

ROADEX

Road Marking Materials



ISO 9001:2015
CERTIFIED





FEATURED PROJECTS



**TP Road Marking
Karakoram Highway CPEC**



**TP Road Marking
Hazara Motorway (Havelian-Thakot) CPEC**



**TP Road Marking
Multan Sukkar Motorway CPEC**



**TP Road Marking
DI Khan Motorway CPEC**



FEATURED PROJECTS



**TP Road Marking
Metro Bus Rawalpindi/Islamabad**



**WaterBased Runway Marking
New Islamabad Airport**



**TP Road Marking
Islamabad Expressway**



**TP Road Marking
Dasu Hydropower Project**



INTRODUCTION

Who We Are

The road network and traffic density in Pakistan is increasing on a phenomenal rate which requires a demand for superior quality all weather road marking products . In 2009, with German technical assistance, the company “Total System Solution (a minerals processing company)” introduced a range of road safety paints under the brand name of **Roadex** in Pakistan. Total System Solution is a ISO 9001:2015 certified company by ALCUMUS ISOQAR accredited by UKAS, the UK’s national accreditation body. The production and quality control departments are fully equipped with experts and qualified professionals, manufacturing procedures are carried out in strict conformance of ISO 9001:2015 (Quality Management Systems) Standards. This achieves our total commitment to quality policy.

The paint production was designed on a zero pollution policy by using self consumable PE packaging with no wastage during melting process and green environment certificate was achieved. All the products of Roadex brand are produced on stringent quality parameters and tested by an independent lab along with an in-house testing facility. With strong technical background Roadex is run by professionals of paint industry who believe in applying latest technology in the world of paint industry to compete in the global market since its operation from 2009. Roadex has been applied on most of the major Road Projects of Pakistan and has become the first choice for Highway Authorities and Road Contractors due to superior results of more than twelve years performance and a all weather system road marking paint.





PRODUCT RANGE

What We Produce

Roadex Thermoplastic Retro Reflective All Weather Paint
(Conforming to BS 3262:Part1/1989 and AASHTO 249)



Roadex Chlorinated Rubber Traffic Paint
(Conforming to AASHTO M-248-90)



Roadex Water Based Runway Marking Paint
(Conforming to federal Specification TT-P 1952D)



Roadex Microsphere Glass Beads
(Conforming to BS 6088 : 1987, AASHTO 247M)



Roadex Alkyd kerbstone Paint



Roadex Anti Skid Coating System





THERMOPLASTIC PAINT (TP)

- ▶ Roadex Thermoplastic (TP) is a high quality road marking material based on hydrocarbon resin and natural resin, which gives strong weather and wear resistance. The product provides excellent adhesion and its thicker film gives long life than any other road paint.
- ▶ Roadex Paint has been used on almost all the major projects of Pakistan such as CPEC's projects, Motorways and National Highways. The paint application involves lines in width of 10-50 cm with an average film thickness of 1.5 mm. Roadex Paint conforms to International quality standards; British Standard (BS 3262) or American Standard (AASHTO 249). Roadex Thermoplastic Paint Colors: White, Yellow, Red and Blue.



Technical Data :

Technical Specifications Conforming to Specification BS 3262:		
Color	White	Yellow
Density	1.94	1.97
Flash Point	> 230 °C	> 230 °C
Softening Point	> 65° C	> 65° C
Drying Time	4 minutes at 30 °C	4 minutes at 30 °C
Pigment Type	Titanium dioxide	Lead Chromate
Binder	18-22% by weight	18-22% by weight
Luminance Factor	More than 70%	More than 60%
Mixing Ratio	Not Applicable	Not applicable
Coverage	3.5 kg/Sq M at 1.5mm thickness	3.5 kg/Sq M at 1.5mm thickness
Solvent Cleaner	Not Applicable	Not Applicable
Finish	Uniform	Uniform
Application	By Screed / Spray Machine	By Screed / Spray Machine
Glass Beads (premix)	20% by Weight	20% by Weight
Packing	25 kg	25 kg



THERMOPLASTIC PAINT (TP)

Application Method:

- ▶ Asphalt surface must be dry, free from dust, oil and loose materials.
- ▶ Roadex thermoplastic paint can be applied by screed application at $190^{\circ}\text{C} \pm 10^{\circ}\text{C}$ and spray application at $210^{\circ}\text{C} \pm 10^{\circ}\text{C}$. Special marking can be applied manually.
- ▶ Roadex Tp is heated at $190^{\circ}\text{C} \pm 10^{\circ}\text{C}$ in a pre heater (Boiler).
- ▶ Roadex TP bags are to be put into boiler one by one, so the material is melted and mixed properly. The material be allowed to mix for few minutes at temp of $180^{\circ}\text{C} \pm 10^{\circ}\text{C}$ to give flow able viscosity, before shifting it to application machine.
- ▶ Spray glass beads over the fresh hot marking @ 400-500gm/sqm.



