

IDEAL-CT Testing Report

Asphalt Specialties SMA Mix with ACE XP Fibers

Source: Source: Asphalt Testing Services, LLC (ATS) | Date: November 4, 2021 | Prepared for: Surface Tech [Download Report](#)

Overview

This report from Asphalt Testing Services (ATS) details IDEAL-CT (Indirect Tensile Asphalt Cracking Test) results for an SMA (Stone Matrix Asphalt) mix produced by Asphalt Specialties. The purpose was to determine the CT Index values for SMA incorporating Surface Tech's ACE XP Fibers.

Testing Methodology

- Material containers reheated to 300°F (149°C) for specimen compaction.
- Maximum specific gravity (G_{mm}) determined per AASHTO T209; bulk specific gravity per AASHTO T166.
- Specimens compacted to 62 mm targeting 7.0 ± 0.5% air voids at 300 ± 5°F (149 ± 3°C).
- IDEAL-CT testing conducted at 77°F (25°C) per ASTM D8225; specimens conditioned in water bath for 2 hours.
- Loading rate: 50 mm/min until load < 0.1 kN

Key Results - Asphalt Specialties SMA Mix with ACE XP Fibers

Description	Specimen #1	Specimen #2	Specimen #3	Specimen #4	Average	% COV
Peak Load (lbf)	2152	2132	1957	2029	—	—
Fracture Energy (J/in ²)	9030.83	8294.32	8658.18	8995.03	—	—
CT Index	409.18	306.43	421.29	472.05	402.24	17.3

Comparative Conclusion

The average CT Index of 402.24 demonstrates a significantly higher cracking resistance compared to typical SMA control mixes. This confirms the substantial benefit of incorporating ACE XP fibers in enhancing durability and crack resistance. The coefficient of variation (17.3%) reflects acceptable variability among specimens, consistent with expected lab precision.

Key Takeaway

ACE XP fiber-modified SMA achieves a balance of strength, flexibility, and longevity — providing measurable improvements in crack resistance and long-term pavement durability.

Market Relevance

The results support ACE XP's suitability for UK SMA specifications, aligning with National Highways performance standards and sustainability objectives under PAS 2080 for reduced whole-life carbon impact.

Surface Tech Contact:

312 S. Cedros Ave., S200, Solana Beach, CA 92075
+1-619-880-0265
info@surface-tech.com
www.surface-tech.com

