Specifiers Checklist for Flexible Pavement Design

Alternate/ "Or Equal" Performance Testing Evaluation for Flexible Pavement

Project Name:		Original Specified Product(s):	
Project Location:		Alternate/ "or Equal" Product Under Review:	
Project Number:		Alternate Product Sample Received:	YES ☐ NO ☐
Owner:		Alternate Product Manufacturer and Location:	
Engineer of Record:		Company Name/ Person Proposing Alternate:	

Original Design Parameters		Alternate/ "Or Equal" Design Parameter	
1. Traffic Capacity		1. Traffic Capacity	
2. Subgrade Strength		2. Subgrade Strength	
3. Currently Approved Geogrid		3. Currently Approved Geogrid	
4. Asphalt Thickness (mm)		4. Asphalt Thickness (mm)	
5. Asphalt Thickness Reduction (%)		5. Asphalt Thickness Reduction (%) (APT required)	
6. Aggregate Thickness (mm)		6. Aggregate Thickness (mm)	
7. Aggregate Thickness Reduction (%)		7. Aggregate Thickness Reduction (%) (APT required)	
8. Increased Traffic Capacity		8. Increased Traffic Capacity	
9. Cost Saving (%)		9. Cost Saving (%)	
10. Materials Savings (m^3 or ton)		10. Materials Savings (m^3 or ton)	
11. Time Savings (days)		11. Time Savings (days)	
12. Environmental Savings ($kgCO_2e$)		12. Environmental Savings ($kgCO_2e$)	
13. Lifecycle Cost Savings (%)		13. Lifecycle Cost Savings (%)	

Alternate/"Or Equal" Performance Evaluation *(Calibration, Validation, and Verification Required)*

Calibration: Accelerated Pavement Testing (APT) in compliance with NCHRP Report 512 and Synthesis 325

	YES	NO
1. 3rd Party testing conducted at an NCHRP accredited APT facility (see attached list)?	☐	☐
2. Specific proposed alternate product included in APT testing?	☐	☐
3. Environmentally controlled APT test chamber?	☐	☐
4. Standard highway moving wheel loads?	☐	☐
5. Thin asphalt concrete geogrid pavement section compared to thicker asphalt concrete control section?	☐	☐
6. Thinner aggregate base pavement section compared to thicker aggregate base control section?	☐	☐
7. Pavement testing involved comparisons over soft (CBR <4%) and firm (CBR >5%) subgrade conditions?	☐	☐
8. Geogrid section trafficked more than 100,000 ESALs with rut depths less 12.7mm.	☐	☐
9. Test data normalised for variances in AB/AC thicknesses and subgrade strength differences between test sections?	☐	☐
10. Quantifiable percent reduction of asphalt concrete and/or aggregate base assumed in original design?	☐	☐
11. Structural benefits outlined for the geogrid stabilised section?	☐	☐
12. Testing results published and/or independently reviewed?(optional)	☐	☐

Validation: In-ground performance testing to validate calibrated design in compliance with AASHTO R50

	YES	NO
1. 10 or more in-situ automated cyclic plate load tests conducted, in compliance with AASHTO T221- 90 (2012), on geogrid stabilised aggregate base, where the results confirmed that the structural requirements of the pavement foundation were achieved for the product being recommended.	☐	☐
2. Testing completed under the supervision of a licensed Engineer?	☐	☐
3. Testing completed over a range of subgrade strengths?	☐	☐
4. At a minimum, 2 of the tests must show results for 10,000 cycles and demonstrate near-linear elastic behavior?	☐	☐

Verification: Independent review and verification of supporting research, data, design assumptions and analyses. Name of independent reviewer: _____

		YES	NO
1.	Independent review of calibration and validation research?	☐	☐
2.	Independent review of data normalisation, product performance, and range of subgrade conditions?	☐	☐
3.	Independent review of design assumptions and variations with AC and AB thickness, subgrade strength, and aggregate quality?	☐	☐
4.	Independent review of design methodology and design calculations?	☐	☐
5.	Independent verification of product-specific design boundary conditions (Allowable AC thickness, AB thickness and subgrade strength)	☐	☐

Alternate/ "Or Equal" Approval Status

☐ Approved

- ☐ 1. Alternate product has been properly calibrated, validated and independently reviewed as shown above.
  ("Yes" to all performance qualifiers)
- ☐ 2. Alternate product design confirmed to meet all intended design parameters, performance, and savings

☐ Rejected

- ☐ 1. Insufficient information provided to evaluate product performance
- ☐ 2. Alternate product has **NOT** been properly calibrated, validated and independently reviewed as shown above.
  ("No" to one or more performance qualifiers)