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14. Supplementary Notes			
15. Abstract <u>Purpose and Need</u> The sealing of cracks in asphalt pavements is vital to the life of the roadway and the pavement. Many products and methods have been used to try and seal these cracks. Most cracks need to be resealed in a few years if not annually depending on the sealing method and sealant used. New methods or sealants need to be evaluated in order to reduce the cost of maintaining these cracks. <u>Objective</u> The objective of this study is to evaluate the effective sealant capabilities of different CrafcO sealants. This study is being conducted on an asphalt pavement project. <u>Scope</u> The project is located on US 85 from Amidon east and north to the county line. Four CrafcO products will be installed on project H-5-085(004)041. The CrafcO products ROADSaver 34522, 34231, 34230, and 34221 will be installed by routing the joint on a one-to-one ratio of width to depth. The products will be evaluated for (1) Elastic characteristics (2) Durability (3) Adhesive strength (4) Cohesion strength and (5) Resilience. The project will be evaluated annually and reports written. A final will follow at the end of five years. <u>Summary</u> It is vital to the success of the project to provide a routed vessel with vertical walls and a flat bottom. This means that the cutting wheels on a router must be kept in good condition. This would help to construct a properly routed crack that can provide optimum performance. Joints were measured during a cold winter day and a warm spring day for 1997, 1998, and 1999. Crack spacing ranged from 65 feet to 90 feet in the CrafcO 230 and 231 sections. The routed joints expanded from $\frac{7}{16}$ inch to $\frac{7}{8}$ inch during the cold winter of 1996/1997 and from a $\frac{1}{4}$ inch to $\frac{1}{2}$ inch during the winter of 1998/1999. The section with the greater crack spacing shows the most crack expansion. A warm weather evaluation will produce up to a 30% better joint rating than a cold weather evaluation. This report fails a joint if combined failures total 20% or more. The sealant cannot be blamed for all of the failures on this project. The CrafcO 221 and 522 were judged a failure. The majority of the joint failures in each section were attributed to missing or near missing the crack during the routing process. This represents about 85% of the failures. The rest of the failures are primarily adhesion. Severe rutting problems were overlaid with asphalt to correct the problem. Rutting was measured at 1 $\frac{1}{4}$ inches to 1 $\frac{1}{2}$ inches at several locations. Cracks were becoming depressed in some areas within the test sections in 1997 and 1998. These depressed cracks are becoming multiple cracked and more depressed in 1999. All of the sections would have received a much better rating if the routing had not missed so much of the crack. Routed cracks that were constructed properly are performing satisfactorily. The CrafcO material seems to be able to expand with the crack at these locations. The August 2000 evaluation shows that the CrafcO 230 and 231 sealants are performing about equally. <u>Recommendations</u> Any time cracks are routed and sealed, it cannot be stressed enough the importance of obtaining a good vessel with vertical sidewalls and a flat bottom. Most importantly is the need to take the time to follow the crack as closely as possible with the router. CrafcO 230 and 231 sealants provided good performance in this study and are recommended for use. Although some of the problems were construction related and not necessarily product related, the CrafcO sealants 522 and 521 in this study did not perform very well and are not recommended.			
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