfaces.

The surfaces were also rated on their aesthetic qualities. Subjects were asked to rate each surface on the degree to which they "liked" how the surface looked and the color of the surface. Subjects were also asked whether or not they felt each surface "detracted from the beach atmosphere." Only Safety Deck rated significantly lower on "looks" and "color". There were no significant differences on subjects' perceptions of whether or not the surfaces detracted from the environment.