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Hunter Water Corporation A.B.N. 46 228 513 446
Standard Technical Specification for:

NATURAL GRAVEL AND CRUSHED ROCK FOR ROAD PAVEMENTS

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AMENDMENTS FROM THE PREVIOUS EDITION - SEP 1996

Clause	Amendment
All	General formatting and referencing changes to improve clarity but no change to technical requirements

1. GENERAL

1.1 Scope

This Standard Technical Specification details requirements for the supply of natural gravels and crushed rock for use in road pavements.

1.2 Interpretation

Headings are for the convenience of the reader and shall not be used in the interpretation of this Standard Technical Specification.

Unless the context requires otherwise any expression such as "give notice", "submit", "approval", or "directed" means give notice to, submit to, approval by, or directed by the person nominated by the Principal or Purchaser.

2. MATERIALS

2.1 General

Supply material comprising particles derived from the natural disintegration of rock or crushed from tough, durable rock. If the run of the crusher is deficient in fine particles add material as necessary for the overall material to meet the requirements of clause 3.2. Only add material at the source and ensure uniform blending.

2.2 Material Properties

Respective classes of material shall meet the requirements tabled below as determined by the listed standard Test Methods of the Roads and Traffic Authority of New South Wales. Prior to testing samples may need to be pre-treated by the procedures described in Test Methods T101, T102, T102a, T103 and T104.

Test	Property	Materials Requirements	
		For use in bitumen, asphalt and concrete surfaced roads	For use in gravel and rock surfaced roads
T106	Coarse Particle Size Distribution		
	% passing 26.5 mm sieve	100	100
	% passing 19.0 mm sieve	95 to 100	95 to 100
	% passing 13.2 mm sieve	70 to 90	
	% passing 6.7 mm sieve	50 to 70	
	% passing 2.36 mm sieve	35 to 55	30 to 80
T107	Fine Particle Size Distribution		
	A (pass 425µm sieve as % of pass 2.36 mm sieve)	37 to 55	over 45
	B (pass 75µm sieve as % of pass 425 µm sieve)	37 to 55	over 45
	C (below 13.5µm as % of pass 75 µm sieve	37 to 60	over 45
	T value (see note 4)		under 5
T108	Maximum Liquid Limit (if non-plastic)	[1]20	20
T109	Maximum Plastic Limit (if plastic)	20	20+0.25PP
	Maximum Plasticity Index	[2]6	15
T114	Maximum Dry Compressive Strength	over 1.7 MPa	over 2.80 MPa
T213	Particle Shape by Proportional Calliper max %	35	

	misshapen (2:1)		
T215	[3]Minimum Aggregate Wet Strength	70 kN	
	[3]Maximum 10% Fines Value % (Dry-Wet)/Dry	35	

Notes:

1. The maximum value of the Liquid Limit may be increased to 23 for non-plastic material provided that the value determined is not influenced by the presence of adverse constituents.
2. After being subjected to pre-treatment comprising 5 cycles of compaction (Test Method T102) and or to artificial weathering (Test Method T103), the Plasticity Index shall not exceed 6 and it shall not increase by more than 3 from that of a sample prior to pre-treatment.
3. Based on testing of any size fraction of the sample specified by Test Method T215. The material may be crushed to provide sufficient quantities of material for any particular size fraction.
4. T value = D + E + F + 0.5 PI - 0.25

   where: D = (A - 65) if A is greater than 65

   = 0 if A is between 45 and 65

   = (45-A) if A is less than 45

   E and F are calculated based on B and C in an identical manner to D

   PI = the Plasticity Index

   R = 100% minus the percent passing 2.36 mm sieve expressed as a percentage of material passing the 19.0 mm sieve

3. SOURCE OF MATERIALS

Prior to the delivery of any material submit details of the source of all materials that will be used to meet quality and quantity requirements. If directed submit details of plant and methods of winning and mixing materials. Do not change the source or methods of winning or mixing without approval.

4. SAMPLING AND TESTING

4.1 Initial Sample

Prior to the delivery of any material submit a 0.03 m^3 sample of the material to be supplied. Submit the sample in otherwise clean containers, such as plastic bags, which will not permit the loss of finer fractions. Do not submit samples in cement, hessian or flax bags. Affix a tag to each sample identifying the class of material, name of supplier, source of supply and the contract number if applicable.

4.2 Routine Sampling and Testing

Undertake routine sampling and testing at a frequency necessary to ensure that only materials meeting specified requirements are supplied. Submit test results if directed.

5. SUPPLY FROM STOCKPILES

Obtain approval before stockpiling material at the quarry. Construct the stockpile using methods and to a shape consistent with good practice to limit segregation. Signpost the stockpile to identify the class of material.

6. DELIVERY

Transport materials in vehicles which will not allow loss of material.

Deliver materials other than modified or bound materials suitably damp to prevent segregation during transit, with a uniformly distributed moisture content not greater than the optimum moisture content determined by either Roads and Traffic Authority of New South Wales Test Method T111 or T162.

7. REJECTED MATERIAL

Remove all rejected material and replace it with material meeting requirements.

Material is to be rejected if a representative sample is found to be not in accordance with the requirements of this Standard Technical Specification or other specified requirements or if it is considered to be unsuitable due to segregation or contamination.

If rejection is based on testing by the Principal and other test data is available from a laboratory appropriately registered with the National Association of Testing Authorities (NATA) contradicting the grounds for rejection, then a further sample shall be taken and tested at a laboratory acceptable to both the supplier and the Principal. The material shall be accepted or rejected based on testing of the further sample.

[END OF STS102]