COLAS SOLUTIONS

Products & Services Capabilities

COLAS

WE OPEN THE WAY

SEALCOATING

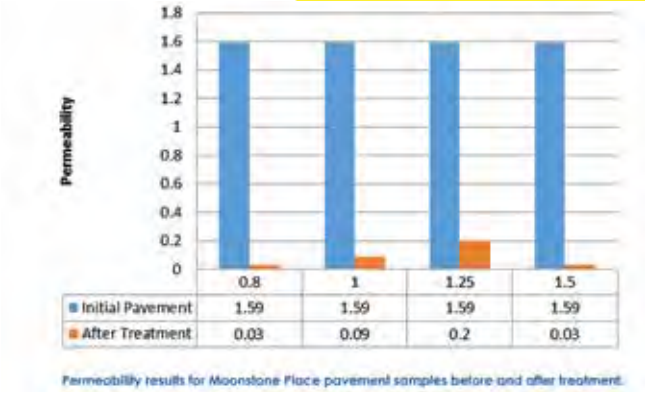
A PREVENTATIVE MAINTENANCE TREATMENT

Introduction

Sealcoating is a preventative maintenance treatment designed to preserve asphalt and spray seal pavements in an as new condition for as long as possible and thereby reduce the need for expensive rehabilitation and reconstruction. Sealcoating treatments are designed to seal the pavement surface against the intrusion of air and water, thereby slowing the oxidation process.

Material

SealCoating involves the application of a polymer modified bitumen emulsion containing specially graded aggregates, fillers, latex, rubber and pigment adjusters, with sand and water being post added on site prior to application. During the application process the macro texture of the initial pavement is filled with the emulsion and fine sand to the point of oversaturation covering the exposed aggregates in the process. During the curing phase separation occurs between the filled emulsion and water resulting in a gradual reduction in layer thickness. After the water has vaporized the residual SealCoat layer remains almost level with the top of the aggregate after curing has ended.



Permeability results for Moonstone Place pavement samples before and after treatment.

PENDULUM SKID TEST RESULTS

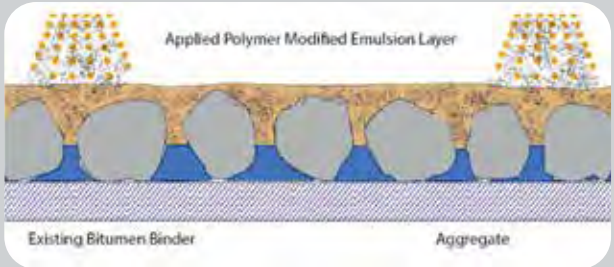
Street Name:	Delong Street, Acacia Ridge		
Sample No	App Rate	Skid Resistance	
		Surface Texture	Test Surface Mean BPN
1	0.5	Average	75
2	0.7	Average	79
3	0.8	Average	76
4	1	Average	81
	Initial Surface Texture:	Average	55

Street Name:	Forgan Street, Acacia Ridge		
Sample No	App Rate	Skid Resistance	
		Surface Texture	Test Surface Mean BPN
1	0.5	Coarse	81
2	0.7	Coarse	81
3	0.8	Coarse	78
4	1	Coarse	78
	Initial Surface Texture:	Coarse	55

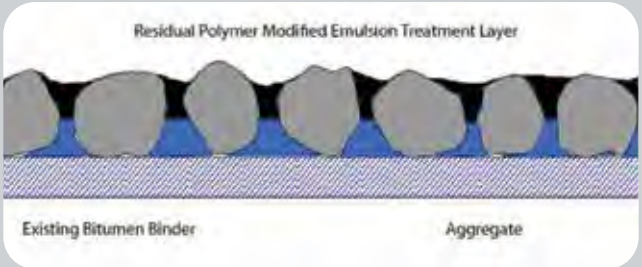
Street Name:	Gemstone Crescent, Acacia Ridge		
Sample No	App Rate	Skid Resistance	
		Surface Texture	Test Surface Mean BPN
1	0.8 + 0.7	Coarse	72
2	1	Coarse	78
3	1.25	Coarse	83
4	0.8	Coarse	78
	Initial Surface Texture:	Coarse	54

Street Name:	Gregory Street, Acacia Ridge		
Sample No	App Rate	Skid Resistance	
		Surface Texture	Test Surface Mean BPN
1	0.7 + 0.8	Very Coarse	84
2	1	Very Coarse	84
3	1.25	Very Coarse	84
4	0.8	Very Coarse	79
	Initial Surface Texture:	Very Coarse	75

SealCoat Treatment Process



Cured SealCoat Conditions



Application Process

Custom built sprayers with larger nozzles than conventional bitumen sprayers, specialist pumps and mixing paddles help to keep the material in suspension. Being an emulsion it is not heated but applied at ambient temperature. Advantages over conventional treatments include the speed of application with an average shift spraying over 6,000m2 in urban streets and a fast drying time of between 30 mins and 2 hours. Disadvantages include no shape correction and a relatively short life span of roughly 5 years between applications. The finished treatment provides a rich black colour that seals and extends the pavement life at a low cost.

Results / Testing

Current testing includes permeability and skid resistance with results showing the permeability level reduces and an increase in skid resistance values across all treated pavements.

Conclusion

The surface of flexible asphalt pavements designed for a 20 year life, commonly have a functional life of between 12-15 years between major maintenance treatments; however a mid-life surface treatment of SealCoat will help to impede the aging process and potentially delay the timing of major maintenance treatments. After an application the pavements skid resistance is improved and permeability decreased.

SRS SEALCOAT

HIGH PERFORMANCE BITUMINOUS PAVEMENT PROTECTION

Your pavement is under constant attack.

You need the protection of a safe, environmentally friendly material that fights back with its own powerful, clean chemistry.