Storage and Packaging:

- ▶ Packing available 25kg HDPE bags.
- ▶ Store under dry ,shaded place to attain minimum shelf life of 12 months.

Safety:

- ▶ Avoid contact with skin, eyes, or inhalation while handling material.
- ▶ Use protective clothing, gloves, masks, goggles etc, to avoid burn.
- ▶ No smoking, no flame, or sparking near the kettle.
- ▶ Environmentally safe No VOC.





ROADEX PROFILE MARKING PAINT

Production Description:

Roadex is the pioneer in introducing the profile marking thermoplastic paint conform to BS 3262 Part 1= 1989 standard. The product is formulated with special material to form raised blocks / Ribs after application.

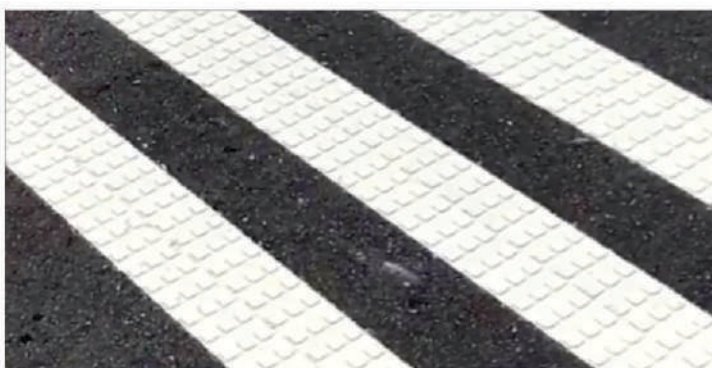
These raised ribs / Blocks formation provide the safety feature by producing an audio-tactile warning to driver staying out of their lane along with excellent reflection properties at night and in wet conditions.

Area of Application:

Roadex Profile Thermoplastic is for road & line marking of bituminous roads, and highways. Pretreat all concrete surfaces with a tack coat.

Technical Data:

Technical Specification Conforming to Specification BS 3262:	
Colour Range	White & Yellow
Application Temperature	180 °C to 200 °C
Maximum Safe Heating	230 °C
Softening Point	85 °C minimum
Density	1.9-2.0(g/cm ³)
Luminance	80 minimum
Loss Factor	5% maximum
Skid Resistance (BPN)	55 minimum
Flow Resistance	2% maximum
Gradation of mineral content	RTA T855 Pass
Glass bead content	20% (w/w) minimum
Abrasion resistance	0.6g/100 revolutions maximum
Flash Point @ °C	230 °C minimum
Packs available	25 kg
Component	One Component





ROADEX PROFILE MARKING PAINT

Surface Preparation:

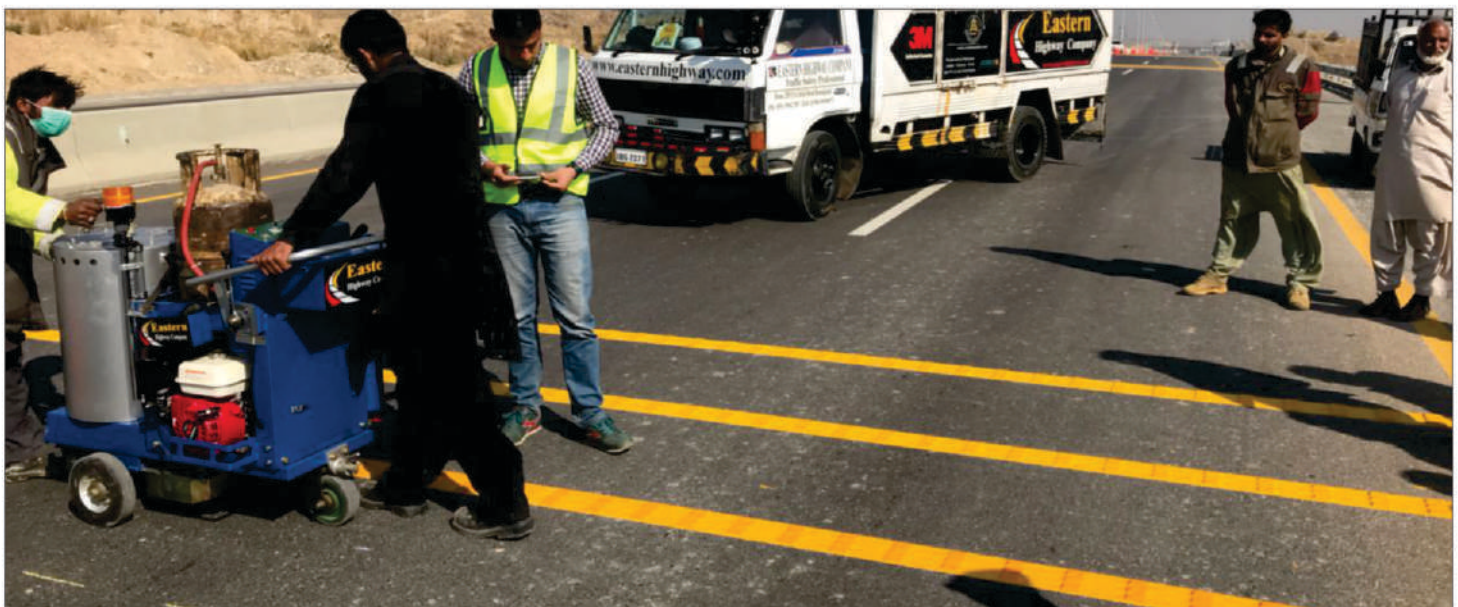
Ensure that the area where line marking is to be done is clean and free from all dirt, dust, grease, oil, loosely adhered material and all other surface contamination. If any mould or fungus is present on the surface, wash it with a commercial bleaching agent and then with rinse with clean water. Allow the surface to dry fully before application.

Flammability & Transport Information:

- ▶ Non-flammable.
- ▶ Ensure bags are properly stacked.
- ▶ Ensure the container is secured in the vehicle for transport.

Safety & Precautions:

- ▶ Do not apply in environments of high humidity / moisture, or if pending rain is a possibility.
- ▶ Apply in calm fine weather conditions.
- ▶ Cease application if weather changes are forecast.
- ▶ Check colour to the colour chart/standard prior to application.
- ▶ Provide adequate ventilation during use.
- ▶ Keep out of reach of children.
- ▶ Apply a test sample for compatibility of this product over a small test area.





CHLORINATED RUBBER PAINT (CR)

Roadex Chlorinated Rubber Base Paint is manufactured on AASHTO Standard M-248-90. Its formulation is based on high quality CR resin which gives it durability and life. Roadex CR is a fast drying paint and is suitable for both Concrete and Asphalt surface. Due to its special composition it can retain more drop on glass beads hence give better night visibility than alkyd base road paint.

Technical Specifications:

Vehicle/Additive/Solvent (Resin System)	45-50%
Pigment & Extender	55-50%
Viscosity (Ford cup 4 at 25 C)	100 sec
Flashpoint	25 °C
Colour	White, Yellow, Black
Adhesion	Asphalt and Concrete
Touch Dry	10 to 15 minutes
Traffic Dry	2 to 3 hours
Mixing Ratio	Thinner (Roadex)
Coverage	2.5 to 3 Sq M/Ltr (100-75 Microns DFT)
Application Methods	Spray, Brush or Roller
Shelf Life	6 Months when Properly Stored
Packing	20 litre

Application Method:

- ▶ Roadex CR paint is required to be used on a clean road, which should be completely dry, free from dust, mud, loose earth, sand and oil etc.
- ▶ The paint offers excellent binding to Glass Beads (Ballatoni), which should be sprayed at the rate of 160-200 gm/sq.mtr (400-500 gm/Ltr).
- ▶ Roadex CR paint can easily be applied with brush, roller and machines. However for better results application through machine is recommended. One coat at the rate of 2.5 Sq M/Ltr is normally enough to give the DFT of 100μ.
- ▶ Thinning ratio should not exceed 5% by volume with Roadex CR Thinner.
- ▶ Available in 20 Ltr drum Pack.



CHLORINATED RUBBER PAINT (CR)

Storage and Packaging:

- ▶ Available in 20 Ltr drum pack.
- ▶ Store in dry and shaded place and avoid direct sunlight.
- ▶ For better handling and avoid accident kindly read Material Safety Data Sheet.



