



MATERIALS & ASPHALT PAVEMENT SOLUTIONS

Houston, TX
April 28-29, 2026

Quality Assurance

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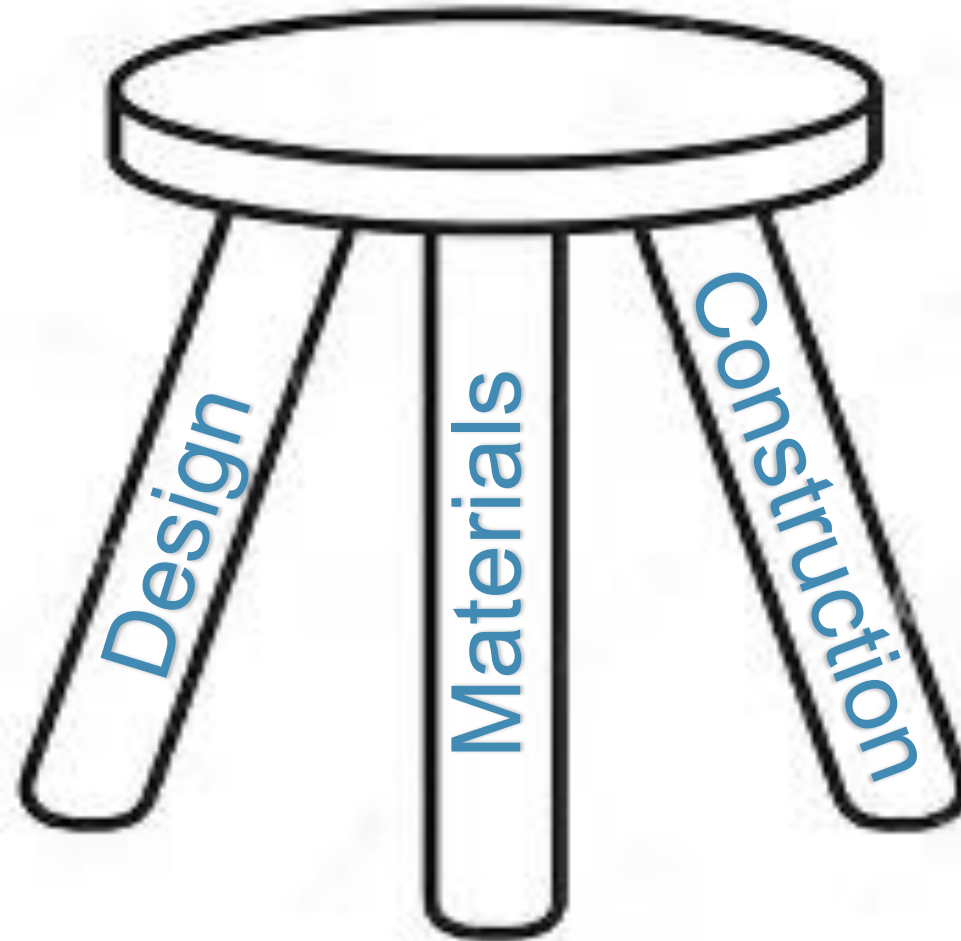
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**MATERIALS
& ASPHALT
PAVEMENT
SOLUTIONS**

Quality Assurance Testing

Building Successful Pavements





Quality Control vs. Quality Assurance

- Quality Control
 - The contractor or producer's internal processes to monitor and control material quality and workmanship
- Quality Assurance
 - The owner's independent sampling, testing, and auditing to confirm the contractor's QC program is effective and the final product meets requirements
- Useful links:
 - [Material Forms](#) – Helpful forms that are not captured as QA
 - [SiteManager Forms](#) – Track and document construction and acceptance data
- Utilize existing frameworks and QM systems



“Work Smarter, Not Harder”

- Specify Item 341M, Item 341/SS3076, or Item 344/SS3077
 - Many producers are already making these mixtures
 - Rigorous TxDOT Testing of Aggregates, Asphalt, and Mix Designs
 - “The work has already been done for you”
 - Ensure quality and consistency with less work
- Aggregate Quality Testing Database 
 - Ensure core quality attributes are met – no additional testing required
 - Simple database check to verify quality
- Asphalt Binder Quality Testing Database 
 - Use approved binders
 - Meet minimum performance standards
 - Untested binders risk poor performance (e.g. engine oil)



Testing & Implications

- Production Testing
 - Mold Density
 - Rice
 - Asphalt Content
 - Gradation
- Placement Testing
 - Core Density
- Cost Implications
 - For 500 ton subplot @ \$120/ton


“Are you still making what you said you would make during the design phase?”

