CORNING

High Temperature Performance of Multimode Optical Fibers

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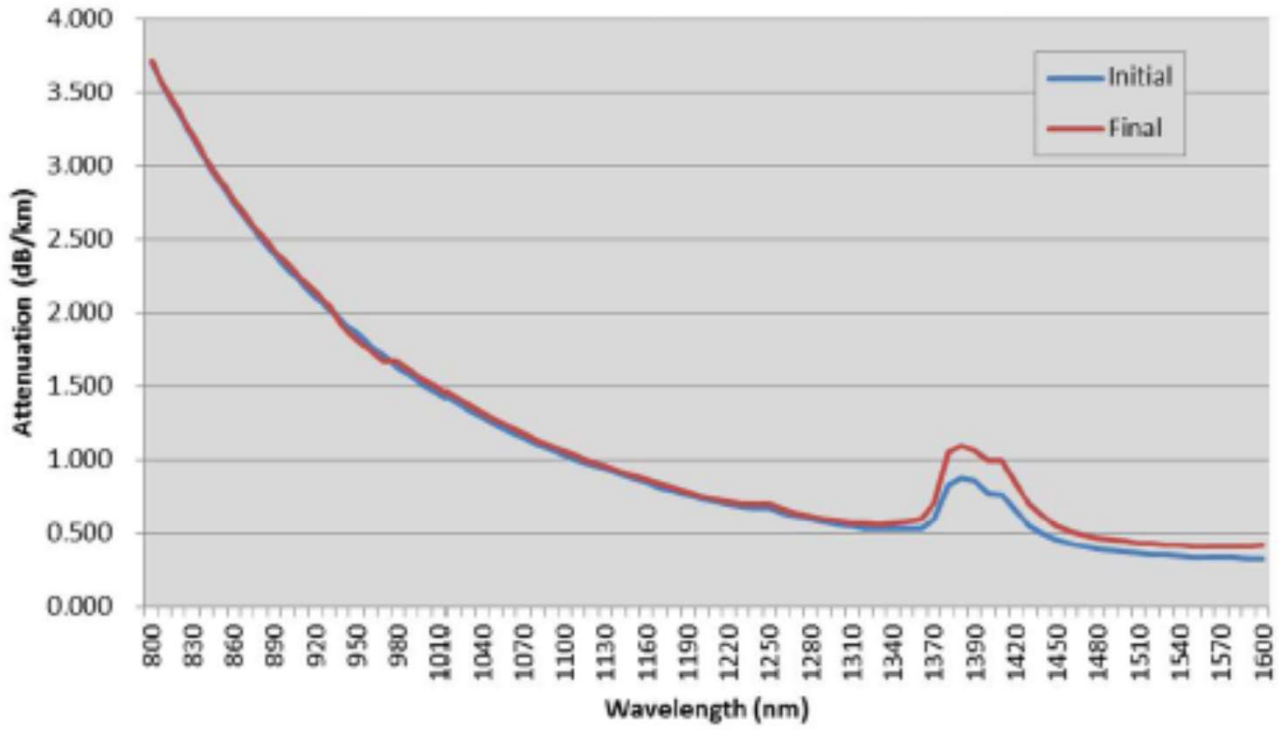
Testing Objective, samples and methodology

- Objective: Test Corning multimode fibers at 105°C for 3000 hours to measure any changes of functional fiber attributes and integrity of coatings

- Key tests
  - Spectral Attenuation
    - Pre and Post Measurements
  - OTDR Attenuation
    - Hourly in-situ monitoring at 105°C for 3000 hours
  - Microscopy Pre and Post Aging Exams - 200x magnification
    - Criteria is no cracking, splitting, swelling, etc.

