UNIMINE
يونيماين

ASPHALT CATALOG

POWERED BY

UNIMAC
يونيماك

PORTFOLIO

UNIMAC is renowned for its asphalting knowledge and expertise, that it has gained through over 45 years of experience in the Kingdom.

Designed by UNIMAC and produced by UNIMINE, you will find in this brochure the various mix designs, each catering to different project requirements.

ASPHALT PLANTS

UNIMINE offers exceptional asphalt, known for its reliability and long-lasting performance. The asphalt materials have been meticulously developed and received official approval from various government and private sector organizations, including the Ministry of Transportation, MOMRA, and the RCRC.

Furthermore, the production plants undergo regular calibration, overseen by experienced operators who guarantee the creation of a flawlessly blended product.

UNIMINE operates multiple asphalt production facilities, boasting a combined total of six plants, as of December 2023 with two additional asphalt plants procured and being delivered in 2024. Our daily asphalt production is an impressive 7,500 tons capacity and increasing to 11,500 tons per day.

Our production capabilities extend beyond traditional black asphalt, as we also specialize in the production of vibrant colored asphalt. Produced by UNIMINE, UNIMAC has successfully applied a certified rubber asphalt mix design, which is currently being utilized in various locations across the city of Riyadh.

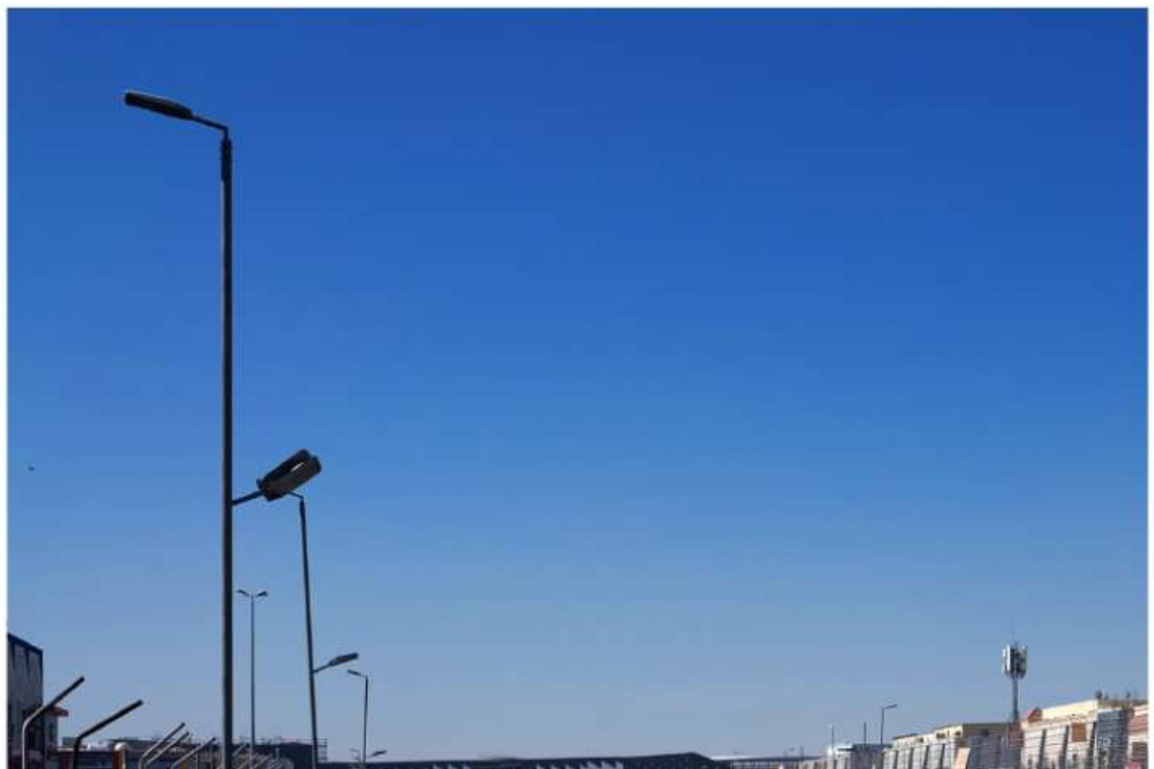
LABORATORIES

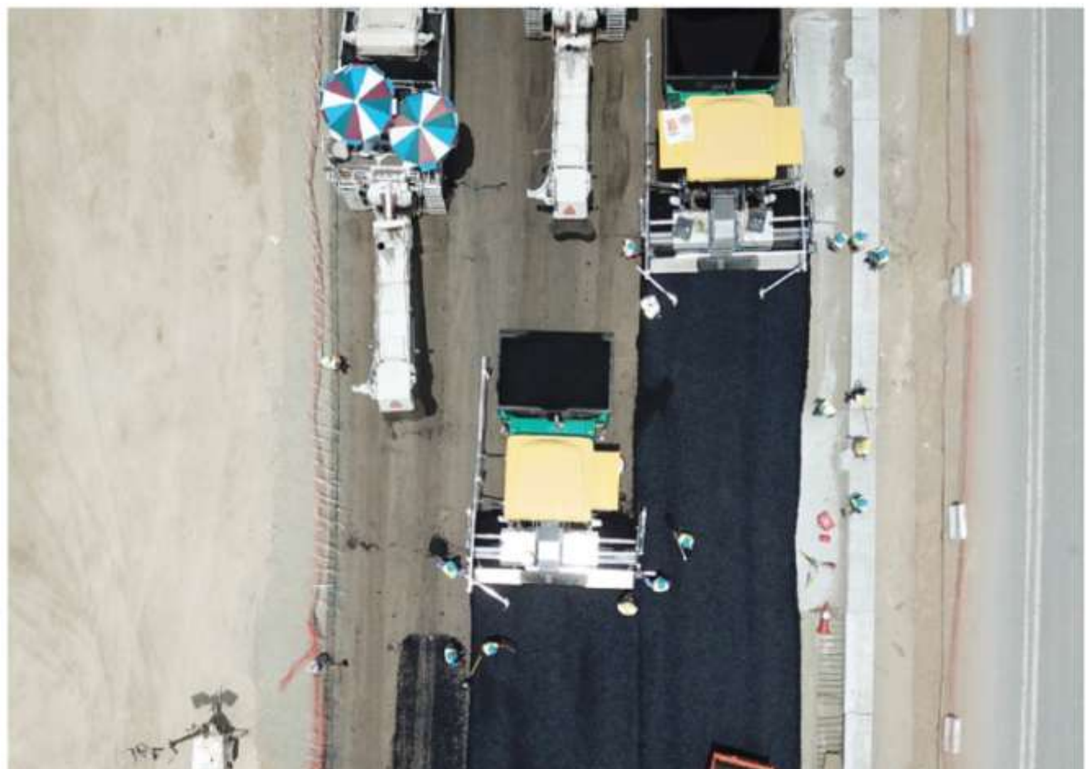
Setting us apart from our competitors, UNIMAC boasts two primary laboratories and additional satellite labs located on various project sites. These facilities are dedicated to rigorously testing the quality of materials utilized and distributed. Our extensive experience in quality control has been instrumental in establishing our strong and reliable reputation in the market. A considerable amount of resources is dedicated to our in-house quality control department, to ensure standardization and compliance with international and local standards.

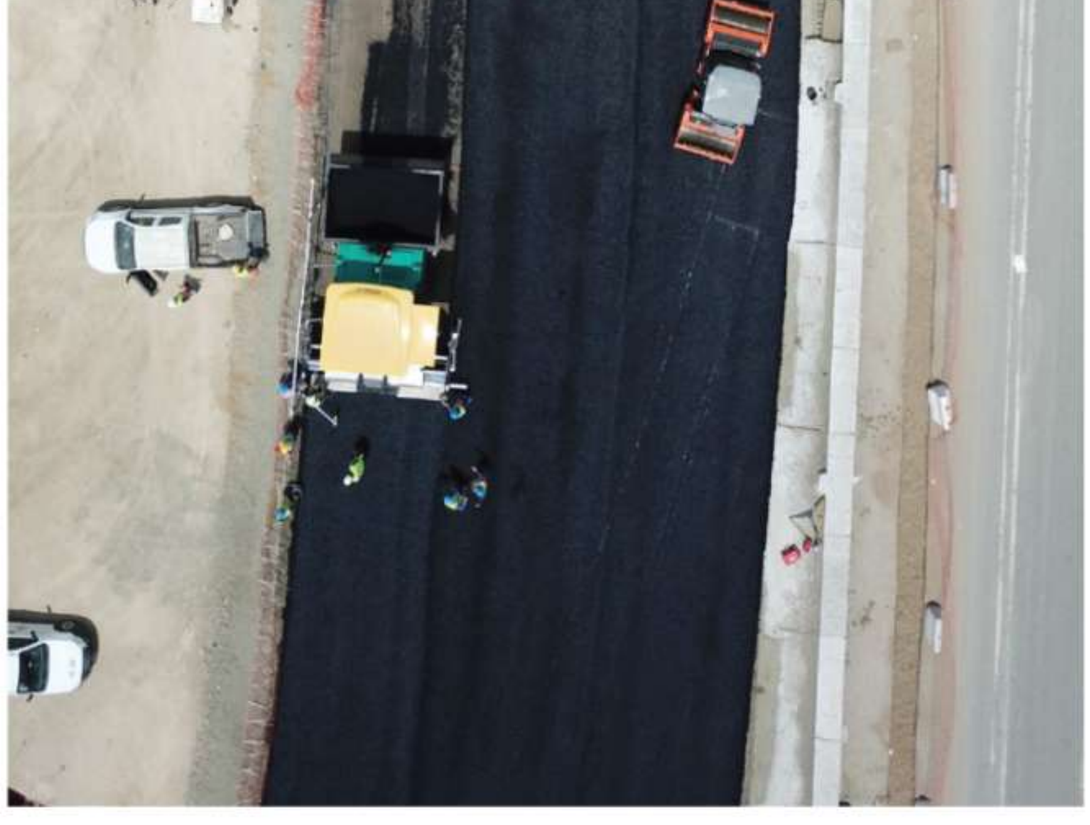
We have a fully equipped and staffed material laboratory located in our quarries allowing us to ensure that the aggregates used in our projects meet the required specifications.

UNIMAC in collaboration with UNIMINE has successfully developed a wide range of Mix Designs, including SuperPave, Marshall, Polymer Modified, and “designed” for motorsports and airfields.


HAMM
HAMM







GUIDE

This catalog provides a comprehensive overview of the various mix designs created by UNIMAC.

It includes detailed information on their applications, durability, material characteristics, and pricing options.

