

duraDUR®



Our Solutions: Eco Road Markings

DURADUR®
Coatings & Reactive Resins

Creative and Functional Road Markings



A Pioneer in Road Markings

About DURADUR®

DURADUR® is the trademark of NANOPINTURAS®. Using binders in the production of durable MMA road markings. A pioneer of MMA road marking coatings.

Long-lasting DURADUR® solutions are available.

DURADUR® team supports its customers and associates worldwide with technical assistance and expertise, as well as with training courses and further service features.

All of this has one goal: **To make safe road markings available in all parts of the world.**

Road Markings: Information, Guidance and Protection for Millions of Road Users, Worldwide.

About MMA based on DURADUR®

MMA resins were originally invented in the 1960s as a high quality alternative to paints and thermoplastics in order to withstand winter service. e.g. Studded tire traffic on the highway system.

Thanks to excellent wear resistance and high form stability even at high traffic load from subzero high temperatures MMA road markings today provide long lasting functionality in all climate zones including cold Alaska to hot Middle East. Reactive resins are used as binders for the production of two-component MMA materials that are chemically cured upon addition of a hardener component to form a duroplastic MMA road marking.

Key features:

- Durability
- Form stable at high temperatures and traffic load
- CO2 reduction due to longer service life
- Any form, any shape, any color

Anti-blackening Zebra Markings Cairo Street, Dubai

Project Objective

Climate and environment pose tough conditions for road markings in the Middle East. The sand, oil and hot temperatures typically cause road markings to blacken quickly.

Therefore, reactive based MMA markings with anti-blackening capabilities were manufactured & applied at a zebra crossing on Cairo Street by Prismo Gulf.

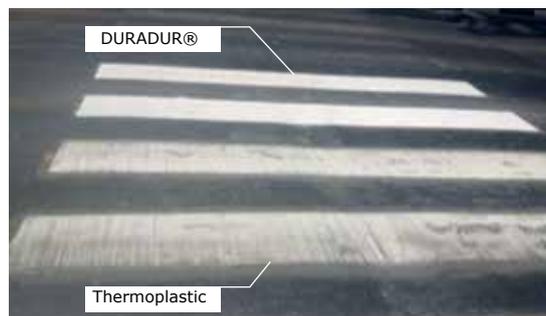
For reasons of comparison, thermoplastic markings were applied right next to it - with impressive results even after a few hours.

Site

Country	United Arab Emirates
Location	Dubai
Road	Cairo Street
Application Date	October 2013

Application

System	Two layer system with anti-blackening
Surface	Existing asphalt
Preparation	Shot-blasting to clean the surface, filling cracks
Equipment	Manually: by roller
Material	Based on MMA anti-blackening



After 11 hours



After 17 days



After 90 days

PERFORMANCE

- MMA based markings with anti-blackening remained white and well visible even after 1 year.
- Thermoplastic markings picked-up dirt after a few hours.

Anti-Blackening Triangular Yellow Humps

Cairo Street, Dubai

Project Objective

Climate and environment pose tough conditions for road markings in the Middle East. The sand, oil and hot temperatures typically cause road markings to degrade quickly.

Therefore, MMA markings with anti-blackening capabilities were manufactured & applied at triangular yellow humps on Cairo Street by Prismo Gulf. For reasons of comparison, thermoplastic markings were applied right next to it - with impressive results even after a few hours.

Site

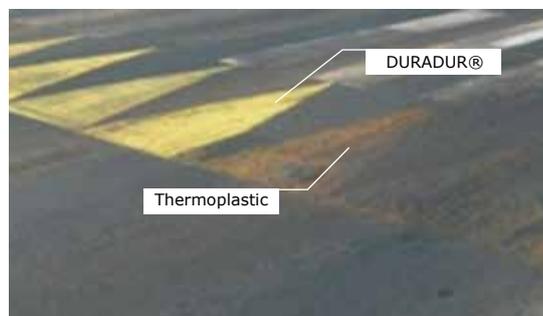
Country	United Arab Emirates
Location	Dubai
Road	Cairo Street
Application Date	April 2014

Application

System	Two layer system with anti-blackening
Surface	Existing asphalt
Preparation	Shot-blasting to clean the surface
Equipment	Manually: drawbox and roller
Material	Based on MMA anti-blackening

PERFORMANCE

- Markings with anti-blackening remained yellower, cleaner and more visible.
- Thermoplastic markings picked-up dirt after a few hours.

