Section 9 — DEFINITION OF TERMS
absorption
The entry of fluid into a solid by virtue of the porosity of the latter.

absorption (bituminous binder)
The penetration of binder into an aggregate or base.

additive
A substance added in small amounts for the purpose of aiding in the manufacture or handling of a product or modifying the end properties.

adhesion
The action by means of which a bituminous binder sticks to the surface of an aggregate.

adhesion agent
A substance used for the purpose of improving the adhesion between a bituminous binder and the aggregate. The term generally refers to adhesion in the presence of water.

aggregate
A material composed of discrete mineral particles of specified size or size distribution, produced from sand, gravel, rock of metallurgical slag, using one or more of the following processes - selective extraction, screening, blasting, crushing.

aggregate breakdown
The disintegration of an aggregate under environmental and/or trafficking conditions.

aggregate spread rate
The rate of application of sealing aggregate, expressed in square metres per cubic metre (m²/m³), of aggregate applied at the loose bulk density in the truck.

ALD
See average least dimension.

anionic bitumen emulsion
A type of bitumen emulsion in which the suspended particles are negatively charged.

application rate
The amount of material (usually binder) applied to a given area of road surface. (1) Binder application rate is expressed as litres per square metre, usually at 15°C. (2) Aggregate application rate is expressed as square metres per cubic metre.

aquaplaning
A condition occurring on a wet road when the tyres of a moving vehicle lose contact with the road surface and ride on a film of water.

armourcoat
The incorporation of a crushed rock or a small size aggregate into the top of a soft base to tighten up and strengthen the surface.

asphalt
A mixture of bituminous binder and aggregate with or without mineral filler produced hot in a mixing plant. It is delivered, spread and compacted while hot.

asphalt pavement
A pavement, the predominate structural strength of which is provided by asphalt layers.

asphaltic concrete
A dense, continuously graded mixture of coarse and fine aggregates, mineral filler and bitumen produced hot in a mixing plant. It is delivered, spread and compacted while hot.

average least dimension (ALD)
The average height of the aggregate particles when they are spread as a single layer with their least dimensions vertical.

binder (asphalt or slurry surfacing)
A bituminous material used for the purpose of holding aggregate particles together as a coherent mass.

binder (sealing)
A bituminous material used for waterproofing the surface and holding an aggregate layer to the base.
binder allowance
An allowance used to modify the basic binder application rate to account for existing surface texture, absorption by base and/or aggregate, and for embedment.

binder application rate
The rate of application of a bituminous binder expressed in litres per square metre (L/m²) at a given temperature, and including, where applicable, the polymer additive. In specifications, the binder application rate is expressed in L/m² at 15°C.

binder hardener
A product, usually containing gilsonite and a volatile aromatic solvent, used for the treatment of flushed or bleeding bituminous surfacings.

bitumen
See residual bitumen.

bitumen emulsion
A liquid product in which a substantial amount of bitumen (with which some oil may be mixed) is suspended in a finely divided (colloidal) condition in water by means of emulsifying and stabilising agents.

bituminous
Having physical properties similar to those of bitumen, or containing substances having such properties.

bleeding
The presence of excess free binder on the pavement surface, resulting from the upward migration of the binder, due to a combination of traffic action, warm temperatures and other factors.

blind
To spread a thin layer of suitable material to absorb excess binder or to assist in remedying a slippery or loose condition, or to fill excess surface voids.

blinding
See blind.

bleeding (seals)
A surface condition in which an excess of free binder completely covers the aggregate. There is no surface texture.

bound pavements
Pavements composed of granular materials incorporating sufficient amounts of chemical agent(s) to produce significant structural stiffness and improve the load bearing capacity.

breaking of emulsion
The separation of a bitumen emulsion into free bitumen and water. This process is accompanied by a colour change from brown to black.

brittle binder
A binder which is fragile and prone to fracture.

brooming
The use of a broom for:
(a) distributing aggregate over the surface of a pavement, or
(b) removal of loose material from a pavement surface prior to, or after, the application of a bituminous treatment.

cationic bitumen emulsion
A type of bitumen emulsion in which the suspended particles are positively charged.

cement concrete pavement
A general term for a pavement in which the wearing course is concrete. It is usually implied that the concrete layer combines the functions of the base and of the surfacing.

centreline
The basic line which defines the axis or alignment of the centre of a road or other work.