WHAT IS SRS SEALCOAT ?

SRS SealCoat is a micro-surfacing sealant designed to extend the life of existing bituminous surfaces.
By combining SRS SealCoat's high adhesive characteristics with polymer modifiers and varied quantities of solids to suit the condition of individual pavements, SRS SealCoat will seal and protect your pavement.

Asphalt and spray seal surfaces are under constant attack! Sun, rain and hail all take their toll. If the pavement isn't protected it will deteriorate, weaken and begin to shed particles as the binder becomes brittle and fails.

The loss of larger stones, cracking, water penetration and accelerated failure with time. Without timely intervention with SRS SealCoat, the cost of repairing pavement increases substantially.

SRS SEALCOAT +

HIGH PERFORMANCE BITUMINOUS PAVEMENT PROTECTION

Your airport pavement is under constant attack.

You need the protection of a safe, environmentally friendly material that fights back with its own powerful, clean chemistry.

WHAT IS SRS SEALCOAT + ?

SRS SealCoat + is a micro-surfacing sealant designed to extend the life of existing bituminous surfaces. By combining SRS SealCoat's high adhesive characteristics with polymer modifiers and varied quantities of solids to suit the condition of individual pavements, SRS SealCoat will seal and protect your pavement.

Asphalt and spray seal surfaces are under constant attack! Sun, rain and hail all take their toll. If the pavement isn't protected it will deteriorate, weaken and begin to shed particles as the binder becomes brittle and fails.

The loss of larger stones, cracking, water penetration and accelerated failure with time. Without timely intervention with SRS SealCoat, the cost of repairing pavement increases substantially.

FRM SEALCOAT

EMULSION ADHESIVE TECHNOLOGY FUEL RESISTANT SEALCOATS

FRM SealCoat, is a FAA Fuel Resistant, non-toxic, Low PAH bitumen based sealcoat that can be custom designed as a Spray Applied Aggregate Slurry.

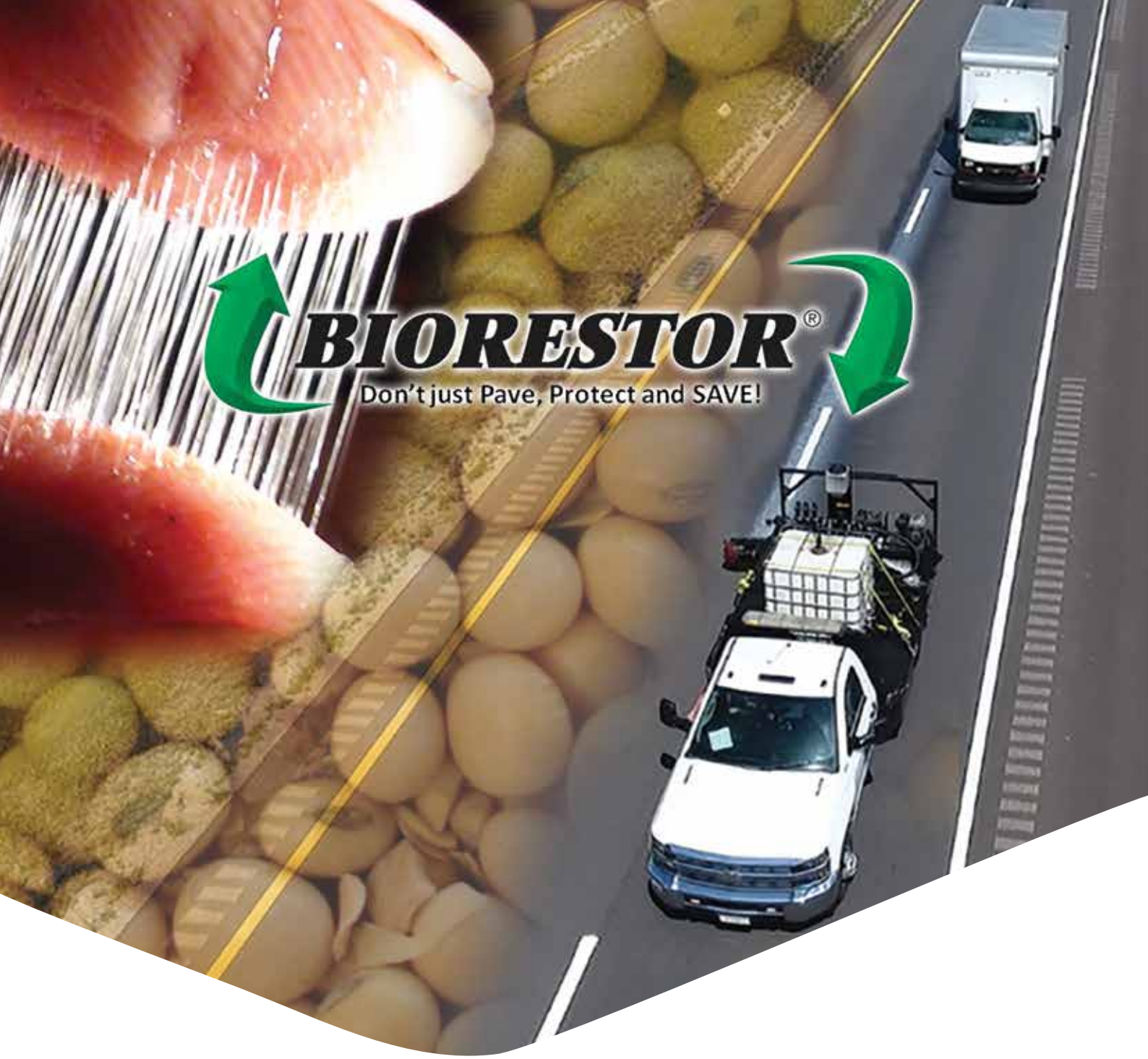
FRM SealCoat is a plural component, single package, reactive, high molecular weight polymer modified bitumen sealcoat. FRM SealCoat is designed to penetrate deep into pavement substrates where it permanently weather seals airport, street and highway apron surfaces. It may be applied as a mineral filled sealer through spray, broom, or squeegee and may be applied as an un-filled coating through high volume equipment.

