

MICRO SURFACING

MICRO PAVIMENTACION



Finally, pure Pavement Preservation
in Puerto Rico...!!

NATIONAL PAVEMENT PRESERVATION CONFERENCE



IMPACTS AND BENEFITS FROM PAVEMENT PRESERVATION



MICHIGAN STATE
UNIVERSITY



A little history:

- ▶ 2019: PRDOT begins to work on the microsurfacing specification for the first pavement preservation project.
- ▶ 2020: Puerto Rico launches project #1 with Microsurfacing for bidding. AC-0011630 on PR-116, Lajas PR.
- ▶ 2021: Puerto Rico successfully completes its first purely pavement preservation project on PR-116, Lajas PR.

PR-116: characteristics of the section

- ▶ Location: Southwest of the Island, very dry, from km.13.2 to km.14.0
- ▶ AADT (2019): 7,301 with 4.53% Trucks

PR-116 BEFORE
MICROSURFACING TYPE II

PR-116 antes de Micro Pavimentacion Avanzada

Structurally stable but with a lot of weathering, ravelling, oxidation and cracks

AFTER 2 LAYERS OF
MICROSURFACING TYPE II



SPECIAL PROVISION SPECIFICATION 404

MICROSURFACING



Table 404-6 Rate of Application

AGGREGATE TYPE	LOCATION	SUGGESTED APPLICATION RATE ⁽¹⁾	
Type II	Collectors and Local Roads	Single Application: 15-21 lbs/yd ²	Double Application (two lifts): Bottom: 14-18 lbs/yd ² Top: 16-20 lbs/yd ² Total: 30-34 lbs/yd ²
	Scratch or Leveling Course	As Required --- 14 lb/yd ² (minimum)	
Type III	Interstate, Arterial Routes, and Wheel Ruts	Single Application: 18-30 lbs/yd ²	Double Application (two lifts): Bottom: 16-22 lbs/yd ² Top: 18-22 lbs/yd ² Total: 34-44 lbs/yd ²
	Scratch or Leveling Course	As Required --- 16 lb/yd ² (minimum)	

(1) Suggested application rates are based upon the weight of dry aggregate in the mixture.

We made sure that the cracks were well attended to before depositing the mixture. It's mandatory in the specification.

Proyecto de Micro Surfacing en Carretera Estatal PR-116, Lajas, Puerto Rico



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Mixture deposit process:



Final result of the performed work:



Microsurfacing project 1 yr. later (2022)



Microsurfacing project 1 yr. later (2022)



Microsurfacing project: 2 yr. later (2023)



So far, so good...!!!

Looking good without any detachments or reflection cracks on the main lanes where we use cracks sealing before treatment.

Some cracks on the shoulders without cracks sealing

What's Next?

- ▶ Next year we hope to have a second pilot project using microsurfacing.
- ▶ We want to use not only microsurfacing but slurry seals on roads with low vehicle volume as well.
- ▶ Continue monitoring our pilot projects to use the data collected to convince the Agency Top Management that we have the technology available and the advantages of the pavement preservation methods for our road network.
- ▶ Use pavement preservation methods not only on low severity distress roads but on low to medium severity distress as well.
Using good crack sealing in combination with microsurfacing or slurry seal we can obtain a better benefit-cost result in the long term and we also increase the number of candidate sections for these type of treatments.

Thank you for your attention..!!

Any questions??