INDUSTRY SECTOR USE

MOTORWAYS

INDUSTRIAL

MOTORSPORTS

AIRPORT

RESIDENTIAL

RECREATIONAL

RELATIVE PRICE

ECONOMICAL

AVERAGE

PREMIUM

GRIP™

GOLDEN

Features Include:

1. SBS PG 88-10 Modified Bitumen
2. MSCR J_nr-3.2 @ 70C ≤ 0.10 kPa^-1.
3. Provides an even surface with high grip,smoothness, and durability, while withstanding extreme impacts and high-temperature deformation.

An asphalt mix design for a FIA homologated track capable of hosting Formula 1 races. These facilities necessitate precise attributes to guarantee peak performance and safety for high-speed racing. It is engineered to withstand the extreme stresses of professional racing, ensuring exceptional durability. The product has the ability to withstand the harsh conditions encountered in high-performance racing settings, including abrasion, fatigue, and rapid temperature fluctuations.

In order to provide a comfortable and reliable racing experience, the asphalt mix design is focused on creating a track surface that is consistently smooth. By implementing certain measures, the race cars are able to minimize vibrations, prevent driver fatigue, and ensure stable trajectories even at high speeds.

Here is an overview of the main elements:

1. The mix design incorporates meticulously chosen aggregates, offering a high level of stability, durability, and sufficient friction for the track surface.

2. An asphalt binder of superior quality to improve strength, flexibility, and durability in the face of extreme temperatures and heavy loads, providing excellent stability and effectively preventing any cracking or rutting that may occur during intense racing conditions.

3. A well-balanced ratio of coarse and fine aggregates to ensure optinal compaction and a smooth surface, and to prevent degradation.

4. Exceptional level of grip and control to enhance the racing experience and reduce the chances of accidents.

5. Additives to regulate the surface texture of the track, enhancing tire performance by maximizing grip.

TRACKTECH™

Features Include:

1. SBS PG76-10 Modified Bitumen.
2. Performance such as reduction of reflectioncracking, improve the durability of the surface.
3. Suitable for high-speed traffic.
4. The Formula E track has been constructed using a specially designed high-speed wearing coursematerial.
5. This material includes Super Pave SBS PolymerAsphalt Mix and 14mm maximum size aggregates.

Designing an asphalt mix for a Formula-E track involves taking into account the specific needs of electric car racing:

1. The asphalt binder utilized in the mix design is a high-quality polymer-modified bitumen, which offers improved flexibility, durability, and resistance to temperature fluctuations. It enhances the adhesion between aggregates, resulting in a longer life span for the track.

2. The gradation of the aggregate is meticulously chosen to ensure a seamless and uniform surface. Finer materials, like sand, are utilized to fill in any empty spaces, while larger materials offer support and solidity. The mixdesign guarantees a harmonious blend of grip and slip resistance, elevating the driving experience.

3. The mixdesign focuses on enhancing skid resistance to optimize braking performance and ensure safer cornering. Our product includes specially formulated additives that improve traction and minimize the chances of accidents.

4. Given the urban settings of Formula-E races, noise reduction becomes a crucial consideration. The mix design utilizes specialized design features to reduce noise levels and ensure adherence to noise regulations.

5. In order to uphold the high standards of Formula-E racing, the mix design also prioritizes the use of environmentally friendly materials, such as recycled aggregates or additives that contribute to the reduction of carbon emissions.

In general, an asphalt mix design for a Formula-E track strives to create a racing surface that is smooth, long-lasting, quiet, and environmentally friendly, while also improving safety, performance, and the overall racing experience.

SILENTTECH™

Features Include:

1. AR Gap Graded environmental benefits and enhanced performance.
2. Performance such as reduction of reflection cracking, improve the durability of surface course, and reduction of the noise (between 40%-80% existing based on experimental experiences) that arises due to interactions between tires and road surfaces (tire/road) and play as a permeable layer for drainage.

This is an Asphalt Rubber Gap-Graded (ARGG) mix that utilizes aggregate of specific size and as asphalt rubber binder with a significant amount of ground tire rubber, no less than 15%.

The integration of additional additives into the asphalt binder, results in improved pavement performance and sustainability.

Presented below is an overview of the essential components:

1. The aggregates utilized in the mix design area blend of coarse and fine aggregates.

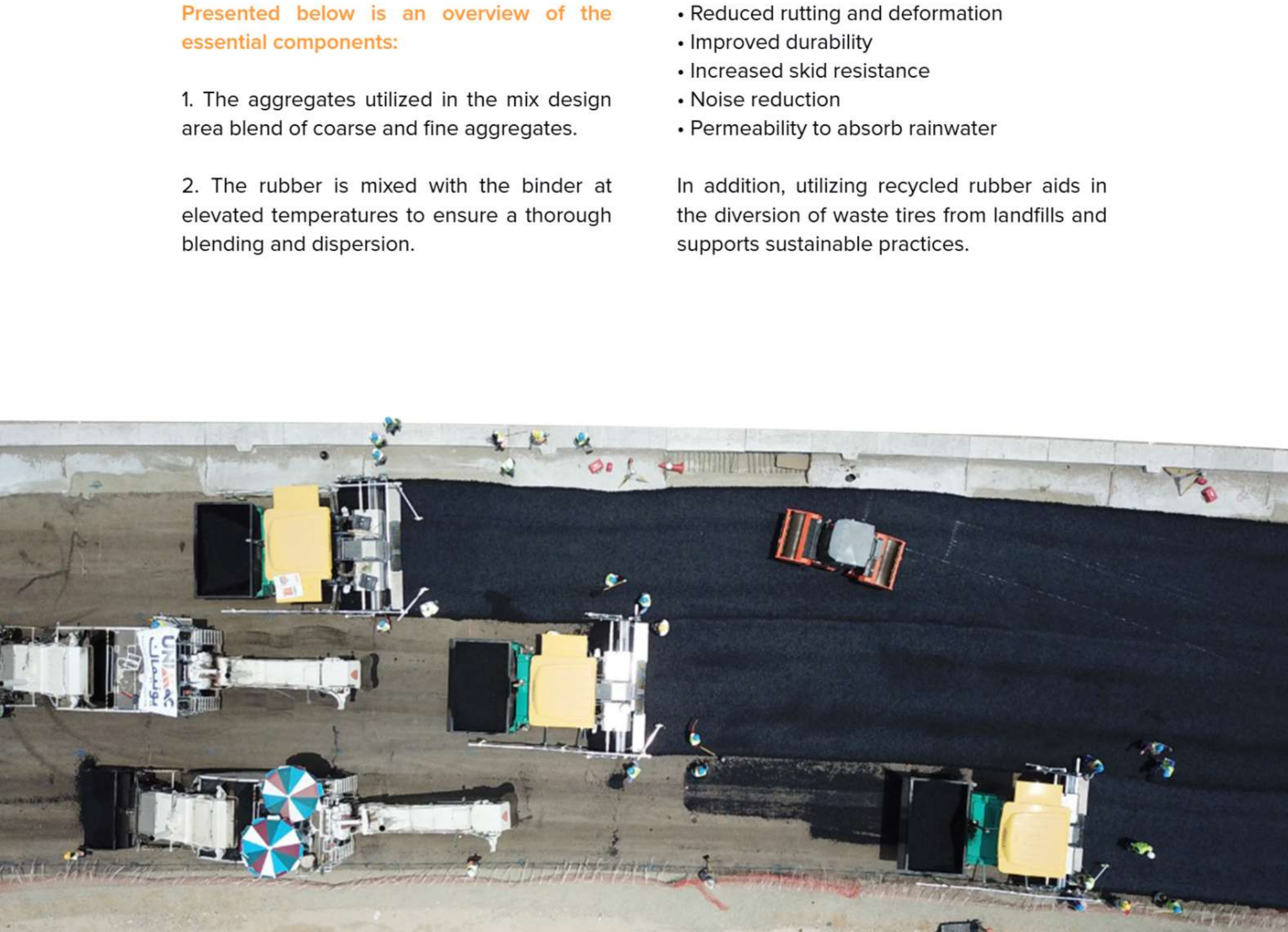
2. The rubber is mixed with the binder at elevated temperatures to ensure a thorough blending and dispersion.

3. The mix proportions have been determined through rigorous laboratory testing to achieve optimal durability, flexibility, and resistance to aging.

4. Rubber asphalt mix designs provide numerous advantages,
such as:

- Enhanced resistance to cracking
- Reduced rutting and deformation
- Improved durability
- Increased skid resistance
- Noise reduction
- Permeability to absorb rainwater

In addition, utilizing recycled rubber aids in the diversion of waste tires from landfills and supports sustainable practices.



CRUMBRUB S.PAVE™

Features Include:

1. Crumb Rubber PG 76-10 Modified Bitumen.
2. MOT / AMANA Super Pave Crumb Rubber Asphalt Mix approved Base Course 1-1/2 inches and Wearing Course 3/4 inches maximum size.

This mix utilizes aggregates of specific sizes and an asphalt-rubber binder with a significant amount of ground tire rubber.

Our Superpave Crumb Rubber Asphalt Mix is an innovative solution combining top-quality asphalt with recycled rubber, resulting in a pavement material that is both environmentally friendly and durable.

Its main features include:

1. Environmentally Friendly Solution, utilizing high-quality crumb rubber sourced from recycled tires, demonstrating a commitment to sustainability and reducing environmental impact.

2. Exceptional performance in diverse conditions, showcasing flexibility and durability.

3. Implements Superpave technology for precise mix design, guaranteeing excellent binder-aggregate interaction and exceptional durability. This ensures the durability and reliability of pavements by effectively managing rut resistance, fatigue resistance,and thermal cracking performance.

4. Minimizes road noise to create a peaceful and enjoyable atmosphere for nearby communities. Perfect for urban areas, residential streets, and places where noise pollution is a significant issue.

5. Increases skid resistance, promoting safety for both drivers and pedestrians.

6. Demonstrates exceptional performance in various temperature conditions.

ECO TM PAVE DURA T

Features Include:

1. SBS Polymer Asphalt Mix approved Wearing Course Material.
2. SBS Polymer Modified Bitumen PG 76-10 is the minimum. Higher polymer content can by utilized (ie 88-10).
3. Long term durability and rut resistance.
4. Improved smoothness and increase resistance to scuffing.
5. Improved resistance to low temperature cracking and fatigues cracking.

Our Superpave SBS Polymer Asphalt Mix is an innovative solution, carefully designed to set new benchmarks in terms of strength, durability, and resilience within the industry.