Within as little as a few minutes after installation a tough but ductile, black satin surface permanently protects the underlying asphalt surface from tyre wear, sun degradation and moisture. The high molecular weight and high softening point of this material prevent tracking or displacements by rolling traffic in the heat of the day.

FRM SealCoat is filled with an engineered hydrocarbon additive, which is provided as an emulsified, high molecular weight thermoplastic. It exhibits a high softening point, good low temperature ductility and excellent hydrolytic stability; as well as superior adhesion to moist mineral surfaces.

ADVANTAGES:

- Jet fuel (Jet A thru JP-8) and Motor Vehicle Oil/ lube resistant.
- Unique reactive chemicals attack natural metal oxides present in the exposed aggregate surface.
- Chemical resistance, rate of cure, final surface hardness and skid characteristics can be modified to meet local specifications.
- May cure in less than twenty (20) minutes, in optimal conditions, to a track free surface.
- Safe to handle and store.
- Near zero VOC; and odourless.
- High temperature, tyre scuff resistant to power steering abuse
- Easy clean up with water.
- Cured container residue safe for municipal landfill



BIORESTOR®

ASPHALT REJUVENATOR



Asphalt Rejuvenator

BIORESTOR® Asphalt Rejuvenator is a restorative asphalt modifier that has been shown to increase a pavements life cycle by up to 40%! It is a participant in the USDA BioPreferred program. It has been developed from bio-based oils with a synthetic polymer modification, to create an environmentally sustainable road treatment.

With the application of BIORESTOR® just after paving, the pavement lifespan can be dramatically increased, saving money for the customer!

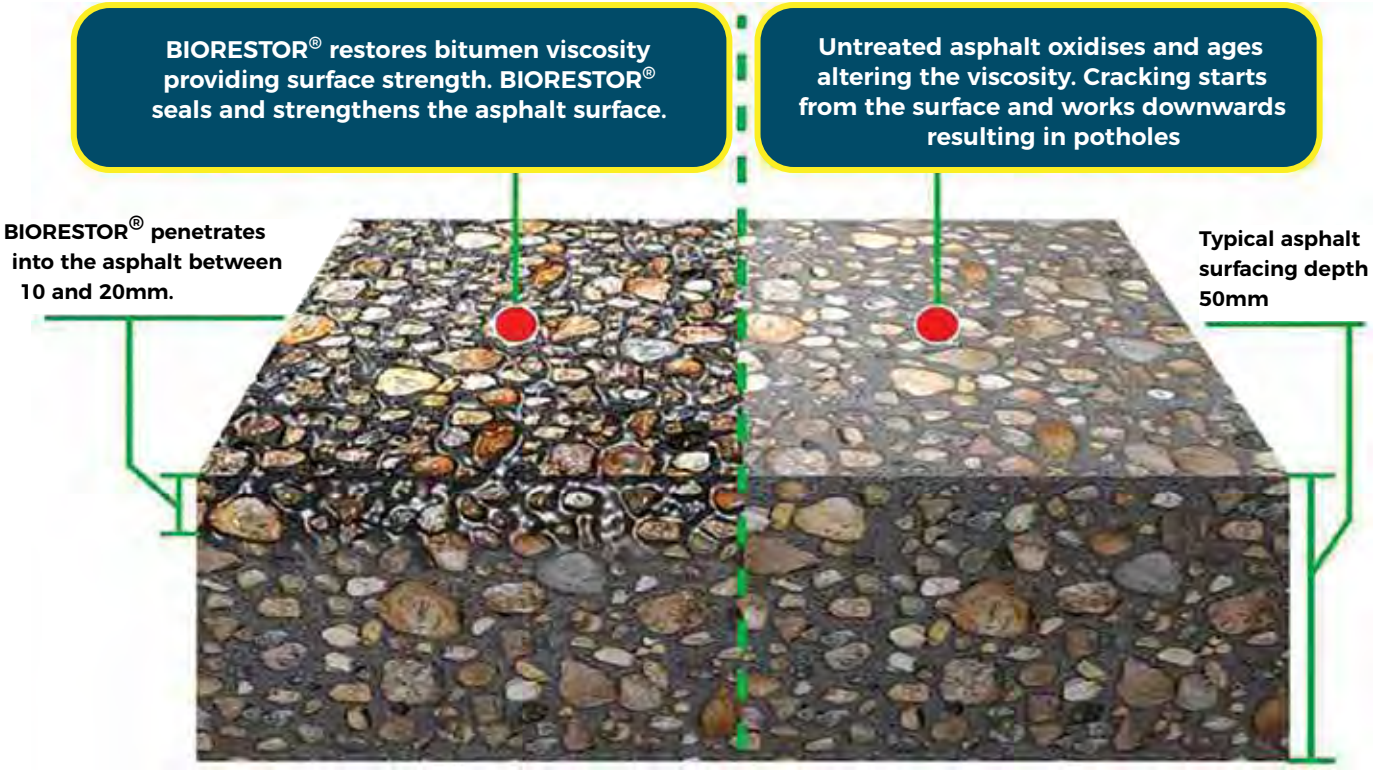
Benefits of BIORESTOR®

- Reduces cracking
- Increases flexibility
- Decreases viscosity (Brittleness)
- Increases penetration (Softness)
- Reduces ravel & pot-holes
- Field tested since 2004

How BIORESTOR works:

Asphalt pavements are termed as flexible pavements, which are constructed of thin layers of bitumen over stone bases or other asphalt layers. All layers are intended to flex to accommodate vehicle weight and provide an undamaged surface for driving. Over time these layers become brittle and inflexible causing them to crack under heavier loads. BIORESTOR® penetrates the asphalt by introducing agriculture oils that soften the asphalt renewing flexibility.

