ROAD PAVEMENT FORUM

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Certification of “Cold-Applied” Asphalt Mixtures

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ROSSMANN

THANK YOU!!!!

Progress to date !

- A case of “analysis paralysis” ????

- Have we spent too much time “sweating the small stuff” ????

Dr. Cees Bruggemans (1952 – 2017)
Chief economist FNB

- Wasn’t interested in “decimal point economics”

- The primary issues should be to get POLICIES and SYSTEMS in place!!!!

POLICIES

- Encouraging that a number of Road Authorities, including Sanral and some Metros are “specifying” independently certified products.

- Without doubt this is driving the big push from manufacturers to obtain Agrèment certification for their products!!

SYSTEMS

- Generally accepted that Agrèment Certification be followed?

- Different classes of mix for specific applications

  - Class 1 – Emergency “throw and go” applications
  - Class 2 – Larger and permanent patching (could be same as 1 but different application requirements)
  - Class 3 – Large paver laid permanent application (could be same as 1 or 2, but different application requirements)

CERTIFICATION SYSTEM

- Fit for purpose NOT just about “engineering” properties of the product!

- Should be appropriate for the specific application (Class)

PARAMETER	TEST	TYPE 1[1]	TYPE 2[2]	TYPE 3[3]
Aggregate Polish Resistance	PSV test	N/A	N/A	≥ 45 [4]
Aggregate Crushing Value	ACV test	N/A	≤ 25%	≤ 25%
In service texture depth	SMTD	N/A	N/A	≥ 0.6 mm
	OR Sand Patch method			
Resistance to Permanent Deformation	Hamburg Wheel-Tracking Test (HWTT) as per AASHTO: T 324	N/A	≥ 5 000 reps to rut of 20 mm at 30ºC	≥ 16 000 reps to rut of 6 mm at 50°C
Resistance to cracking	Visual – No fatigue cracking	After 6 months	After 2 years	After 2 years
	AND Four point beam fatigue after ageing	N/A	N/A	Typical values: Sabita Manual 35/TRH 8
Durability	Modified Lottman test After long term ageing	N/A	TSR ≥ 0.8	TSR ≥ 0.8
	AND Visual – No disintegration or loss of material	After 6 months	After 2 years	After 2 years

PARAMETER	TEST	TYPE 1[1]	TYPE 2[2]	TYPE 3[3]
Compaction (construction voids content)	Gyratory compaction (xx gyrations) at application temperature, followed by conditioning of the briquette OR Field cores after construction	≤ 8%	≤ 8%	≤ 8%
Terminal voids content	Gyratory compaction (300 gyrations) at 135°C → conditioning of the briquette	N/A	N/A	≥ 1.5%
Visual condition of pavement	TMH 9 (new version)	N/A	Condition index: ≤ 2	Condition index: ≤ 2
Field rutting after 2 years	TMH 9 (new version)	N/A	Rut < 10 mm	Rut < 5 mm
Water permeability	Water Permeability on field core after construction (BS1377-8:1990)	≤ 10 l/m²/h	≤ 7 l/m²/h	≤ 7 l/m²/h
Bond strength	Torque bond test on field	N/A	N/A	≥ 400 kPa

Certification System

- **<u>What class of product is to be assessed?</u>**

Certification Requirements

- Is it supplied pre-mixed or in separate components (mixing prescriptions including aggregate requirements)?
- Is it manufactured “hot” or “cold”, mixing plant requirements?
- Are there prescribed design methodologies (including aggregate requirements)?
- Is there an approved QA Plan?
- Are there any health and safety issues?
- What is the prescribed application criteria (eg. Pothole/substrate preparation, bond coat or no bond coat, compaction requirements etc) – USER GUIDE
- Are there any application constraints (e.g min/max layer thickness, ambient/product temperature etc)?- USER GUIDE
- Storage requirements/Shelf life (best before date)?
- What are the expected product engineering properties (deformation/fatigue/permeability)???
- In-service ageing characteristics/properties ?
- Sites available for “performance” assessment?

Conclusions

- There is industry buy-in for the process being followed!
- Policy makers are also coming “on-board”! Cannot fairly procure products in a “blank-cheque” scenario!!!
- Development of specifications is an iterative process generally requiring regular revision
- Aim is to commence issuing **INTERIM** Certificates (valid for 2 years) within the next 2 months or so !

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Thank You


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