Main Features:

1. Utilizes the strength of Styrene Butadiene Styrene (SBS) polymer modification to enhance asphalt binder performance. This delivers superior elasticity, durability, and resistance to cracking and rutting even under the most demanding traffic conditions. The SBS Polymer Modified Bitumen can range between PG 76-10 and PG 88-10, depending on the project requirements including traffic loads.

2. Unmatched flexibility to provide adaptability to temperature changes, guaranteeing long-lasting structural integrity. Perfect for areas with challenging climate conditions, ensuring consistent and dependable performance throughout the year.

3. Utilizing Superpave technology, our mixdesign is optimized to achieve a precise aggregate structure and enhance durability.

4. Enhances the durability of pavements, ensuring they withstand the test of time and remain resilient against oxidative aging.

5. Enhances skid resistance, making roadways safer and reducing the likelihood of accidents in various weather conditions. Perfect for situations where safety is of utmost importance, like highways and areas with heavy traffic.

GRIP™ RUNWAY

Features Include:

1. Applicable for heavy-duty airfield use.
2. High level of a rut and raveling resistance.
3. Available as a standard penetration grade binderor polymer modified for more heavy-duty use

The asphalt mix design integrates Styrene Butadiene Styrene (SBS) polymer modification to enhance asphalt binder performance, with premium sourced aggregates for high performance tarmac.

Presented below is an overview of the essential components:

1. The aggregates utilized in the mix design area blend of coarse and fine aggregates.

2. The SBS polymer is mixed with the binder at elevated temperatures to ensure a thorough blending and dispersion.

3. The mix proportions have been determined through rigorous laboratory testing to achieve optimal durability, flexibility, and resistance to aging.

4. The source of bitumen is specified to ensure utmost enhancement of durability, considering the heavy-duty requirements of the runway.

5. The design enhances skid resistance and grip to improve the landing touch down and decrease the time required for the plane to come to a full stop.

AIRFIELDTECH™

Features Include:

1. Applicable for heavy-duty airfield use; both taxiways and runways.
2. High level of a rut and raveling resistance.
3. Available as a standard penetration grade binderor polymer modified for more heavy-duty use.

Designed with utmost precision, our taxiway solution establishes a cutting-edge benchmark in terms of performance, safety, and environmental consciousness. Our asphalt mix for international airport taxiways is carefully designed to make sure that it works well, is safe, and lasts a long time. This mix was carefully made to meet the needs of current aviation and is perfectly balanced to provide the best support.

1. Superior aggregates, meticulously chosen for their durability and reliability. Our gradation was carefully thought out to give you great load-bearing ability and great resistance to wear.

2. It incorporates a polymer-modified asphalt binder, improving resistance against rutting, fatigue, and environmental stresses, and assures a strong, flexible pavement system capable of supporting heavy aircraft traffic.

3. The mix is engineered for optimal particle packing, interlock, and efficiency in the pavement.

4. Strict quality control measures, including Marshall Stability and Flow tests, ensure consistent, reliable results that meet the highest global aviation standards.

5. By managing air voids and Voids in Mineral Aggregate (VMA), the mix is made more resistant to water damage, guaranteeing toughness and longevity.

6. The source of bitumen is specified to ensure utmost enhancement of durability, considering the heavy-duty requirements of the taxiway.

VIBRANTCOLOR™

Features Include:

1. A mixture of aggregates, clear binder, and color pigment.
2. Using high-quality pigments or additives in the asphalt mixture is essential for achieving the desired color and aesthetic effect.

Our advanced Colored Asphalt Solutions completely transform the traditional concept of asphalt, opening up a world of endless possibilities. Elevate your projects with a wide range of vibrant colors, while enjoying the outstanding performance and reliability of our high-quality asphalt.

Here are the key features:

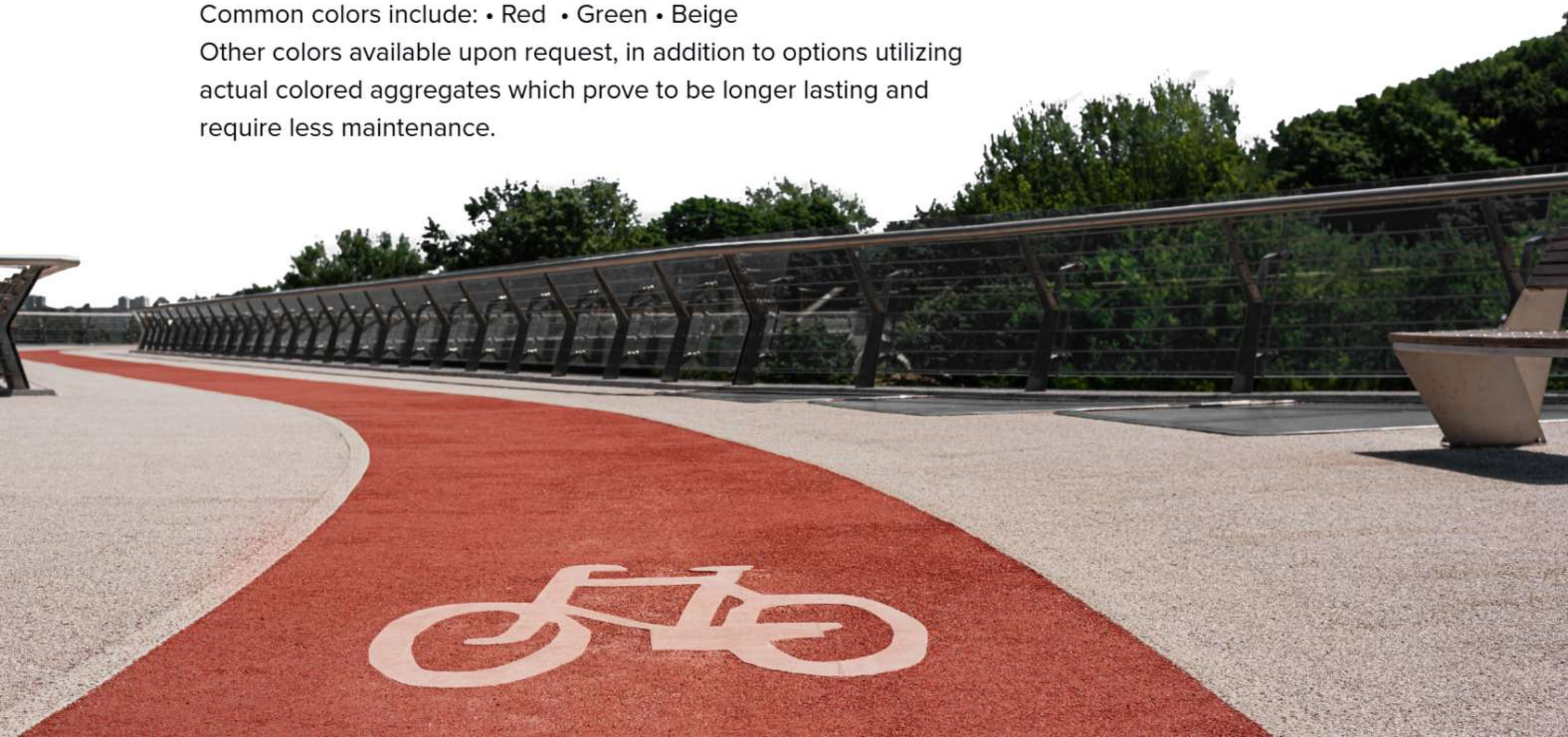
1. Utilizing a diverse array of colors in your pavement, creating visually appealing and inviting spaces. Designing vibrant roadways and paths that are easily noticeable by road users offers clear guidance and is perfect for cycle paths or bus lanes, or as a means of indicating a change in speed limit to drivers.

2. Advantage is taken of state-of-the-art coloring technologies that effortlessly integrate with the asphalt mixture, ensuring durable outcomes.

3. With the incorporation of UV-stable coloring additives, the colors will maintain their vibrancy even when exposed to sunlight for long durations, ensuring resistance to fading.

4. Utilize colored asphalt to enhance safety measures by clearly delineating pedestrian pathways, bike lanes, or designated zones.
The colored asphalt mix produces a pavement surface that is visually attractive and distinctive, while still meeting the performance standards of conventional asphalt. It is known for its exceptional strength, durability, and skid resistance. Colored asphalt provides numerous opportunities to elevate infrastructure projects, whether it involves captivating designs, clearly defining specific areas, or seamlessly harmonizing with the surrounding environment.

Common colors include: • Red • Green • Beige
Other colors available upon request, in addition to options utilizing actual colored aggregates which prove to be longer lasting and require less maintenance.



CITYPAVE™

Features Include:

1. Base Course is defined as a layer or layers of asphaltic materials.
2. Base Course placed on a paved or unpaved surface in preparation for placing a wearing course.
3. Wearing Course is defined as a layer to serve as a traffic surface.
4. The completed asphaltic wearing course shall be compacted as specified, smooth and free from ruts.

Opt for our BC-B & WC-A Marshall Mix Designs to ensure top-notch quality for your inner-cityroads. This BC-B & WC-A mix design is the most commonly used design.