BIORESTOR® is applied to the surface by trained applicators, utilizing a precise spray system. The treatment is applicable to new as well as older pavements in good condition. BIORESTOR® can be used as a construction seal on newer pavements as part of the pavement contract and again 4-5 years later to provide cost savings and add years to the lifecycle of asphalt surface.



Why Choose BIORESTOR Asphalt Rejuvenator Emulsion?

Without asphalt preservation and preventative maintenance, repaving is inevitable in a relatively short period of time. At only a fraction of the cost of paving, BIORESTOR® preserves and protects asphalt pavements ensuring the longevity and quality of your paved investment.

Time and testing have shown that using a rejuvenator such as BIORESTOR®, before asphalt breaks down, provides communities the opportunity to use their road monies more efficiently and expand their annual pavement preservation goals. It is cheaper and easier to take care of a good road than to save a bad one.

Roads and Highway

BIORESTOR® has been applied on various pavements with satisfactory results. As suggested by the Foundation for pavement preservation, asphalt rejuvenators applied to lower volume or traffic roads can provide years of life. Larger volume roadways typically involve a construction joint upon placement of the second pavement mat. This joint is typically lower density and more prone to deterioration. Over 2000 miles of construction joint has been treated with positive outcomes.

Parking Areas

Asphalt parking lots tend to have less heavy traffic as roadways but are still susceptible to oxidation and aging. BIORESTOR® applied topically is a clear penetrative sealer that does not require the need for re-striping. Tired of black tar seal coatings wearing off and becoming eye sores? Instead use an asphalt rejuvenator to maintain flexibility and ensure uniform pavement condition for years.

Airports and Runways

Airports are notorious for large amounts of asphalt pavements in the form of runways, overruns, aprons, and taxiways. While these pavements may not receive large amounts of traffic typically, they still are prone to UV and oxidation deterioration. Asphalt rejuvenators have shown to alleviate the effects of years of aging. FAA-P632 is a aviation specification designed to interpret the effects a rejuvenator offers.

Walking and Bicycle

Bike paths are a luxurious get away from big city street or a practical form of transportation for certain motorist. While funding for them can be crucial for construction, preservation of this investment is important. Treating these desirable assets can extend the operational life of the pavement and delay the large cost of resurfacing or repair work in the future.

GSB-88®

RESTORATIVE AND PROTECTIVE SEALER

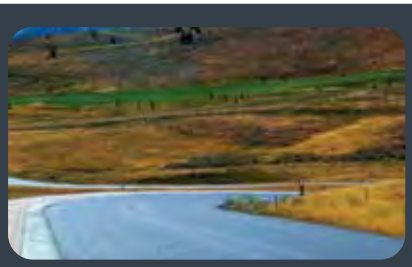
High performance asphalt pavement preservation

GSB-88 HARNESSES SUPERIOR CHEMISTRY

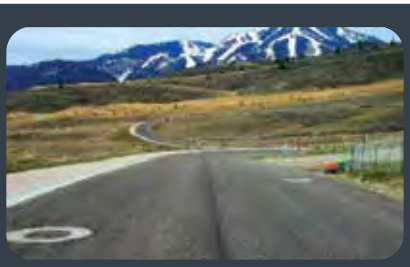
Oxidation ruins asphalt pavement binder. Our Unique GSB Chemistry slows the molecular ageing and deterioration reactions in pavement binder oils, so it keeps the binder healthy.

GSB-88 INTEGRATES INTO THE PAVEMENT

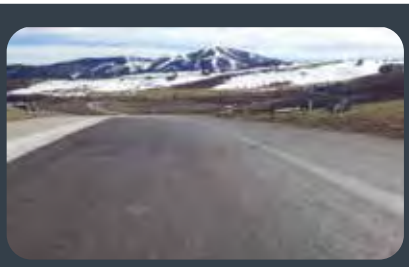
Other sealers sit on the pavement surface and may crack, peel (delaminate), or wear off. GSB-88 becomes part of the surface matrix to restore, restructure, strengthen and protect the ageing pavement



First treatment August 2011



Five years later April 2016



Second treatment August 2016

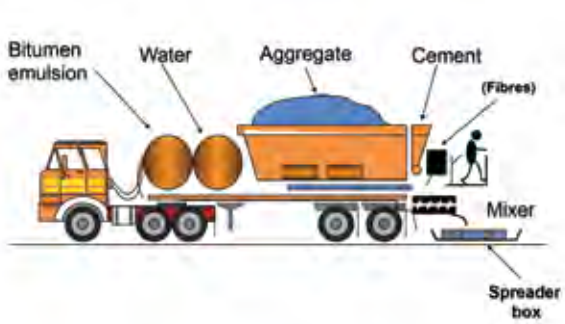
Photo taken 9 months later

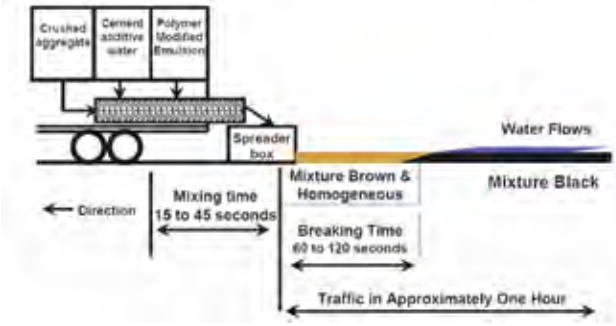
GSB-88 Has been used successfully on roads and airfields around the world for more than 30 years.