climbing lane
An auxiliary lane, usually on a long upgrade, primarily for the use of slow moving vehicles.
coarse aggregate
Aggregate having a nominal size of not less than 5 mm.

commercial vehicle
See heavy vehicle

compressibility limit (polymer modified binder)
The maximum thickness to which a film of binder may be compressed under the conditions of maximum pavement temperature and maximum traffic stress after infinite time.

concrete
An intimate mixture of aggregate, cement and water.

consistency (elastometer test)
The viscosity at service temperature, expressed as the ratio of shear stress over shear strain rate.

conventional bitumen emulsion
A bitumen emulsion with a bitumen content of sixty percent.

copolymer
A polymer that contains two or more kinds of polymer molecules, eg. SBS, SBR, EVA.

cover aggregate
Aggregate spread over the surface of a pavement after the application of a bituminous material.

crack sealing
The bridging of cracks in the pavement surface.

cracking
The appearance in the road surface of small regular or irregular shaped contiguous areas with fissures.

crossfall
The slope, at right-angles to the alignment, of the surface of any part of the carriageway.

crushed aggregate
An aggregate having all fractured faces and obtained from the crushing of hard rock. The size of aggregate particles is not necessarily uniform.

cubic aggregate
An aggregate which is cube-shaped and has six approximately square faces.

cutback bitumen
A material made from bitumen by the addition of cutter oil for the temporary reduction of viscosity.

cutter oil
A light petroleum distillate added to bitumen to temporarily reduce its viscosity.

dense graded asphalt
See asphaltic concrete.

double/double seal
A seal consisting of two successive applications of binder each followed by an application of aggregate.

drag broom
A frame carrying several broom heads used for levelling or redistributing sealing aggregate.

elastomer
A polymeric material, usually synthetic, having elastic properties akin to rubber.

embedding
The process by which aggregate is pressed into the underlying surface by traffic. For design purposes, the estimated total amount by which the sealing aggregate will be pressed into the underlying surface during the construction process as well as by traffic using the road after construction.

emulsion
See bitumen emulsion.
enrichment treatment
A light application of bituminous binder, without aggregate cover, for the purpose of increasing the binder content of a bituminous road surfacing.

epoxy seal
A light application of bitumen epoxy binder, with graded calcined bauxite cover aggregate, for the purpose of improving the skid resistance of a road surface.

EVA
Ethylene vinyl acetate - a polymer used in the modification of bitumen.

fast curing cutter oil
A cutter oil with the less volatile fractions removed.

fast curing primer
A bituminous binder cut back with a solvent that exhibits rapid loss of volatiles after application.

fast evaporating cutter oil
See fast curing cutter oil.

fatigue
The deterioration of a bound pavement or other structure caused by the action of repetitive traffic loading. Contributing factors are weak subgrade, inadequate pavement depth, basecourse saturation, excessive loading, poor quality surfacing and delamination.

fatigue crack
See fatigue cracking.

fatigue cracking
A visible crack in the wearing course eventually resulting (in an alligator pattern) from the propagation of cracks caused by fatigue in, or lack of support from, the underlying pavement layer.

fatty surface (asphalt)
Exudation of a bituminous binder onto the pavement surface. The binder becomes soft in hot weather.

fatty surface (seals)
See bleeding.

filler
A fine material, the majority of which passes a 0.075 mm sieve, derived from aggregate or other similar granular material and commonly used in slurry sealing and asphalt.

fine aggregate
A general term for aggregate of such size that it substantially passes a sieve of specified size, commonly 4.75 mm.

flaky aggregate
An aggregate particle with a least dimension (thickness) less than 0.6 of the mean of the smallest sieve size through which the particle passes and the largest sieve size on which the particle is retained.

flushed
A surface condition in which the binder is near the uppermost surfaces of the aggregate particles. The uppermost surface of the aggregate are still visible, but there is minimal surface texture.

flux oil
A petroleum distillate added to bitumen to produce a long term reduction in its viscosity.

foamed bitumen (sealing binder)
An inverted bitumen emulsion (i.e., water in bitumen) which is expanded by aerating and combining with a foaming agent.

foamed bitumen seal
A sprayed seal that uses foamed bitumen as the binder.

fretting
The loss of aggregate, with or without binder attached, caused by the brittle fracture of the binder film under or around aggregate particles.