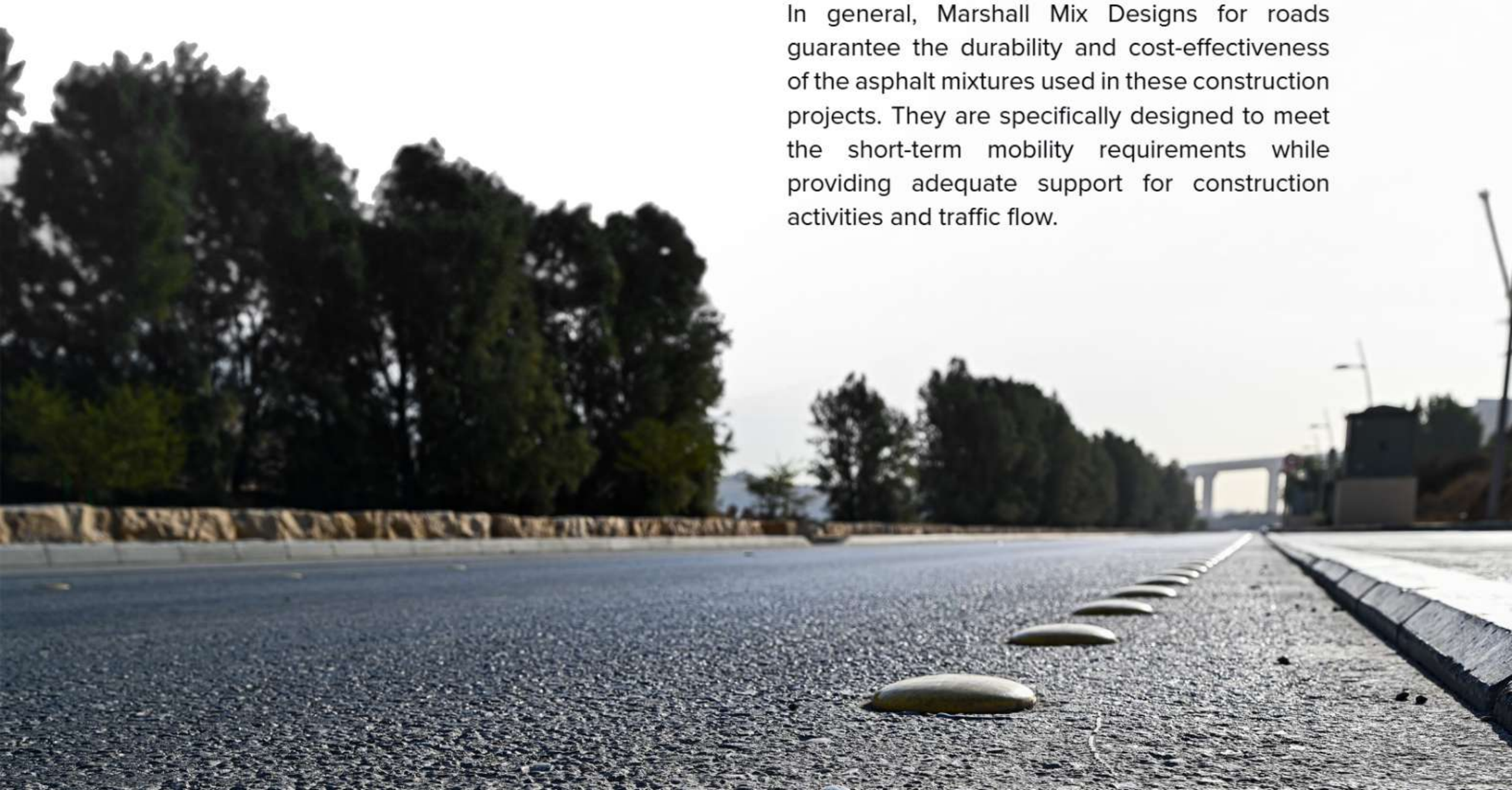
With industry approvals and a strong dedication to quality, our mixes provide a dependable solution for quickly and affordably constructing road networks.

The AMANA Asphalt Mix, approved for BC-B & WC-A TEMPO-MARSHALL road applications, is engineered for optimal performance in short-term road construction projects. These designs are tailored to meet the requirements of roads, commonly utilized for construction access, detours, or other traffic routes.

For temporary roads, Marshall Mix Designs emphasize stability, flow, and density as key factors. The stability of the asphalt mixture is determined by its resistance to deformation under the weight of traffic, while the flow of the mixture is a measure of how easily it can be compacted during construction. Ensuring the right density is essential for the durability and longevity of the roads.

Choosing the right aggregate sources and proportions is a crucial part of creating Marshall Mix Designs for temporary roads. In order to achieve the desired gradation and performance characteristics, it is common practice to utilize a mixture of coarse and fine aggregates. The binder type and content are selected based on the project requirements and expected traffic loads.

In general, Marshall Mix Designs for roads guarantee the durability and cost-effectiveness of the asphalt mixtures used in these construction projects. They are specifically designed to meet the short-term mobility requirements while providing adequate support for construction activities and traffic flow.



SR

Features Include:

1. Wearing Course is defined as a layer to serve as a traffic surface.
2. The completed asphaltic wearing course shall be compacted as specified, smooth and free from rutting.

AMANA Asphalt Mix approved WC-A Marshall Mix Designs for palaces. This Marshall mix design is specifically tailored to meet the specific needs of a prestigious residential area with restricted entry. It ensures that the asphalt mixture used is of the highest quality and professionalism.
The difference between Silk-Pave and City-Pave are the bitumen-aggregate blend.
This design is carefully crafted to consider the aesthetic, environmental, and performance requirements of the community. The mix design utilizes meticulously chosen aggregates, binder, and additives to guarantee a long-lasting and aesthetically pleasing road surface that enhances the sophisticated environment and delivers a seamless and noiseless driving experience for residents.

The design takes into account various factors, including reduced noise levels, enhanced durability to withstand heavy traffic and inclement weather, and minimal maintenance requirements. These considerations ensure that the closed community maintains its premium standards.

• Very smooth surface, very fine aggregate & for low-speed traffic areas

• Engineered for superior stability, load-bearing capacity, and aesthetic appeal, creating an enchanting foundation for palace driveways.

• Complies with TypeA (WC-A) specifications, emphasizing effective drainage and erosion control.

• Meticulously designed to withstand the regal traffic of palace entrances while maintaining an exquisite appearance.

• Utilizes premium aggregates to achieve optimal gradation, ensuring a smooth and visually appealing surface.

• Balances structural integrity with refined aesthetics, offering the perfect blend of strength and beauty.

• Undergoes rigorous Marshall mix design testing to guarantee stability, load-bearing capacity, and a luxurious, smooth flow.

METRO PAVE™

Features Include:

1. Base Course is defined as a layer or layers of asphaltic materials placed on a paved or unpaved surface in preparation for placing a wearing course.
2. Wearing Course is defined as a layer to serve as a traffic surface.
3. The completed asphaltic wearing course shall be compacted for a smooth outcome.