MICROSURFACING

DELIVERING SUSTAINABLE CONSTRUCTION SOLUTIONS

A low carbon alternative to conventional hot surfacing treatments.





With increasing focus on sustainable procurement, COLAS Microsurfacing solutions offer a cold applied, low carbon alternative compared to the conventional hot surfacing treatments.

By reducing the output of energy, emissions and waste, COLAS are able to aid clients in significantly lowering their carbon footprint.

Colmat Microsurfacing is specially formulated so that it can be:

- Applied in 5mm, 7mm, or 10mm aggregate blends – dependent on texture requirements.
- Used as a single coat wearing course or a double coat void filling, regulating or correction treatment.
- Specially designed by our engineers to suitable treat any bituminous or concrete surface.

Microsurfacing for residential or urban roads

- Cost effective maintenance application to preserve existing pavements and extend service life
- No loss of curb reveal and no impact on existing drainage
- Provides a smoother, safer surface with excellent skid resistance
- Durable impervious surface
- Reduced traffic disruption
- Can be utilised to restore pavement profile and shape
- Zero waste – Lower carbon footprint

COLMAT FOR AIRFIELDS

"Colmat" is the product name of the Colas Solutions advanced Polymer Modified Microsurfacing systems. Microsurfacing is a generic term used for proprietary Slurry surfacing products. Colas worldwide are highly experienced in designing & applying various Colmat treatments to suit individual runways & taxiways. Colas UK technical have been instrumental in co-designing an approved specification for runways & taxiways in conjunction with the Defense Infrastructure Organization in the UK. Colas Solutions have now introduced this process, along with a wealth of experience into Australia, in order to provide environmentally friendly, less disruptive, competitive alternatives to conventional treatments.

COLMAT 5mm:

As a single coat application, this process is primarily used on Asphalt or Concrete pavements as a preventative measure to extend the lifespan of existing runways, taxiways or aprons, that have oxidized over time or are showing signs of deterioration despite maintaining a reasonable profile. This should be applied to ageing Asphalt or Concrete prior to any significant loss of existing coarse aggregate, in order to reduce the risk of F.O.D. The treatment can be effective in sealing fine embrittlement cracks that may be present. Although only a 5mm aggregate blend the finished texture depth will be around 1.5mm.

Application of 5mm Microsurfacing on existing Asphalt

Rapid application & minimum disruption

Colmat 5mm application is a swift process, with typical production levels of above 25,000m2 per shift & an initial curing period of around 30 minutes. All materials are batched through specialist computerized equipment to ensure quality, efficiency & consistency, which is backed up by Colas Solutions QA. The nominal thickness being around 5mm will seal in the existing surface, with normal life expectancy to be in excess of 5 years. The treatment can be re-applied when required, on the top of the existing Colmat.

COLMAT 7 or 10mm:

Colmat 7/10mm has been designed to treat Airfields & Taxiways with a greater level of deterioration or deformation. The design advised by experienced Colas Solutions surveyors would normally be a 2-coat application with a nominal 15m thickness. The 7 or 10mm base would be applied as a correction course to alleviate any wheel rutting or deformities. The wearing course can be applied after 24 hours & can be either the 5,7 or 10mm system. Curing time remains the same for each application of Colmat.

During application of Colmat 7mm

COLMAT FOR ROADS & FOOTPATHS

Colas worldwide has years of experience and expertise in repairing, protecting and extending the usable lifespan of infrastructure roads, footways and other surfaces. Colas Solutions Australia have recently invested in the latest technology, expertise, process & equipment to meet the needs of a rapidly growing market in Australia. This has cumulated into performing superbly on several major contracts across the country, including Main Roads, town streets, Cul-de-Sacs & runways.

When road surfaces develop ruts and deformations, have water problems and where skid resistance starts to fail, our affordable, innovative and unique specialist surface treatment "Colmat" will help maintain safety standards and extend the life of your road or footpath by up to 10 years.

Colmat innovative surface treatments are flexible and can be prepared to meet your individual site requirements. They are available in 5, 7 or 10mm aggregate gradings & can be used as a 5 or 7mm single coat application for lower traffic counts as a preventative solution to deterioration, or a regulatory / rut correction course can be applied prior to the Colmat wearing course for sites with a higher level of deterioration, correction requirements or heavy vehicle usage.

Before & after hand applied footway Microsurfacing

Colmat 7mm single application

Our range of Colmat Microsurfacing treatments offer several benefits:

- Seal & protect the existing surface
- Improve the rideability, profile & aesthetics
- Quick & easy to apply, minimum preparatory work required
- Cold applied, low carbon footprint, minimum waste materials, low cost
- Minimum traffic disruption
- Improved texture / skid resistance
- Can be batched & hand applied to footpaths
- Low traffic noise
- Rapid curing, open to traffic typically within 10 minutes
- All materials contained & batched in the specialist Machine on-site
- Minimal loose chippings, minimal aftercare

