APPENDIX D

PAVEMENT MATERIAL PROPERTIES

TABLES FROM AUS-SPEC / C242

TABLE 242.3 – UNBOUND BASE MATERIAL PROPERTIES – AUS-SPECS

TEST METHOD	DESCRIPTION	BASE MATERIAL REQUIREMENTS			
		DGB20	GMB20	NGB20-2C	NGB20-2D
AS1289.3.6.1	Coarse Particle Size Distribution				
	% pass 75.0mm sieve	-	-	-	-
	% pass 53.0mm sieve	-	-	-	-
	% pass 37.5mm sieve	-	-	-	-
	% pass 26.5mm sieve	100	100	100	100
	% pass 19.0mm sieve	95-100	95-100	93-100	93-100
	% pass 13.2mm sieve	-	-	-	-
	% pass 9.5mm sieve	-	-	71-87	71-87
	% pass 6.7mm sieve	50-70	30-55	-	-
	% pass 4.75mm sieve	-	-	47-70	47-70
	% pass 2.36mm sieve	35-55	20-30	35-56	35-56
	% pass 0.425mm sieve	-	-	14-32	14-32
	% pass 0.075mm sieve	-	-	6-20	6-20
AS1289.3.6.3	Fine Particle Size Distribution Ratios expressed as % (for that portion of the material passing 2.36mm sieve)				
	A. Pass 425µm sieve %	35-55	30-50	-	-
	B. Pass 75µm sieve %	35-55	30-50	-	-
	C. Pass 13.5µm sieve %	35-60	-	-	-
AS1289.3.1.1	Liquid Limit (if non plastic) ⍱	max 20	max 20	max 20	max 20
AS 1289.3.3.1	Plastic Limit (if plastic)	max 20	max 20	max 20	max 20
AS 1289.3.3.1	Plasticity Index ■	max 6	max 6	max 6	max 8
T114	Maximum Dry Compressive Strength on fraction passing 19mm sieve. (only applies if Plasticity Index is less than 1)	min 1.7 MPa	min 1.7 MPa	min 1.7 MPa	min 1.7 MPa
AS 1141.14	Particle Shape by Proportional Calliper. % misshapen (2 : 1)	max 35	max 35	-	-
AS 1141.22	Aggregate Wet Strength (kN) ◊				
	For category 1 or 2a	min 80	min 150	-	-
	For category 2b or 2c	min 70	min 130	-	-
	For category 2d	min 60	min 100	-	-
AS 1141.22	Wet/Dry Strength Variation ◊ Dry - Wet % / Dry				
	For category 1 or 2a	max 35	max 30	-	-
	For category 2b or 2c	max 40	max 30	-	-
	For category 2d	max 45	max 30	-	-
AS 1289.F1.1	4 day Soaked CBR (98% Modified Compaction)	-	-	80	60

NOTES ON TABLE 242.3

Material consisting of rounded river stone shall have a minimum of two fractured faces on at least 75 per cent of the particles larger than 6.70mm.

➢ 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.

■ For category 2d base materials the maximum Plasticity Index shall be 8.

◊ All fractions of the sample specified by AS 1141.22 must be within specification. The fraction with the highest wet/dry strength variation is the value for determining conformance with the specification. The fractions 19.0mm to 13.2mm and 6.7mm to 4.75mm must be tested. The other fractions do not need to be tested unless there is a risk in the opinion of the Superintendent that such fraction may fail the specification. Any fraction at risk of failing must be tested.

TABLE 242.4 – UNBOUND SUB-BASE MATERIAL PROPERTIES – AUS-SPECS

TEST METHOD	DESCRIPTION		SUB-BASE MATERIAL REQUIREMENTS			
		DGS20	DGS40	GMS40	NGS20	NGS40
AS1289.3.6.1	Coarse Particle Size Distribution					
	% pass 75.0mm sieve	-	-	-	-	-
	% pass 53.0mm sieve	-	100	100	-	100
	% pass 37.5mm sieve	-	-	-	-	95-100
	% pass 26.5mm sieve	100	-	-	100	80-97
	% pass 19.0mm sieve	95-100	50-85	50-75	96-100	-
	% pass 13.2mm sieve	-	-	-	-	-
	% pass 9.5mm sieve	-	-	-	65-89	48-85
	% pass 6.7mm sieve	50-70	30-55	15-35	-	-
	% pass 4.75mm sieve	-	-	-	47-80	35-73
	% pass 2.36mm sieve	35-55	25-50	5-15	32-67	25-58
	% pass 0.425mm sieve	-	-	-	14-42	10-33
	% pass 0.075mm sieve	-	-	-	6-26	3-21
AS1289.3.6.3	Fine Particle Size Distribution Ratios expressed as % (for that portion of the material passing 2.36mm sieve)					
	A. Pass 425µm sieve %	35-55	35-60	25-50	-	-
	B. Pass 75µm sieve %	35-55	35-60	25-50	-	-
	C. Pass 13.5µm sieve %	35-60	35-65	-	-	-
AS1289.3.1.1	Liquid Limit (if non plastic)	max 23	max 23	-	max 23	max 23
AS 1289.3.3.1	Plastic Limit (if plastic)	max 20	max 20	-	max 23	max 23
AS 1289.3.3.1	Plasticity Index	max 12	max 12	max 12	max 12	max 12
T114	Maximum Dry Compressive Strength on fraction passing 19mm sieve. (only applies if Plasticity Index is less than 1)	min 1.0 MPa	min 1.0 MPa	-	1.0 MPa	1.0 MPa
AS 1141.14	Particle Shape by Proportional Calliper. % misshapen (2 : 1)	max 35	max 35	max 35	-	-
AS 1141.22	Aggregate Wet Strength ♦ For category 1 or 2a For category 2b or 2c For category 2d	min 50kN	min 50kN	min 130kN	-	-
AS 1141.22	Wet/Dry Strength Variation ♦ Dry - Wet % Dry	max 60	max 60	max 30	-	-
AS 1289.F1.1	4 day Soaked CBR (98% Modified Compaction)	-	-	-	30	30

NOTES ON TABLE 242.4:

Material consisting of rounded river stone shall have a minimum of two fractured faces on at least 75 per cent of the particles larger than 6.70mm.

- All fractions of the sample specified by AS 1141.22 must be within specification. The fraction with the highest wet/dry strength variation is the value for determining conformance with the specification. The fractions 19.0mm to 13.2mm and 6.7mm to 4.75mm must be tested. The other fractions do not need to be tested unless there is a risk in the opinion of the Superintendent that such fraction may fail the specification. Any fraction at risk of failing must be tested.

Where the proposed unbound base material complies with all of the requirements of Table 242.3 except gradings (AS1289.3.6.1 and AS1289.3.6.3), the Contractor may propose the use of the material, subject to approval of the Superintendent, if the material complies with the RMS Modified Texas Triaxial Classification Number (T171) requirements specified in Table 242.5, (T171 tested at not less than 85 per cent of Optimum Moisture Content and 98 per cent of Maximum Dry Density as determined by AS1289.5.2.1).

TABLE 242.5 - RMS MODIFIED TEXAS TRIAXIAL CLASSIFICATION NUMBER REQUIREMENTS

TRAFFIC CATEGORY	MODIFIED TEXAS TRIAXIAL CLASSIFICATION NUMBER (TEST METHOD T171)
1	max 2.0
2a	max 2.2
2b	max 2.5
2c	max 3.0
2d	max 3.0