



**PLANT-MIXED FOAM
BITUMEN (PMFB)**



**INNOVATIVE
SUSTAINABLE
PAVEMENT
SOLUTION
SPECIALISTS**



EXCELLENCE FROM THE GROUND UP

Hiway Group has been delivering innovative ground improvement solutions since 1986.

Our reputation for quality performance has been built upon our drive and commitment to Zero Harm, innovation and exceeding our customers' expectations.

It is our commitment to innovation and environmental sustainability that has seen us introduce cutting edge technologies into Australia and develop our own advanced methodologies and stabilising products.

With a proven track record of ensuring high quality, lasting outcomes – even in challenging conditions – our in-house design and contracting teams are industry experts.

Hiway Stabilizers and SAT Civil are Accredited Contractors under the AustStab ARRB accreditation scheme. This independent accreditation assures our clients that our processes and practices meet industry best practice standards.



Hiway Stabilizers provides specialist pavement construction services and advanced stabilisation solutions. Our proven solutions increase strength and durability, and conserve diminishing resources.



SAT Civil delivers uncompromising road maintenance and construction services. Our innovation has introduced a number of construction methods in, HIPAR (Hot In Place Asphalt Recycling) and accurate dustless applications.



Hiway Geotechnical uses world-leading technologies to meet a range of complex geotechnical and foundation requirements for ground improvement and slip/slope reinforcement.



Hiway Environmental's expert team provides cost effective, site-specific solutions for the remediation of contaminated sites and other environmental challenges, including treatment and processing of unsuitable materials.



DESIGN & PROJECT MANAGEMENT SERVICES

The Hiway Group is the only specialist stabilizing contractor in Australia to provide extensive in-house design services.

From concept design to delivery, our in-house team provides a 'one-stop-shop' for design of roading, foamed bitumen, stabilising, asphaltic concrete, rehabilitation and overlay pavement solutions.

We offer a range of consultancy services, from pavement investigation and subgrade analysis, to bitumen 'foamability' testing and foamed bitumen mix design.

Our track record covers a variety of pavement types, from heavy duty pavements for port and airport applications to high level structural and modified highway pavements.

PLANT-MIXED FOAM BITUMEN (PMFB)

Hiway Stabilizers are passionate about producing a high-quality product, to service your various road network needs. Plant-mixed foam bitumen is produced by foaming C170 Bitumen at 180-190°C and combining this with road based hydrated lime and compaction water. The bitumen expands to greater than 10 times its original volume and coats the fine road base and hydrated lime particles.

We are pioneering the use of plant-mixed foam bitumen to be manufactured at higher quantities. The plant mix process provides a high level of control around foam bitumen materials manufacture. The outcome is a cost-effective solution for the construction, rehabilitation and maintenance of new or existing pavements.

Plant-mixed foam bitumen stabilised base provides a structurally sound pavement that has proven to be resilient particularly in areas of regular flooding and inundation.

PLANT-MIXED FOAM BITUMEN (PMFB)

Hiway Stabilizers Australia (HSA) produces PMFB to all Australian Standards and specifications.

HSA are pioneering and researching the use of PMFB in a stockpile that can be utilised for a period up to 28 days or longer. This approach offers a better value proposition for councils and shires that require varying tonnages throughout the month. HSA are working with regulators to ensure compliance to Australian Standards for stockpile applications.

In recent years plant-mixed foamed bitumen has been successfully used for both new construction with new quarry materials and for rehabilitation projects using existing pavement materials which are sometimes blended with new materials.

Hiway Stabilizers have substantial experience with an in house pavement design capability, who will work with you to optimise the pavement layers and approach to suit your budget and pavement performance requirements.



APPLICATIONS

- ▶ New pavement construction
- ▶ Rehabilitation of existing pavements
- ▶ Production of maintenance patching materials
- ▶ Stockpiling application, for extended working times.

BENEFITS

- ▶ More cost effective than full depth asphalt
- ▶ Similar strength to asphalt
- ▶ Resilient pavement material less prone to flood impacts
- ▶ Longer working time relative to comparable products
- ▶ Strong, durable and flexible pavement layer

The foamed bitumen materials use less bitumen than a full depth asphalt but deliver similar strength and create a resilient base course pavement layer.



FOAM BITUMEN MIX DESIGN

Hiway Stabilizers has substantial pavement and foamed bitumen design experience with a technical design team and our laboratory partners. Our aim is to achieve the most effective design that meets the design criteria yet uses the optimum quantity of additives.



PLANT-MIXED FOAM BITUMEN PROCESS

The materials to be bound (MTBB) are loaded continuously into the manufacturing plant at a rate to meet the production volumes. Attached to the plant are storage for bitumen and the secondary stabilisation agent. These are metered by the plant controls into the pugmill mixing chamber at the rate required to meet the mix design parameters.

The manufactured material is conveyed directly into trucks for transport to site where they are placed either by paving machine or by grader and then compacted using conventional asphalt compaction equipment. Alternatively the manufactured material may be stockpiled for later use.

PLACING & COMPACTION

The plant-mixed foam bitumen stabilised materials are placed by either paving machine or grader. It is desirable to place the materials after manufacture and with processes that minimises any segregation of the mix.

The placed materials are then compacted with conventional asphalt compaction equipment to the specified density.

The completed layer should be cured by keeping the surface moist until the next layer or a seal coat is applied.

New stabilized pavement materials are manufactured with minimal additives required to achieve the design criteria - making this a sustainable and efficient process



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