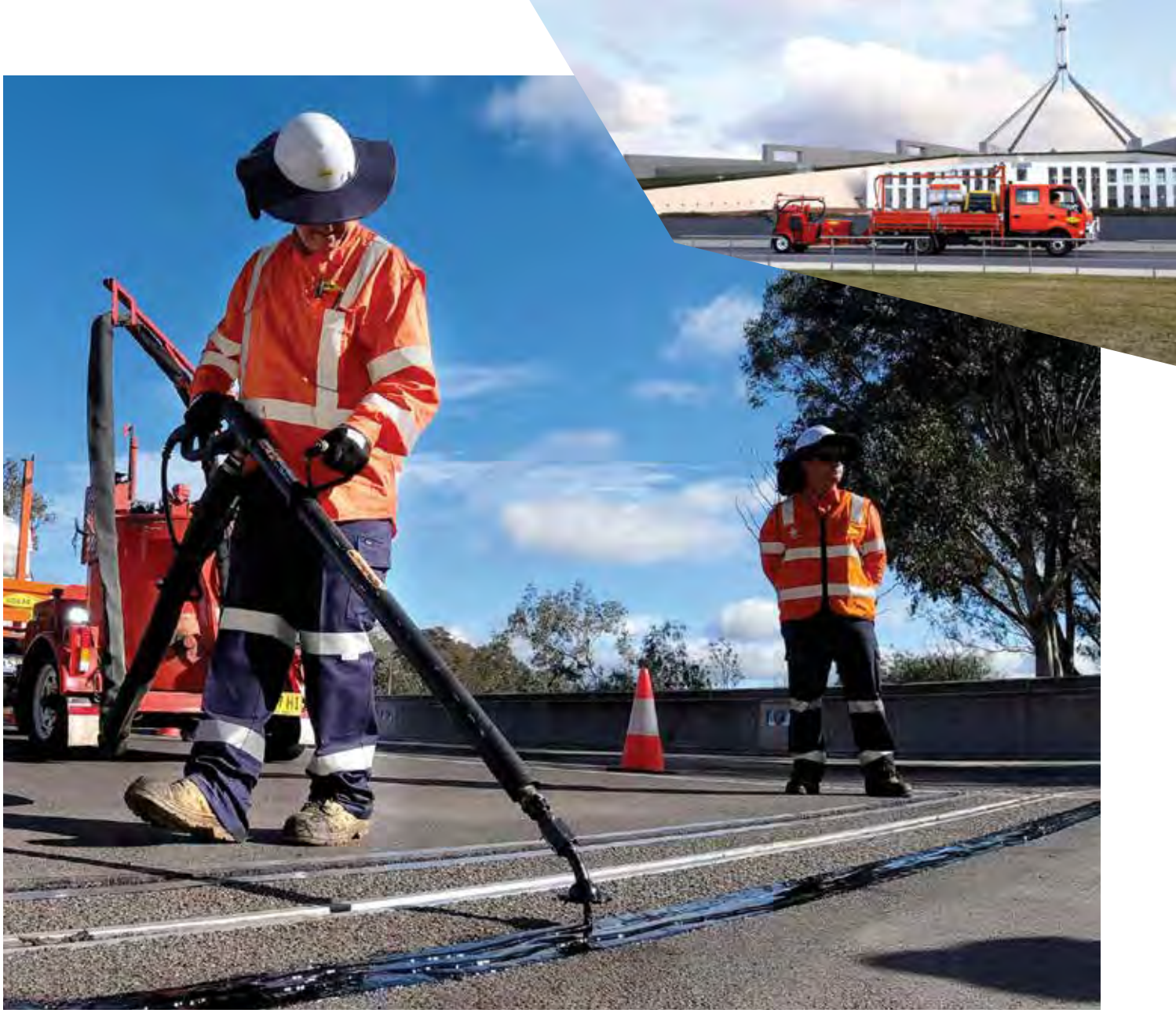
All our Colmat treatments are subject to our thorough Quality Assurance process & all Colmat treatments carry our standard 12 month maintenance warranty.

Our 2 coat 7mm process is typically a 15mm nominal thickness, which equates to around 24kg/pm2, although rutting can be filled up to 30mm in 1 pass with the same material. Variable application rates are always available to cover individual needs. Our experienced surveyors will design & recommend a Colmat process to suit.

Unique Specialist Computerized equipment

CRACKSEALING

Overband Crack Sealing is one of the most economical pavement maintenance tools for asphalt and concrete pavements.



SAMIfilla HM uses elastomeric polymers which produce a strong yet flexible seal that bonds well to the walls of the crack.

This process is the key to keeping water out of the pavement sub-base which in turn will help to extend the service life period of the pavement.

FEATURES

- Excellent ductility in cold temperatures
- Superior tensile strength supports heavy traffic loading
- Applied under pressure to fill and seal cracks
- Excellent seal integrity yielding longer service life