Check density and height at design temperature, weight, and gyrations. Good indicator of asphalt and aggregate within the given sample. Gradation provides an indication for how all production control and can reveal a 7% or more in pavement that begins to decrease. Ensure the HMA will prevent water intrusion into lower layers.

➡ **\$60,000 acceptance test!!**

Law of Proportions

- 5% Asphalt (G = 1.03)
- 95% Aggregate (G = 2.600)




5% Asphalt → 95% Aggregate

5% Asphalt / 95% Aggregate

Rice ↓

Law of Proportions

- 4.5% Asphalt (G = 1.03)
- 95.5% Aggregate (G = 2.600)



4.5% Asphalt → 95.5% Aggregate

4.5% Asphalt / 95.5% Aggregate

Rice ↑

Are you getting what you paid for?



Independent QA Testing

- Not proposing a full QA Program; rather, a targeted approach
 - Watching the Contractor Test \neq Independent Testing
- Smaller projects with limited staff
 - Perform spot checks
 - Use a [Random Number](#) template
 - Allows Contractor to test at a higher frequency
 - QA testing at random locations removes any potential bias and establishes trust of Contractor data
- Larger projects
 - Test QA more frequently
 - If limited staff and resources, utilize a certified accredited Consultant
 - Maintain sample and data custody
- Independent Testing on Independent Equipment Benefits
 - Case Studies



Importance of Certifications

Proper Documentation

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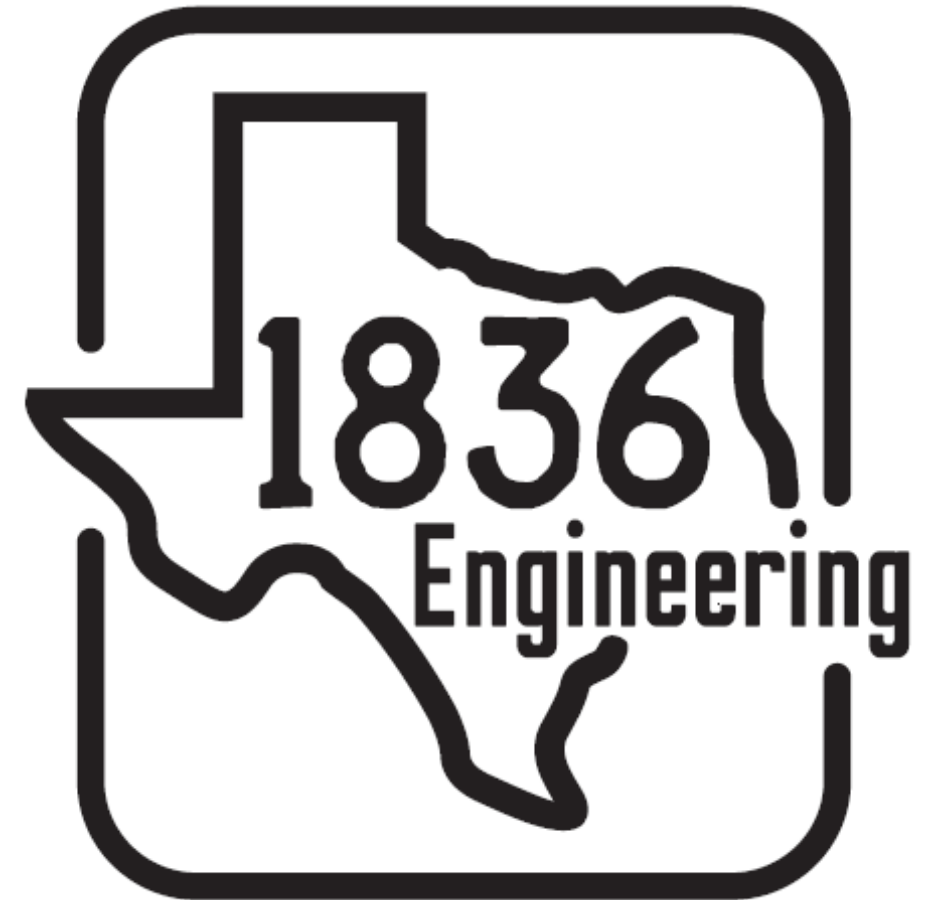
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