geostrip
A waterproofing / strain alleviating membrane strip which may be used as a bandage treatment over cracks up to 5 mm or joints in advance of sealing.
geotextile
A synthetic fabric, woven or non-woven, used for various purposes including embankment reinforcing and stabilisation, as a filter layer between dissimilar materials and as a strain alleviating membrane.

geotextile reinforced seal (GRS)
An application of a bituminous binder into which both aggregate and geotextile are incorporated to provide a durable wearing surface.

geotextile seal
See geotextile reinforced seal.

grade
The rate of longitudinal rise or fall of a carriageway with respect to the horizontal, expressed as a ratio or as a percentage. Also termed gradient.

grading (aggregates)
The quantities of the various particle sizes present in a mineral aggregate, expressed as a percentage by mass of the whole. See particle size distribution.

gravel
A mixture of mineral particles passing a 75 mm sieve and with a substantial portion retained on a 4.75 mm sieve.

hair crack
An irregularly running, thin, narrow, crevice or fissure at the surface of a concrete or clay product, not penetrating deeply.

hairline crack
See hair crack.

heavily bound base
A bound pavement having a minimum unconfined compressive strength (UCS) value of 4 MPa, with enhanced tensile properties.

heavy vehicle
A two axle vehicle with the minimum axle spacing greater than 3.2 m, or a three or more axle vehicle configured at least with two axle groups (excluding short towing vehicles e.g., trailer, caravan, boats etc.).

Also defined by Austroads as a Class 3 or higher classification vehicle.

high bitumen content emulsion
A bitumen emulsion with a bitumen content of at least sixty seven percent.

high bitumen content emulsion with polymer additive
A high bitumen content emulsion containing a polymer additive to assist in the development of early aggregate retention. The polymer additive may be added during emulsion manufacture or emulsified separately and added to bitumen emulsion prior to use.

high bitumen content emulsion with polymer modifier
A high bitumen content emulsion containing a polymer modified bitumen binder.

high stress seal (HSS)
A bituminous seal, or reseal, treatment which is subject to heavier than normal traffic loading due to braking, accelerating and turning vehicles.

hold point
A point beyond which a work process must not proceed without the Superintendent’s express written authorisation.

hungry surface (seal)
A surface condition in which the aggregate is proud of the surface and the binder is approximately half way up the sides of the aggregate particles.

joint filler
A material used to prevent entry of debris or foreign matter into a joint of a structure or pavement.
joint sealant
See joint sealer.

joint sealer
Material used to prevent the passage of water or other liquids through a joint.

lane line
A line (usually painted) other than the centre line which divides adjacent traffic lanes.

lot (slurry surfacing)
A lot is defined as 50 m³ of slurry or one day’s production (whichever is the lesser), or such smaller quantity that is considered as representative of consistent production of the paving unit.

matt (seal)
A surface condition in which the aggregate is proud of the surface and the binder is approximately two thirds of the way up the sides of the aggregate particles.

microsurfacing
A bituminous slurry surfacing, usually containing polymer, which is capable of being spread in variably thick layers for ruffilling and correction courses, and for wearing course applications requiring good surface texture.

modified pavement
An improved pavement with a base layer comprising granular materials.

multigrade bitumen
A bituminous binder the properties of which are less sensitive to temperature than those of conventional bitumens.

nominal size
A size designation of an aggregate that gives an indication of the largest particle size present.

nominal size (bituminous slurry)
A designation for a bituminous slurry, chosen to give an indication of the largest aggregate particles typically present.

open graded asphalt
A bituminous mix using aggregate containing only small amounts of fine material, and providing a high percentage of air voids.

open graded asphalt mix
See open graded asphalt.

open-graded mix
See open graded asphalt mix.

oxidised binder
A binder which has become hard and brittle as the result of chemical attack by oxygen in the presence of heat and sunlight.

PAFV
See polished aggregate friction value.

particle size distribution
See grading (aggregates).

partly crushed aggregate
An aggregate particle containing a mixture of rounded and crushed faces.

pass (roller)
In rolling, the passage of all axles of a roller over a point.

paving unit (slurry surfacing)
A purpose-built continuous flow mixing unit capable of accurately metering each individual component material into a mixer which thoroughly blends these materials to form a homogeneous bituminous slurry and transfers the slurry into a spreader box for application to the pavement surface.

peeling
A condition whereby a seal has debonded from the underlying base and been removed by traffic leaving the surface of the base in an unprotected condition.