BENEFITS

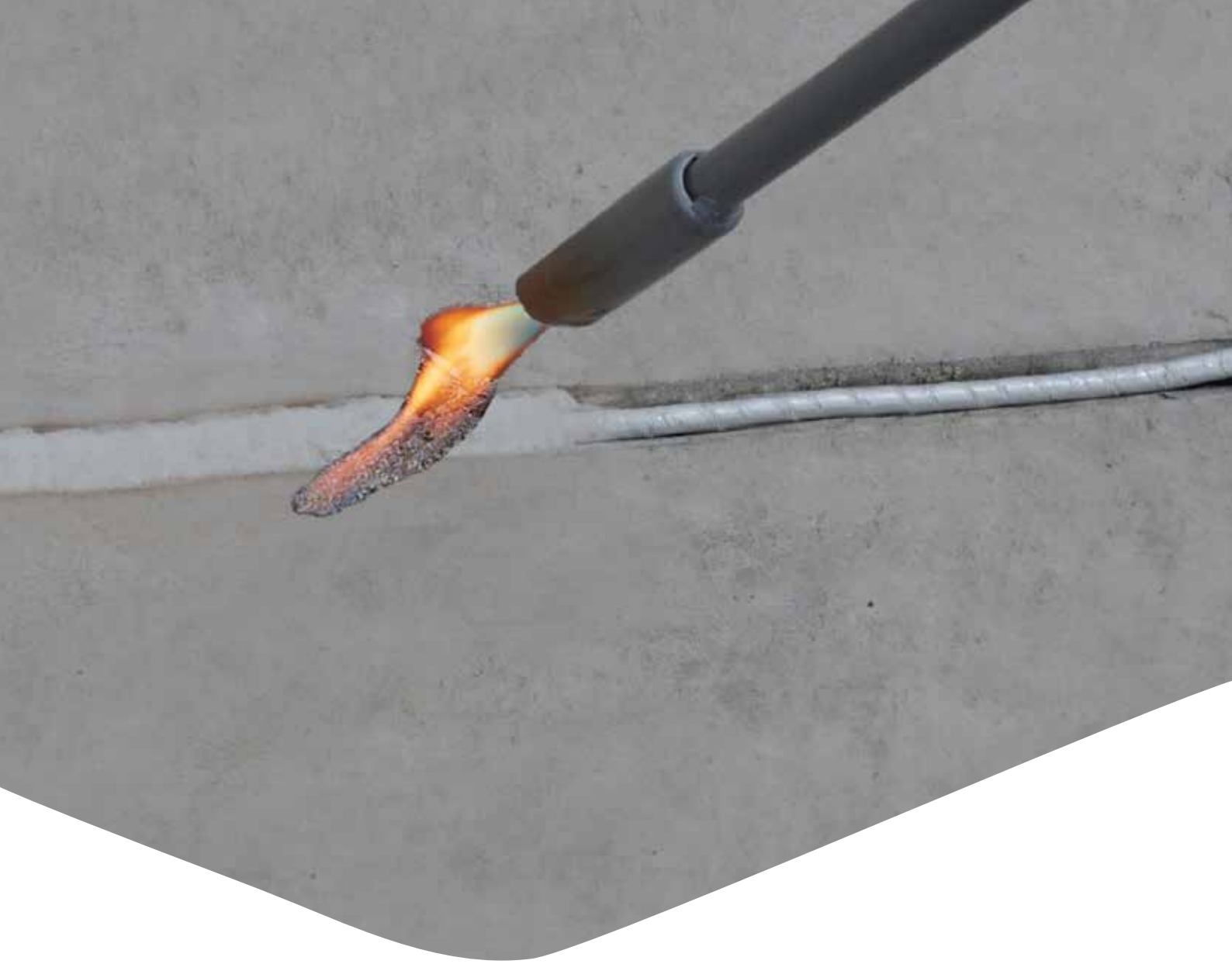
- Delays and minimizes reflective cracking
- Low stiffness, highly elastic and good memory
- Extends overall pavement service life
- One of the most economical pavement repair process
- Consistent quality application with high production

APPLICATIONS

- Highways
- Streets and Roadways
- Race Tracks
- Airport Runways and Taxiways
- Car Parks
- Asphalt and Concrete Pavements

COMMON USES

- Random cracking
- Transverse cracking
- Longitudinal cracking
- Reflective cracking
- Concrete construction joints



CRACK STIX

DIRECT HEAT "RUBBERISED" CRACK & JOINT SEALANT

Elastomeric compound.
Polymer modified.
100% water tight seal.
Traffic ready in 20 minutes.
Multi-use for asphalt and concrete.

TECHNOLOGY BREAKTHROUGH

Now for the first time, Industry professionals can get contractor type results in 3 easy steps using 3 tools. **CRACKSTIX** are available in two standard sizes, small 6mm and medium 12mm. They are User Friendly & Ready-To-Use: no mixing, nothing to add, just uncoil, cut to length, pack and heat.

CRACKSTIX are flexible & can be stretched & shaped to custom fit the repair. The rubberized compound melts/liquefies instantly & cures quickly. The self levelling sealant goes inside the crack.. not over the crack.. less waste, no tracking or unsightly residue. The multi-use formula can be used on asphalt & concrete pavements and is available in black and grey.

WHY HOT, DIRECT HEAT PROCESS?

In the past, most contractors have had no choice but to use cold pour or caulking type fillers. Cold applied products fill from the bottom up and do not permanently bond/seal to the crack sidewalls.

CRACKSTIX form a permanent bond to the sidewalls of the crack or joint and provides a (liquid rubber) 100% water tight seal. This seal will remain flexible & intact through the winter and summer expansion/contraction cycles.

3 EASY STEPS ...

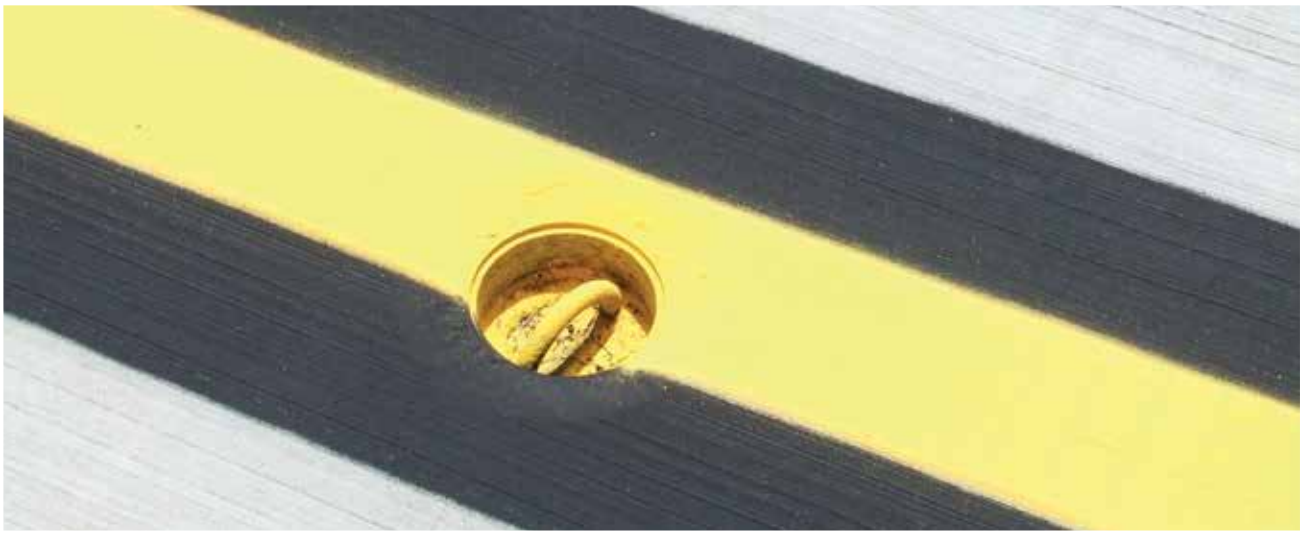
CLEAN IT… Take a screwdriver & scratch out all debris from inside the crack, then take a whisk broom & sweep it clean. Crack must be dry.