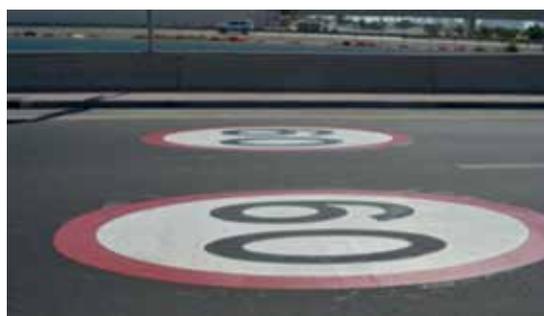


Anti-Blackening Horizontal Speed Limit Sign Saada Bridge, Dubai

Project Objective

Climate and environment pose tough conditions for road markings in the Middle East. The sand, oil and hot temperatures typically cause road markings to blacken quickly.

Therefore, horizontal speed limit signs based on MMA markings with anti-blackening capabilities were manufactured & applied by Prismo Gulf at Saada Bridge.



Site

Country	United Arab Emirates
Location	Dubai
Road	Saada Bridge
Application Date	April 2014



Application

System	Two layer system with anti-blackening
Surface	New asphalt
Preparation	None
Equipment	Manually: by roller
Material	Based on MMA anti-blackening

PERFORMANCE

- Markings with anti blackening feature picked up no dirt, staying colorful and visible providing improved safety to all road users

Form Stable Profile Markings

Sao Paulo, Brazil

Project Objective

The profile marking application was performed on the state highway 284 between the city of Rancharia and the state highway SP425, Sao Paulo.

DOT decided for this application as a measure to reduce the number of accidents due to lane departure.

Profile markings based on Thermoplastic material deformed under high temperature and heavy traffic load within 1 year of application.

Sao Paulo DOT decided to switch from Thermo to MMA due to optimal form stability under such conditions with impressive results.

Site

Country	Brazil
Location	Rancharia City – Sao Paulo
Road	State Highway SP284
Application Date	January 2014

Application

System	Profile Marking
Surface	Asphalt
Type	98:2



Form stable Profile Marking based on MMA



Profile marking based on thermoplastic road marking deformed within 1 year

PERFORMANCE

- MMA provided a long lasting form of the profile structure contributing to improved traffic safety.

Roundabout Austria

Project Objective

The roundabout is located at an entrance to motorway S31 with a DTV of 15000/24h. The authorities were interested in testing the durability and SRT values of an inner circle area marking with MMA.

Site

Country	Austria
Location	Markt St. Martin
Road	Federal Road B 50
Application Date	July 2007

Application

System	Two layer area marking
Surface	New asphalt (4 weeks)
Type	98:2
Equipment	Manual application
Aggregate	1-3mm
Thickness	4-5mm
1Marking	1,75 m width, 80 m length, 140 sqm



PERFORMANCE

- Certificate October 2012 - Research Center for Surface Engineering: "For all the measurement points of the road markings, the minimum skid resistance values of 45 PTV (SRT) units were exceeded, thus satisfying the requirements of the standards"

Parking Area Switzerland

Project Objective

The railway street in the city of Horgen, Switzerland became a colored and pleasant meeting zone which, above all, invites drivers to reduce speed and watch out for pedestrians.

Antiskid area markings in a 6,000 m² areas were harmonically laid in 5 different colours.

Contributing to safety whilst being creative.



Site

Country	Switzerland
Location	Horgen
Application Date	2009

Application

System	Anti-skid area marking
Surface	6,000 sqm
Type	5 colors
Material	MMA

Area Marking on Concrete Germany

Project Objective

The red roundabout on a high trafficked crossing in Bad Vilbel had caused the city a headache for a long time.

Since large buses and trucks which cannot circumvent the radius of the roundabout, regularly drive right across the area marking, it had been impossible for the city to find a road marking material that could withstand the traffic exposure on the concrete surface.

