SECTION 801 - SOURCE ROCK FOR THE PRODUCTION OF CRUSHED ROCK AND AGGREGATES

801.01 DESCRIPTION

This section covers the durability, hardness and, where applicable, the polished stone value requirements of source rock used for the production of crushed rock and aggregates for engineering use. ~~The requirements for pyroclastic rocks (scoria) are covered in Section 818 and for recycled crushed concrete in Section 820.~~ The requirements for gravel, sand and soft or ripped rock are covered in Section 811.

Any additional source rock requirements relevant to specific applications are covered in the appropriate product Standard Specification Sections.

801.02 DEFINITIONS

Assigned Los Angeles Value

The assigned Los Angeles Value (LAV) is a hardness rating derived from Los Angeles Abrasion test results which is assigned to each source annually by VicRoads.

Assigned Polished Stone Value

The Assigned Polished Stone Value (PSV) is a friction rating derived from Polished Stone Value test results which is assigned annually to each source (where applicable) by VicRoads.

Material Type

Rock from a particular source and which is distinguishable on the basis of colour, texture, hardness, the degree of weathering and test properties.

Non Quarry Rock

Rock obtained from a location other than a quarry, or within a construction site. Non quarry rock is usually processed by an on-site portable plant but may also be taken to a nearby quarry for processing.

Quarry Rock

An in situ rock mass located in an operating quarry or a part of a quarry.

Rock Durability Classification

Classification of a material type as sound rock, marginal rock or unsound rock in terms of the durability requirements of Clause 801.03.

Rock Type

Rock is classified as igneous, metamorphic or sedimentary on the basis of the classification scheme detailed in VicRoads Code of Practice for Source Rock Investigations as specified in Section 175.

Source Rock

The rock mass which is used or proposed to be used in the production of crushed rock or aggregate. The rock mass can be igneous, metamorphic or sedimentary rock.

Unsound Rock

Unsound rock is that material, whether in the source or as spalls or as crushed particles, which:

(a) is soft, friable, or composed of clay or weathered rock, or which contains matter which degrades when alternately wetted and dried; or

(b) in the case of igneous (except basic igneous) and metamorphic rock, has a Degradation Factor - Source Rock less than the minimum value for marginal rock specified in Table 801.032; or

(c) in the case of basic igneous rock, has a Secondary Mineral Content greater than the maximum value or an Accelerated Soundness Index value less than the minimum value for marginal rock specified in Table 801.032; or

(d) in the case of sedimentary rock, has a Texas Ball Mill value greater than the maximum value for marginal rock specified in Table 801.032.

801.03 SOURCE ROCK

(a) General

Prior to the commencement of work, the Contractor shall nominate the source from which the crushed rock and aggregate will be obtained.

Crushed rock and aggregates shall only be produced from an accredited source with a current assigned LAV hardness and, where appropriate, an assigned PSV value.

~~VicRoads will investigate and classify source rock in accordance with VicRoads Code of Practice for Source Rock Investigations as specified in Section 175.~~

The Superintendent's approval shall be obtained prior to changing the source of material. If at any time the Contractor proposes to obtain material from a source other than the confirmed accredited source, the Superintendent shall be notified in sufficient time so that investigations, as may be required, can be carried out before approval is given.

If the Contractor proposes to use a source rock type other than those listed in Tables 801.031 and 801.032, VicRoads will determine whether the rock type is acceptable and will set appropriate test values.

(b) Durability

Source rock shall be considered sound, marginal or unsound in accordance with the provisions of Tables 801.031 and 801.032.

(c) Hardness

The hardness of the source rock shall be measured by a Los Angeles Abrasion test on the product and the assigned Los Angeles Value shall comply with the test values shown for the different product applications in Table 801.033.

(d) Friction Rating

The Polished Stone Value of the source rock shall be measured by a Polished Stone Value test on the product and the assigned Polished Stone Value shall comply with the test value shown for the different surfacing applications in Table 801.034.

Source rock which does not comply with the specified durability and hardness requirements but from which crushed rock and aggregates of proven satisfactory performance have been produced may be accepted for use subject to the written approval of the Superintendent.

