

ABSTRACT

The major problem with durability of asphalt cement concrete (ACC) overlays to rehabilitate jointed portland cement concrete (PCC) pavement comes from reflective cracking. The objective of this research was to evaluate the effectiveness of Glasgrid in regard to preventing reflection cracking. Glasgrid is a glass fiber mesh with 1/2 inch by 1 inch openings (Figure 1). Each strand is composed of many small glass fibers. After the grid is formed, it is coated with a polymer modified asphalt cement.

In 1986, four experimental Glasgrid test sections were incorporated into Polk County project IR-35-2(191)67--12-77 on Interstate 35 from IA 5 to the west I-80 interchange on the west edge of Des Moines. Single and double layers of Glasgrid were placed over transverse cracks and joints of the existing PCC pavement. The Glasgrid was placed on the PCC pavement for one section and between lifts of the ACC resurfacing on the other three sections.

The four Glasgrid sections were compared to two sections without Glasgrid for four years. The sections were reviewed annually to determine how many cracks or joints had reflected through the resurfacing. Glasgrid placed on the PCC pavement was more effective at preventing reflection cracking than Glasgrid between lifts of AC resurfacing. In general, Glasgrid yielded a small reduction or retardation in the amount of reflection cracking, but not sufficient to justify additional expense for the use of Glasgrid.