plastomer
Polymers loosely classified as plastomers may possess some elastomeric properties but predominantly exhibit plastic flow properties under high strain conditions at ambient temperatures.
plucking
The loss of aggregate with its attached binder from a seal under traffic, caused by a separation within the binder film that lacks sufficient cohesive strength to retain the aggregate in place.

pneumatic tyred roller
A static roller, the rubber tyred wheels of which are inflated with air. Often referred to as a multi-wheel roller.

polished aggregate friction value (PAFV)
A measure, on a scale of 0 to 100, of the resistance of an aggregate to polishing under the action of traffic as determined in standard laboratory tests.

polishing
A condition whereby the surface of an aggregate becomes smooth under the action of traffic. This tends to reduce tyre/road friction.

polymer modified binder (PMB)
A binder consisting of polymeric materials dispersed in bitumen with enhanced binder performance for particular applications.

polymer modified bitumen
See polymer modified binder.

pot hole (pothole)
A hole in a pavement, frequently rounded in shape, resulting from the loss of pavement material under traffic.

precoating
The coating of an aggregate with an oil, water or bituminous based material, with or without an adhesion agent, to wet the dust and improve the subsequent adhesion of bituminous material.

prime (prime coat)
An application of a primer to a prepared base, without cover aggregate, to provide penetration of the surface, temporary waterproofing and to obtain a bond between the pavement and the subsequent seal or asphalt. It is a preliminary treatment to a more permanent bituminous surfacing.

primer
A bituminous material of low viscosity and low surface tension used in priming.

primerbinder
A material more viscous than a primer and required to act both as a primer and binder, and used in primersealing.

primerseal
An application of a primerbinder with a fine cover aggregate to a prepared base to provide penetration of the surface and retain a light cover of aggregate. It is used as a preliminary treatment to a more permanent bituminous surfacing. It is intended to carry traffic for a longer period than a prime.

proud
A part or portion of an aggregate particle projecting above another or above its surroundings.

quick drying primer
See fast curing prime.

rack-in coat
See scatter coat.

ravelling
The loosening of aggregate particles forming the surface course of a pavement.

reflection cracking
A visible crack in the pavement surfacing resulting from the movement associated with cracks in the underlying pavement layer. It is caused by vertical or horizontal movements in the pavement beneath the overlay, brought on by expansion and contraction with temperature or moisture changes or the action of traffic.

reflective cracking
See reflection cracking.

rejuvenation
A light application of an emulsified bituminous material to replace part of the lost maltene fraction in oxidised bitumen.
rejuvenator (sprayed seal)
A liquid product in which a substantial amount of light petroleum product is suspended in water, or vice versa. This is applied in the form of a spray to asphalt or bituminous sealed pavement surfacings to restore the properties of the bituminous binder.

reseal
A seal applied to an existing sealed, asphalt, concrete or timber surface.

residual binder
A binder that remains in service after any volatiles have evaporated.

residual bitumen
Bituminous material obtained by processing the residue from the refining of naturally occurring crude petroleum.

rounded aggregate
An aggregate which is generally spherical or oval in shape and has a “smooth” surface with no sharp or broken edges.

rubber bitumen sprayed seal
See rubberised bitumen seal

rubber seal
See rubberised bitumen seal.

rubberised bitumen seal
A sprayed seal where the binder consists of bitumen modified by the incorporation of rubber, either natural or synthetic. See also polymer modified bitumen, HSS, SAM and SAMI.

run (slurry surfacing)
The area of pavement selected for coverage with bituminous slurry during a single continuous operation of the paving unit.

rut-filling (slurry surfacing)
The placing of microsurfacing in wheel path ruts up to 50 mm deep using a purpose-built spreader box called a rut-filling box.

rutting
The longitudinal vertical deformation of a pavement surface in a wheel path, measured relative to a straightedge placed at right angles to the traffic flow and across the wheel path.

SAM
See strain alleviating membrane.