PACK IT… uncoil & cut the appropriate size & shape/pack in to crack with fingertip pressure. Using the screwdriver, press the stix into crack approximately 1.5mm to 3mm below actual pavement surface level. To achieve a neat overall appearance, do not overfill crack.
The material seals In It… Not On It.

MELT IT… take propane torch and light it. Adjust bright blue part of flame to 300mm long. Holding the flame 25mm – 40mm from stix, move the flame from side to side in a slow & even motion, heating no more than 300mm at a time (melt stick until liquid).

LINE MARKING

Providing guidance and information to drivers and pedestrians.



WATERBORNE PAINT

Colas specialises in the application of waterborne paint on all surfaces from asphalt and concrete on roads to airport runways.

THERMOPLASTIC

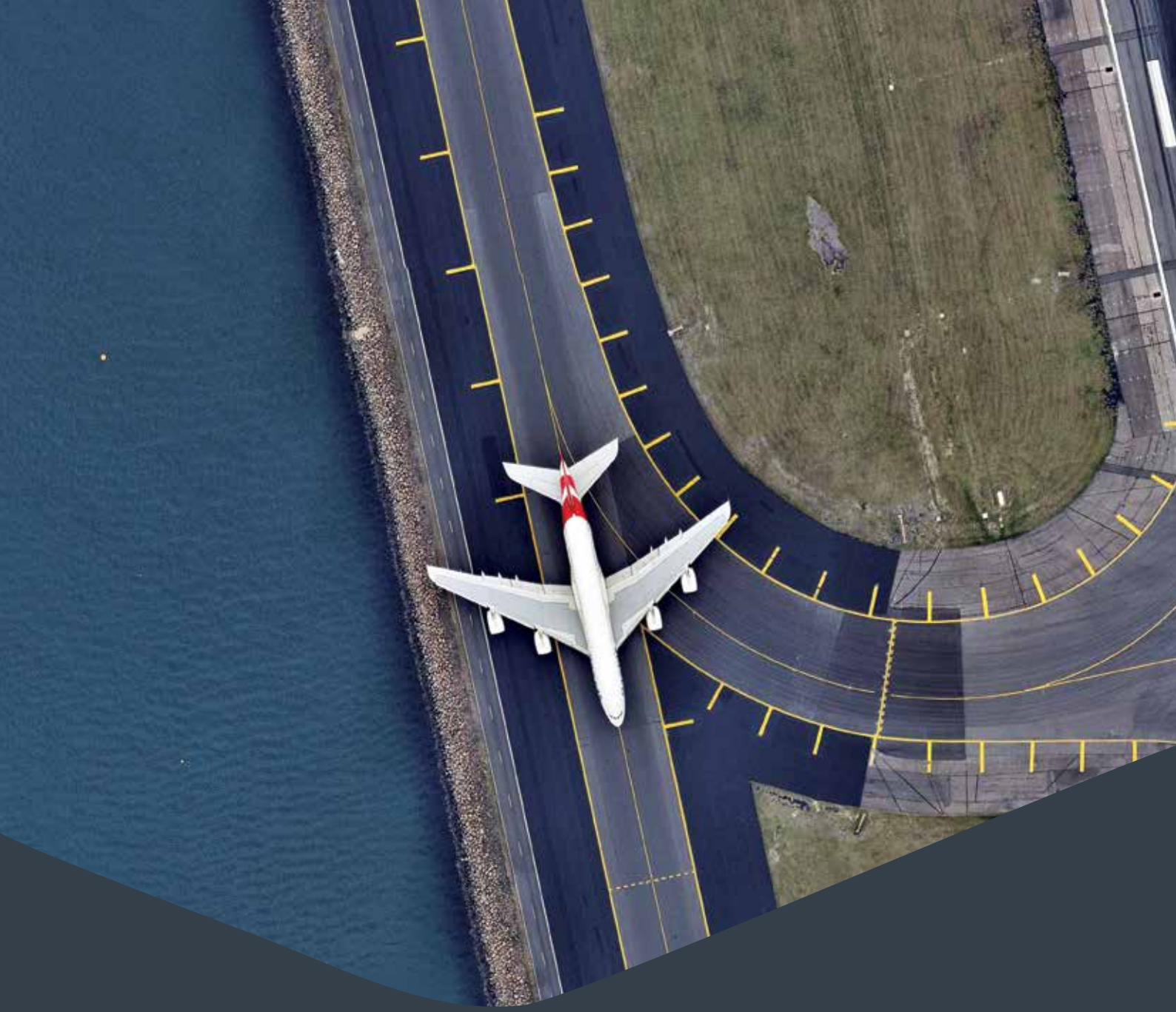
Thermoplastic is used in high wear and high traffic areas including stop lines, barrier lines, arrows, crossings and text. These can all be applied in pre-formed thermoplastic, hand screeded or via specialist equipment.

COLOURED SURFACING

Available in a wide range of colours, both paint and cold applied plastics can be used for delineation of bus, bicycle and pedestrian areas. The addition of fine aggregate can provide added skid resistance.

APPLICATIONS

- Airports
- Intersections
- Car Parks
- Temporary Construction Zones
- Warehouses



COLAS

SOLUTIONS

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