This Metro Pave Polymer modified asphalt design is tailored for a metropolitan area, addressing the need for an asphalt mixture that can withstand the demanding conditions and high traffic commonly found in urban environments.

This design prioritizes durability, skid resistance, and long-term performance, crucial for enduring the continuous wear and tear from a large volume of vehicles, including buses, trucks, and cars. In addition, the mix design takes into account various factors such as drainage, noise reduction, and environmental sustainability.

This ensures that the roadway meets the requirements of the metro area, while also prioritizing safety and providing a seamless and dependable travel experience for commuters.

Features include:

• Maintains a harmonious combination of strength and flexibility to effectively handle the demands of frequent stops and starts.

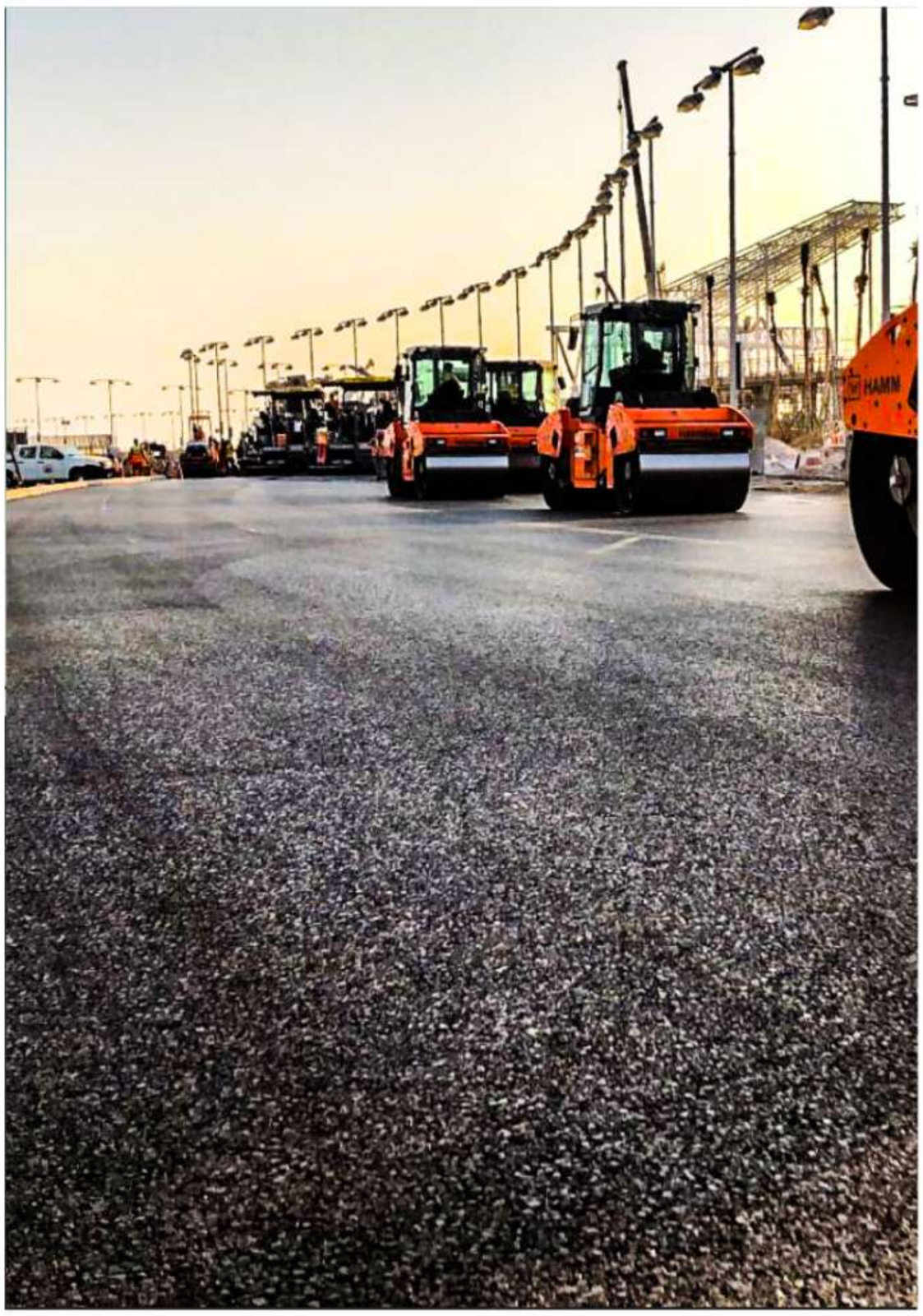
• Emphasizes safety by providing a skid-resistant surface that offers optimal traction for buses and pedestrians, even in challenging weather conditions.

• Enables fast curing to minimize disruption to bus services and traffic flow.

• Customizable Aesthetics - Provides a variety of finishes and color choices to enhance the urban landscape and create an attractive public transit environment.

• Customized to harmonize with the distinctive design elements of the surrounding urban environment.

SR SR




شارع أبي عبيدة
عامر بن الجراح
ABI UBAIDAH AAMIR
IBN AL JARRAH
STREET
شارع اسطنبول
ISTANBUL STREET
شارع أبي عبيدة
عامر بن الجراح
ABI UBAIDAH AAMIR
IBN AL JARRAH
STREET

THANKYOU

ALL ASPHALT TYPES ARE PRODUCED BY

UNIMINE

يونيماين