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Dear Andrew

NEW STANDARD SECTION 813 – BASE AND SUBBASE FOR LOWER TRAFFICKED ROADS

The Construction Material Processors Association (CMPA) is dedicated to the representation and service of its Members in the Victorian Earth Resources industry. The CMPA represents a broad spectrum of businesses that extract and process hard rock, gravel, sand, clay, lime, and soil. CMPA members also operate recycling businesses.

CMPA members are typically small to medium sized family and private businesses, local government, and utilities. Many are regionally based employers and service local construction, infrastructure, and road maintenance needs. The extractives sector is a key pillar within the construction industry underpinning the growth and economic development of Victoria through supply of the construction materials.

In 2018/19, the sector supplied 63 million tonnes of construction materials to the market, at a value of approximately \$1 billion. Small to medium quarries account for approximately half of this production.

The CMPA supports the principle of responsible, balanced legislation that is in the best interests of the State of Victoria.

Thank you for the opportunity to comment on the new Standard Section 813 – base and subbase for lower trafficked roads.

Comments

The proposed Section 813 is a new specification intended for use by Municipalities and designers to cover pavement materials considered acceptable for use in low trafficked pavement applications, such as residential streets and carparks.

The proposed specification enables crushed concrete to be a 100% substitute for conventional quarry hard rock, whilst also enabling up to 50% of Supplementary materials such as crushed brick, glass, recycled asphalt and slag aggregate.

Section 813 effectively introduces three new crushed products, each of which aligns with lower pavement layer materials currently specified in Section 812 materials:

Section 813: 20mm Class LTB - Lower Trafficked **Base**, which aligns with Section 812 20mm Class 3 **Upper Subbase**. Lower trafficked pavement designs would formerly have specified 20mm Class 2 for a **Base** pavement layer.

Section 813: 20mm Class LTS – Lower Trafficked **Subbase**, which aligns with Section 812 20mm Class 4 **Lower Subbase**. Lower trafficked pavement designs would formerly have specified 20mm Class 3 for a **Subbase** pavement layer

Section 813: 40mm Class LTS – Lower Trafficked **Subbase**, which aligns with Section 812 40mm Class 4 **Lower Subbase**. Lower trafficked pavement designs are unlikely to have specified Class 4, if so, only as a **lower** subbase pavement layer.

In terms of the materials currently specified in Section 812 and conventional base and subbase pavement layers, the proposed Section 813 effectively enables materials of the next lower class to be utilised for each of the respective pavement layers in lower trafficked pavements.

- 20mm Class 2 Base becomes a material of superior quality, no longer required to be specified for lower trafficked applications.
- 20mm Class 3 Upper Subbase becomes a material suitable for lower trafficked Base layer (LTB)
- Class 4 Lower Subbase becomes a material suitable for lower trafficked Upper Subbase (LTS).

The basis for comments include ensuring materials are fit for purpose, to minimise risk to members where materials may otherwise be difficult to place or may perform poorly under certain circumstances.

Suggestions which slightly raise proposed LTB and LTS quality standards are made to reduce the potential that marginal local gravels poorer than currently accepted gravels, may be considered by Municipalities as equivalent to proposed 813 products for base and sub base use.

- 813.05 (b) para 2 Degradation Factor - clarification is required with respect to whether degradation factor criteria of not less than 60 applies only to the fines within a final product or to the fines of the individual components within a blend;
- Table 813.06 - “Allowable % of Supplementary Materials” should read “Maximum Allowable % ...”.
- Table 813.06 California Bearing Ratio LTS min 20 - consideration should be given to raising this value to 30.
 - 20 is considered rather low for an upper sub base pavement layer within 100mm of the finished surface.

- Table 813.06 Plasticity Index LTB – consideration should be given to narrowing the PI range to 2 - 8 or 1 - 8.
 - PI 10 is relatively high for a base pavement,
 - Some PI is important to provide a minimum level of cohesion to facilitate pavement compaction, stability, surface preparation and finishing.
- Table 813.06 Plasticity Index LTS – consideration should be given to reducing the maximum PI to 15.
 - PI greater than 15 is considered excessive for a subbase pavement within 100mm of the finished surface,
 - PI maximum 15 somewhat equates to the criteria maximum PI x % p 0.425mm not greater than 450,
 - Maximum PI (15) x maximum % passing 0.425 (28) = 420
 - Adoption of Maximum PI 15 would enable PI x % passing 0.425mm to be removed,
 - Adoption of Maximum PI 15 would enable the particle size distribution to be relaxed, whilst maintaining PI x % p 0.425mm ≤ 450. E.g. % passing 0.425mm range to 10 – 30 (PI=15 x 30% p 0.425mm = 450).
- Table 813.063 Foreign Materials in Crushed Concrete - clarification is required with respect to whether the criteria limits only apply to a “crushed concrete’ component or to content within a final product blend.
- Tables 813.081 and 813.083 Grading Limits – consideration could be given to variations to the grading limits based on minimum soaked CBR and Maximum PI controls being more important than particle size distribution:
 - it is suggested that the minimum grading limits for LTB and LTS are too low for low trafficked pavement applications such as residential streets and carparks,
 - pavement materials with low fines content are very difficult to place, compact and finish. Such challenges are compounded when placing pavements for low trafficked applications such as residential streets and carparks,
 - relaxation of the maximum allowable percentages passing would permit additional fines and improve the workability of LTB and LTS materials. It is suggested another 2% passing 0.075mm cross LTB and LTS products would be beneficial,
 - CBR and PI criteria will remain as the primary controls of pavement performance, a slight relaxation of grading limits appears aligned with the concept of specifying materials for low trafficked applications.

Testing procedure:

- There was not a reference to specifications 820/821 for concrete.
- Could not find a reference to specification 813 Table 131 should this be Table 121?
- Specification 813 Table 021 should state AS 1289 3.6.1 as well as AS 1141 11.1 for the Particle Size Distribution.
- Flakiness Index for crushed rocks and crushed concrete should not the new RC 302.11 be used. Flakiness Index for graded materials (2018).
- Degradation Factor of Fine Aggregate RC 370.05 does not state prior to the mixing in of any supplementary material.

I would be happy to discuss our submission further at your invitation.

Yours sincerely



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