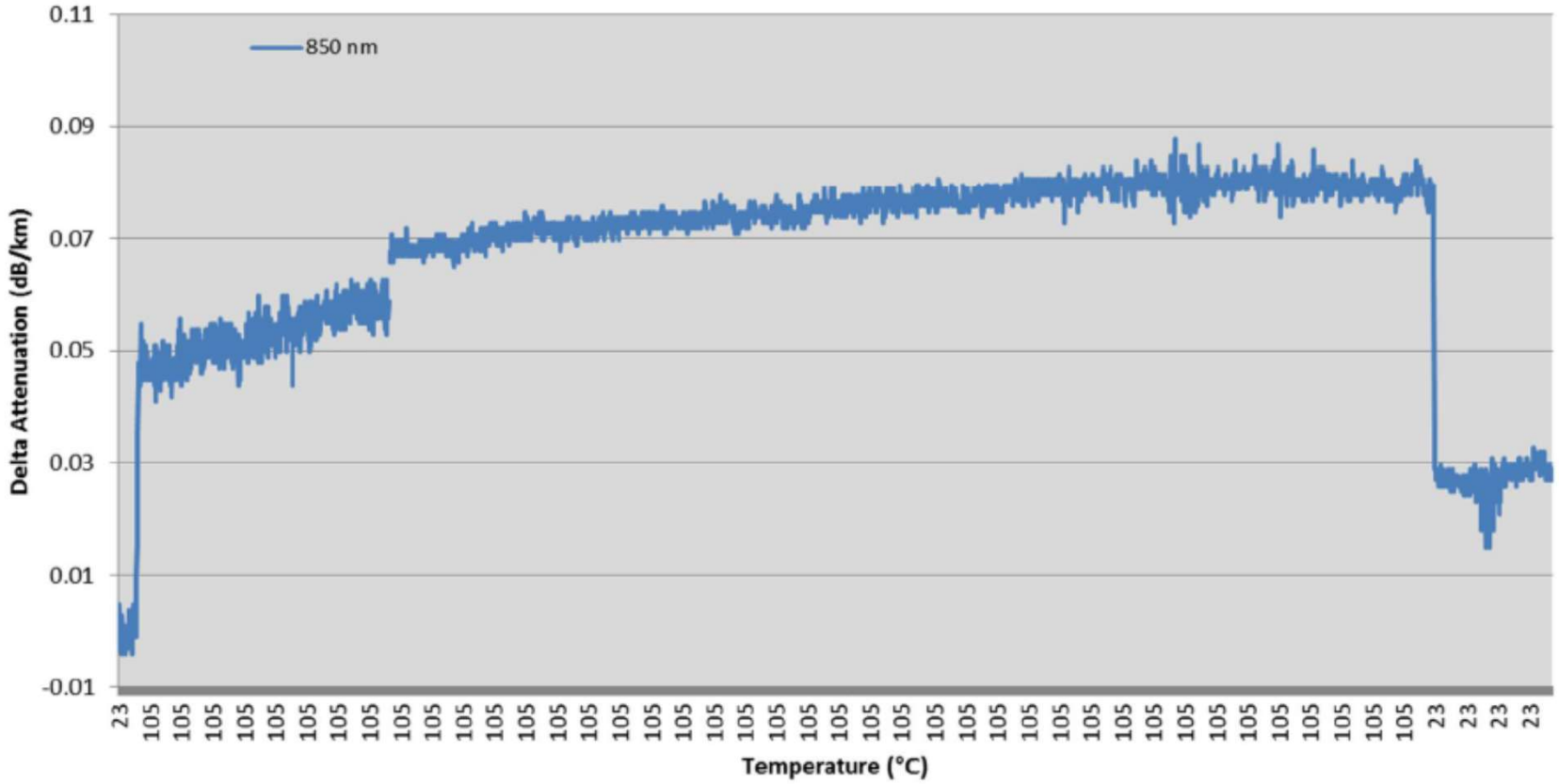
Spectral Attenuation Summary

- After 3000 hrs, little to no change in spectral attenuation was observed
- 0.01 to 0.02 dB/km increase in attenuation at 850 nm
  - This change is negligible for a 15m automotive link