This is why, in 2010, the city of Bad Vilbel opted for MMA, which is known for its long durability and adhesion to concrete substrates.

The result was increased safety. After three years, the red area marking based on MMA is still very well visible and fulfills all requirements regarding grip.



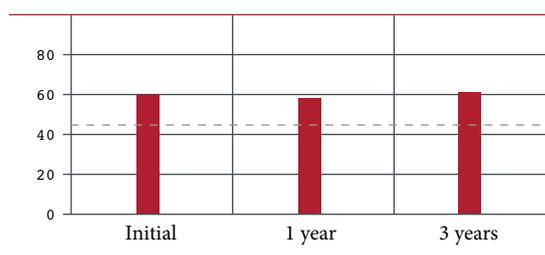
Site

Country	Germany
Location	Bad Vilbel
Application Date	October 2010

Application

System	Two layer area marking: Base and top coat
Surface	Concrete
Type	98:2
Preparation	Primer
Equipment	Manual application
Material	MMA
Aggregate	Bauxite 1-3mm
Area	10 m diameter; 80 m ²
Volume	3,6 kg/m ²

Skid Resistance (SRT)



Minimum requirements according to DIN-EN 1436 SRT ≥ 45

PERFORMANCE

- High durability of, where other markings failed.
- High traffic density: DTV 16,600 cars / 24h with extreme sheer forces.
- Grip after 3 years still well above 45 SRT.
- Excellent colour stability.

Profile Rumble Strip Markings Germany

Project Objective

A particular intersection near the German-Polish border, crossing Sacro in the Spree-Neiße district, has worried the local transport authority for years due to its numerous accidents.

To provide relief at this accident prone intersection, novel MMA rumble strips were applied to improve the safety at this accident blackspot.



Site

Country	Germany
Location	German-Polish border (in Forst City)
Application Date	January 2012



Application

System	Extrude
Colour	Bright yellow
Material	MMA
Marking	1mm thickness



PERFORMANCE

- The 1cm thick, bright yellow marking strips were installed perpendicular to the road, getting the drivers' attention through color contrast, vibrations and noise.
- In 2010 there were 8 accidents, mostly caused by speeding, with some of them involving casualties.
- Since the application of the rumble strips, no accidents have occurred.



HIGHEST STANDARDS OF QUALITY



**ISO 9001:2008 CERTIFIED
ISO 14001:2009 CERTIFIED**

DURADUR® flooring systems Comply with food law regulations and provide the ideal basis for cleanliness and hygiene in meat processing companies, key advantages include:

-
- Easy to clean and resistant to commonly used cleaning agents.
 - Limited permeability of bacteria and mold due to seamless application.
 - Resistant to heat (hot water) and cold (storage rooms).
 - Slip- resistant surfaces for workplace safety combined with individualized design options.
 - Fast curing even at low temperatures to minimize downtimes.

Our DURADUR® products offer solvent free, cold-curing MMA resins for the formulation of high-quality flooring systems. These different systems can be applied to a wide variety of surfaces, e.g. concrete, cement, screed, steel or tiles.

Not only are they durable and resistant to mechanical, thermal and chemical stresses, but they can be fully subjected to loads just 2 hours after installation, avoiding prolonged work stoppages and downtimes. DURADUR® systems cure rapidly and are easily applied even at sub-zero temperatures, for instance in freezer rooms.

While we can provide the appropriate flooring system for your individual needs, you decide what the surface of your new floor should look like. The use of coloured sand or chips offers a broad variety of design options.

DURADUR® flooring systems have been certified by the ISEGA analytical laboratory inert.

NANOPINTURAS® has an integrated management system for environmental protection, safety, and quality, and is certified in accordance with the ISO 9001:2008 standards that are applicable worldwide.



CONTACT

www.nanopinturas.com

NANOPINTURAS, POLÍGONO EMPRESARIUM
CALLE SISALLO 11, NAVE 3, 50720, LA CARTUJA ZARAGOZA SPAIN

Tel. +34 971 198 472 / 876 262 692 - Email: info@nanopinturas.com