Safety:

- ▶ Avoid contact with skin, eyes, or inhalation while handling material.
- ▶ Use protective clothing, gloves, masks, goggles etc.



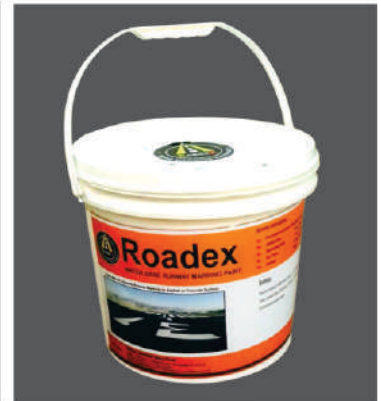


RUNWAY MARKING WATERBASED PAINT

Roadex Traffic and Air Field Marking Paint has specially been formulated for concrete and asphalt pavement and has proven to be an excellent paint on such paved surfaces. The Acrylic Binder gives very good adhesion to both old or new concrete/asphalt. It is water thin able and once dried the film shows excellent resistance to water, abrasion and weather. This product conforming to Fed Specifications TTP-1952d for Runway and Air Field Marking. **Roadex was the only paint which qualified for the New Islamabad Airport Project against foreign brands for Runway Marking.**

Technical Specifications:

Viscosity	Thixotropic
Binder Type	Modified Acrylic Copolymer
Pigment	Weather Resisting Pigments and Pigments Extenders
Colors Available	White, Yellow, Red, Black
Application	Airless Spray Machine ,Brush, Roller
Dry Time	a) Surface Dry: within 15 Minutes b) Hard Dry: 1 Hour



Application Method:

- ▶ Fresh concrete should be allowed to dry for at least 4 weeks. Surface should be dry, clean and free from contaminants.
- ▶ While applying the paint ambient temperature should not be below 10°C and above 40°C.
- ▶ In case of Airless spray system apply 200-230μ DFT minimum. In case of roller or brush apply at least 2-3 coats with an interval of 20 minutes in each coat.



Storage and Packaging:

- ▶ 4 and 16 Liter Containers.
- ▶ Store in dry and shaded place and avoid direct sunlight.
- ▶ Shelf life is one year when stored properly in original sealed container at 15 to 35°C.

Storage and Packaging:

- ▶ Avoid contact with skin, eyes, or inhalation while handling material.
- ▶ Use protective clothes, gloves, goggles etc.
- ▶ Environmentally safe. No VOC.





GLASS BEADS

Glass Beads For Road Paint :

Roadex Glass Beads are manufactured as per British standard BS 6088 A and AASHTO 247 M to meet the retro reflection of all types of road marking paint e.g. Thermoplastics, Cold Solvent (CR) Water-Based, Cold Plastic two-component to provide excellent night retro-reflectivity.

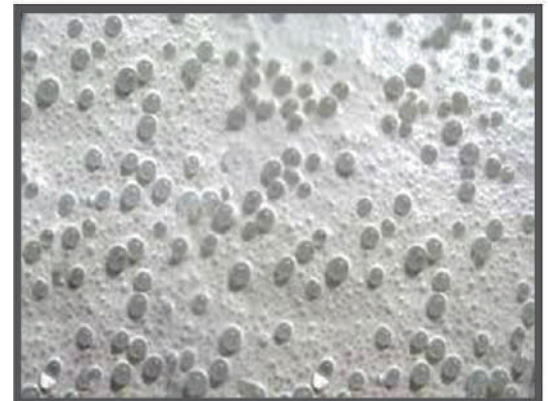
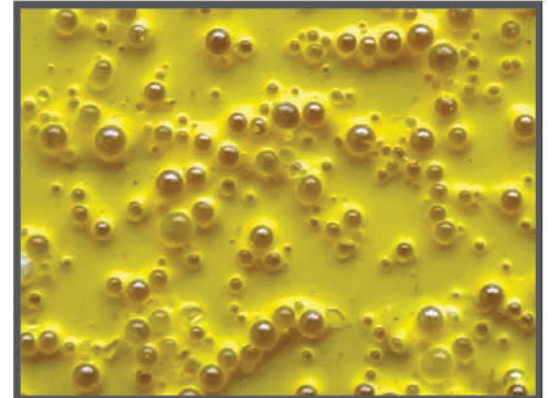
The Glass Beads are coated with silicon which can improve the coupling between glass beads and road marking materials, prevents sinking of glass beads to the bottom of material and give maximum reflection.