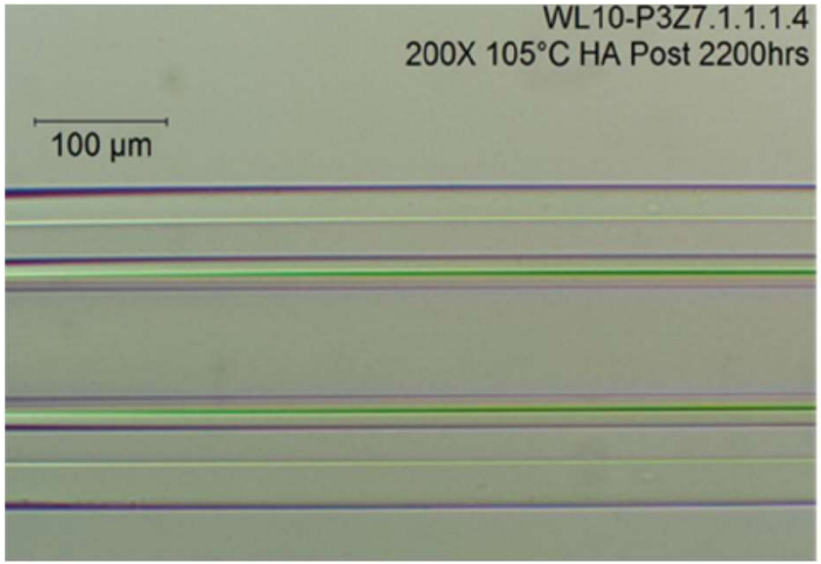
OTDR In-Situ Measurement Summary

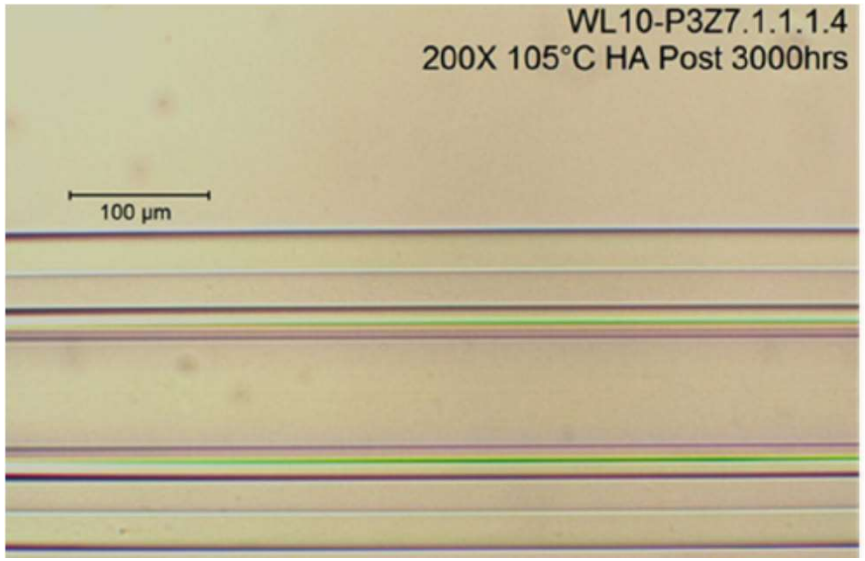
- 105°C Heat Aging
  - Change in attenuation at 850 nm was ≤ 0.03 dB/km (again, negligible for a 15m automotive link)



Microscopy Summary

- Microscopy exams were performed prior to aging, after 2200 hours, and at the conclusion of the 3000 hours at 105°C
  - After 3000 hours of aging, the coating integrity was not compromised
  - No cracking, splitting, or swelling were observed





Summary

- We present the test results for Corning multimode fibers at 105°C for 3000 hours to measure any changes of functional fiber attributes and integrity of coating

- Increase in attenuation (≤ 0.2 dB/km) is negligible for multimode fibers, especially for short links of 15 m

- Integrity of the coating is preserved: No cracking, splitting, or swelling were observed

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