SAMI
See strain alleviating membrane interlayer.

scatter coat
A light application of small size aggregate to temporarily "lock in" a larger size aggregate seal to reduce aggregate movement during rolling and initial trafficking.

scrap rubber
Rubber particles manufactured from waste or reclaimed rubber products such as vehicle tyres and graded to conform to a specified size range.

scrap rubber modified binder
A two phase system of vulcanised rubber particles dispersed in bitumen where the particles are partially digested and partially swollen by the digestion of bitumen oils.

seal (bituminous)
A thin surface layer of bituminous binder into which aggregate is incorporated. See also sprayed seal.

seal coat (geotextile)
The application of a seal to provide a durable wearing course. It may be reinforced with a geotextile. See also GRS.

shoulder
The portion of the carriageway beyond the traffic lanes and contiguous and flush with the surface of the pavement.

shoving
Lateral displacement of pavement structure by braking, accelerating or turning vehicles.
single-size aggregate
An aggregate having a major proportion of particles lying between narrow size limits.

single/double seal
A seal consisting of a single application of binder followed by a double application of aggregate.

single/single seal
A seal consisting of a single application of binder followed by a single application of aggregate.

skid resistance
The frictional resistance provided by the pavement surface to the vehicle tyres during braking or cornering manoeuvres. It is usually measured on wet surfaces.

slick surface
A surface which has become hard, smooth and slippery.

slurry
A stable suspension of aggregate and filler in a less dense, liquid bituminous emulsion.

slurry seal
A thin layer of bituminous slurry surfacing, usually without a polymer modifier.

slurry surfacing
A general term for slurry seal and microsurfacing.

smooth
A surface condition in which the aggregate is worn and the texture depth is minimal.

sprayed seal
A thin layer of binder sprayed onto a pavement surface with a layer of aggregate incorporated and which is impervious to water.

sprayed surfacing
A thin layer of aggregate and bituminous binder which as the uppermost pavement layer is directly subjected to the forces of vehicular traffic.

spreader box (slurry surfacing)
A device capable of producing a uniform bituminous slurry surface and equipped with either a flexible or rigid rear strike-off screed.

stabilise
To modify any natural material to improve or maintain its load carrying capacity, or to waterproof it.

stability (emulsion)
The resistance to separation of the dispersed bitumen phase from the bitumen emulsion.

stockpile
A heap or stack of aggregate held in stock for future use.

strain alleviating membrane (SAM)
A sprayed seal with the binder containing a relatively large concentration of rubber or polymer modifier. It is used to absorb strains that occur in a road pavement and thereby reduce reflection cracking.

strain alleviating membrane interlayer (SAMI)
Similar to a SAM, but provided as an interlayer before placing an asphalt overlay.

stripping (seal)
A separation of the binder film from the surface of aggregate, usually in the presence of water.

stripping (pavement)
The loss of aggregate from a pavement layer or surfacing, caused by the action of traffic, usually in the presence of water.

surface texture (sprayed seal)
The surface property of a seal resulting from the manner of association or disposition of the aggregate particles to each other and to the binder. (See texture depth).
surfacing
The uppermost part of a pavement specifically designed to resist abrasion from traffic and to minimise the entry of water. It may be a sprayed seal, asphalt or other material.

tack coat
A light application of a bituminous material without cover aggregate, to a prepared base as a preliminary treatment to promote surface adhesion, without penetration of the pavement surface.

texture depth (seal)
The average height of aggregate particles above the binder in a seal.

traffic
Any vehicles, persons, or animals travelling on a road.

traffic volume
The number of vehicles flowing in both directions past a particular point in a given time (eg, vehicles per hour, vehicles per day).

treated surfaces
A general term referring to the surfaces of bound pavements, primersealed bound pavements or previously sealed pavements.

unbound base
A base comprised of granular or mechanically stabilised materials and without the capacity to resist significant tensile stresses.

vehicles per lane per day
A measure of the volume of traffic expressed as vehicles per lane per day.

very hungry surface (seal)
A surface condition in which the aggregate is proud of the surface and the binder is approximately one third of the way up the sides of the aggregate particles.

viscosity
The internal friction in fluids due to molecular cohesion.

vl/d
See vehicles per lane per day.

voids
The spaces within the bulk of material not occupied by solid matter.

voids factor
The percentage of the seal layer thickness to be filled with binder. This is dependent on traffic.

waterproofing
The process of rendering surfaces or materials impervious to water.

wearing course
That part of pavement upon which the traffic travels.

well crushed aggregate
A crushed aggregate of relatively uniform shape and size.

wettability
The extent to which a solid is wetted by a liquid, measured by the force of adhesion between the solid and liquid phases.

wetting
The process of binder (or other liquid material) spreading over the surface of an aggregate and adhering to that surface immediately on contact. This is generally referred to as “active adhesion”.

witness point
A point in a work process where the Contractor must give prior notice to the Superintendent and the option of attendance may be exercised by the Superintendent.