Table 801.031 - Durability Requirements for Sound Rock

Rock Type	Test Value			
	Degradation Factor Source Rock (min)	Secondary Mineral Content (%) (max)	Accelerated Soundness Index (min)	Texas Ball Mill Value (max)
ACID IGNEOUS				
Granitic Rocks	50	-	-	-
Other Acid Igneous	45	-	-	-
INTERMEDIATE IGNEOUS				
Trachyte	50	-	-	-
Other Intermediate Igneous	45	-	-	-
BASIC IGNEOUS	-	25	94	-
METAMORPHIC				
Hornfels	40	-	-	-
Other metamorphic	45	-	-	-
SEDIMENTARY				
Argillaceous Sediments	-	-	-	30
Arenaceous Sediments	-	-	-	45

Table 801.032 - Durability Requirements for Marginal Rock

Rock Type	Test Value			
	Degradation Factor Source Rock (range)	Secondary Mineral Content (%) (range)	Accelerated Soundness Index (range)	Texas Ball Mill Value (range)
ACID IGNEOUS				
Granitic Rocks	35-49	-	-	-
Other Acid Igneous	35-44	-	-	-
INTERMEDIATE IGNEOUS				
Trachyte	30-49	-	-	-
Other Intermediate Igneous	35-44	-	-	-
BASIC IGNEOUS	-	26-30	90-93	-
METAMORPHIC				
Hornfels	20-39	-	-	-
Other metamorphic	30-44	-	-	-
SEDIMENTARY				
Argillaceous Sediments	-	-	-	31-40
Arenaceous Sediments	-	-	-	46-55

Table 801.033 - Los Angeles Value (LAV) for Product Applications

Source Type	Rock Type	Los Angeles Value (max)									
		Standard Specification Sections									
		404 405 407 408 410 417 421 427	501 520 610 619 701	702 713	423 802	812		815	831		
						Base	Subbase	Subbase	Class A	Class B	Class C
Quarry Rock	**ACID IGNEOUS**										
	Granitic Rocks	30	35	40	35	35	40	40	(a)	35	40
	Other Acid Igneous	25	35	35	30	30	35	35	20	25	30
	INTERMEDIATE IGNEOUS	25	35	35	30	30	35	35	20	25	30
	BASIC IGNEOUS	25	35	35	30	30	35	35	20	25	30
	METAMORPHIC	25	35	35	30	30	35	35	20	25	30
	SEDIMENTARY										
	Argillaceous Sediments	(a)	(b)	35	25	(a)	25	25	(a)	25	30
	Arenaceous Sediments	(a)	(b)	35	25	(a)	40	40	(a)	25	30
	River Gravel Pebble	(a)	35	35	(a)	(a)	35	35	(a)	30	35
	Calcrete	(a)	(a)	(a)	(a)	(a)	35	35	(a)	30	30
	PYROCLASTIC										
	Scoria	(a)	(a)	35	(a)	Refer Section 818		(a)	(b)	(b)	35
Non Quarry Rock		(b)	(b)	35	(b)	(b)	35	35	(a)	(b)	30

Notes: (a) Not permitted for this use
(b) Not permitted for use unless otherwise accredited by VicRoads
(c) 'Non Quarry' Granite or Sedimentary rock shall comply with LAV values listed under quarry source rock.

Table 801.034 - Polished Stone Values (PSV) for Surfacing Applications

Specification Section	Application	Polished Stone Value (min)
407 Hot Mix Asphalt	Type H, HG and HP wearing course Type V wearing course	48 54
404 Stone Mastic Asphalt	Type H wearing course	48
405 Regulation Gap Graded Asphalt	Type H wearing course	48
408 Sprayed Seal Treatments	Class A	48
410 Ultra Thin Asphalt	Type H wearing course	48
417 Open Graded Asphalt	Type H wearing course	48
421 Bitumen Crumb Rubber Asphalt	Type H wearing course	48
427 Bituminous Slurry Surfacing	Where specified in Clause 427.24 or wearing course where traffic volume per lane exceeds 2000 vpd	48
831 Aggregate for Sprayed Bituminous Surfacing	Class A	48

801.04 MINIMUM TESTING REQUIREMENTS

VicRoads will carry out all inspections, investigations and testing of rock sources and source rock material types in accordance with VicRoads Code of Practice for Source Rock Investigations as specified in Section 175. ~~VicRoads will provide rock type, durability classifications, hardness values, friction ratings and reference materials as is deemed necessary for the assessment of Coarse Aggregate Quality by Visual Assessment as specified in Section 175.~~