

# **Fabric Reinforcement To Prevent Reflection Cracking**

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SR-5, Contract 0414  
Cowlitz River to SR-506 I/C

WA-RD 175.1

Final Report  
February 1989



**Washington State Department of Transportation**  
Planning, Research and Public Transportation Division

in cooperation with the  
United States Department of Transportation  
Federal Highway Administration

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION  
**TECHNICAL REPORT STANDARD TITLE PAGE**

1. REPORT NO  WA-RD 175.1	2. GOVERNMENT ACCESSION NO.	3. RECIPIENT'S CATALOG NO.	
4. TITLE AND SUBTITLE  Fabric Reinforcement to Prevent Reflective Cracking		5. REPORT DATE February 1989	
		6. PERFORMING ORGANIZATION CODE WA 7801 & WA 7801A	
7. AUTHOR(S)  R. E. Allison		8. PERFORMING ORGANIZATION REPORT NO.	
9. PERFORMING ORGANIZATION NAME AND ADDRESS  Washington State Department of Transportation Transportation Building Olympia, WA 98504		10. WORK UNIT NO.	
		11. CONTRACT OR GRANT NO.	
		13. TYPE OF REPORT AND PERIOD COVERED  Final Report July 1978 - February 1989	
12. SPONSORING AGENCY NAME AND ADDRESS  Washington State Department of Transportation Transportation Building Olympia, WA 98504		14. SPONSORING AGENCY CODE	
15. SUPPLEMENTARY NOTES  This study was conducted in cooperation with the U.S. Department of Transportation, Federal Highway Administration.			
16. ABSTRACT  The two fabric reinforcement products, Petromat and Mirafi 140, placed between a 0.35 ft. overlay of asphalt concrete and an existing PCC pavement have successfully prevented the occurrence of transverse reflective cracking for the 11 year period since completion of the overlay.			
17. KEY WORDS  Fabric reinforcement, Reflective cracking, Petromat, Mirafi 140		18. DISTRIBUTION STATEMENT	
19. SECURITY CLASSIF. (of this report)  None	20. SECURITY CLASSIF. (of this page)  None	21. NO. OF PAGES  3	22. PRICE

FABRIC REINFORCEMENT TO PREVENT REFLECTION CRACKING

SR-5, Contract 0414  
Cowlitz River to SR-506 I/C

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Experimental Feature WA-78-01 & WA-78-01A  
Final Evaluation Report

Prepared for

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION  
and in cooperation with  
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

## FINAL REPORT

Experimental Project WA 78-01 & WA 78-01A

### **FABRIC REINFORCEMENT TO PREVENT REFLECTION CRACKING**

#### Summary

An experimental installation of fabric reinforcement was placed on 1.5 miles of SR-5, M.P. 59.20 to M.P. 60.86, just north of the Cowlitz River in southwest Washington.

The existing roadway was originally surfaced with PCC pavement. The grade through this section is fairly steep as the highway climbs out of the Cowlitz River valley. The northbound or uphill roadway pavement had experienced faulting with some minor cracking. The project involved the widening of the existing pavement for a truck lane, then resurfacing the entire northbound roadway, shoulder to shoulder, with approximately 0.35 ft of asphalt concrete pavement. Fabric reinforcement was placed over the existing outside lane of PCC pavement after subsealing in an attempt to prevent reflective cracking.

Two fabrics were installed on this project. Petromat, a fabric manufactured by Phillips Fiber Corporation, was used throughout most of the project with the exception of a 1000 foot section between station 681+50 (M.P. 59.51) and station 691+50 (M.P. 59.70). Mirafi 140, a fabric manufactured by Fiber Industries (a subsidiary of Celanese Corporation), was installed in this section. The performance of each fabric was monitored from date of installation, July 6, 1978, to February 7, 1989.

#### Conclusions

Both products have seemingly accomplished their task of preventing reflective cracking in the asphalt concrete overlay. As of February 7, 1989, no traverse reflective cracking had appeared in the entire test section. Some longitudinal cracking has occurred along the outside edge of the underlying PCC pavement. This is apparently due to some minor settlement of the outside lane caused by heavy truck traffic. This has no bearing on the performance of the fabric reinforcement.

Although there is no traverse cracking in the fiber reinforced pavement, it should be noted that there is also no traverse cracking in the adjacent inside lane which had no reinforcement. No further conclusions can be made at this time.