Specifications:

- ▶ Chemical composition: Sodium lime glass ($\text{SiO}_2 \geq 62\%$).
- ▶ Appearance Clean, transparent, no obvious impurity.
- ▶ Specific gravity (g/cm^3) 2.4 - 2.6.
- ▶ Bulk weight (g/cm^3) approx. 1.5.
- ▶ Refractive index ≥ 1.5 .
- ▶ Spherical beads (%) > 90 .
- ▶ Hardness (Moh's): 5.5-6.0.

Gradation is as per following :

Sieve	% Passing By Mass
1.7 mm	100
600 μ	80 - 100
425 μ	45 - 100
300 μ	10 - 45
212 μ	0 - 25
75 μ	0 - 5



Packaging and Storage:

- ▶ Packaging is available in net 25kgs bags in polyethylene with liner or paper bags with plastic liner.
- ▶ Storage: Keep bags dry, sheltered, and away from moisture.



KERBSTONE PAINT

Roadex Kerbstone Paint has specially been formulated for concrete surface and has proven to be an excellent paint on exterior. The Alkyd Resin Binder with high solid contents gives very good adhesion to concrete surface and UV stabilize pigment give extra life. It is thin able with oil, and mineral turpentine, once dried the film shows excellent resistance to water, abrasion and weather.

Technical Specifications:

Viscosity	Thixotropic easily applied by Brush, Roller, Spray
Binder Type	Modified Alkyd Resin
Pigment	Weather Resisting Pigments and Pigments Extenders
Colors Available	White, Yellow, Red, Black
Application	Brush, Roller or Spray
Spreading Rate	9 to 11 Sq M per Litre / Coat at 50 Micron DFT
Dry Time	a) Surface Dry: within 120 Minutes b) Hard Dry: 6 Hour
No. of Coats	2 - 3 Coats

Application Method:

- ▶ Surface must be clean, dry and in sound condition. Remove all oil, dust, grease, dirt, loose rust, and other foreign material to ensure adequate adhesion.
- ▶ For better coverage a thin coat of Roadex KB Prime can be applied.
- ▶ Apply Roadex Kerbstone Paint after dilution with white spirit from (10%-30%) to reach the suitable application viscosity.
- ▶ Apply 2-3 coats minimum to attain the uniform finish.



Storage and Packaging:

- ▶ Available in 3.64 Gallon Pack.
- ▶ Store in dry and shaded place and avoid direct sun light.
- ▶ Self life: Two years from production date.

Safety:

- ▶ Avoid contact with skin, eyes, or inhalation while handling material.
- ▶ Use protective clothing, gloves, masks and goggles etc.





ANTISKID SYSTEM

Roadex Grip System is a tough anti-slip surface coating suitable for concrete and asphalt and is suitable for a wide variety of surface applications including: dangerous curves, parking bays, cycleways, walkways, mini roundabout and before traffic junction etc.

Technical Data:

Roadex Anti Slip system is available in two version depending upon the client need

Two Component resin reinforced with aggregate (Cold Applied)

Three Component hot melt resin with aggregate (Hot Applied)

- ▶ Resin : Methyl Acrylate or Hydro Carbon base
- ▶ Aggregate : Bauxite , Carbonate of Barium or Calcium
- ▶ Pigment : Heat stable yellow , Red, White, Blue
- ▶ Packaging : 25 Kg Two pack system
- ▶ Application Tool : Squeegee, Scatter
- ▶ Touch Dry : 2-4 Hours at 15 Degree Celsius
- ▶ Solvent : Not required

Application Method:

▶ For Cold Applied

The surface should be clean dry and free from all the foreign particles including oil or grease etc.

Apply smooth layer of Two component system with squeegee on road and sprinkle the aggregate as per requirement . Smooth the aggregate with roller until uniform surface is achieved.

▶ For Hot Melt

The surface should be clean dry and free from all the foreign particles including oil or grease etc.

Heat the resin, pigment and aggregate at 150 Celsius with constant agitation until homogeneous consistency is achieved . Apply the mixture using screed system on surface of road at desire thickness.



Safety:

- ▶ Avoid contact with Skin ,eyes ,or inhalation while handling heated material.
- ▶ Use protective clothing, gloves ,mask, goggles etc.
- ▶ No smoking, no flame, or sparking near the material during mixing.
- ▶ No VOC hence environmentally friendly.





APPROVAL CERTIFICATES

Islamabad International Airport Project Project Management Consultants (PMC)



Ref: PMC/IIAP/1002P01/P-MAC/CNT/7639/2017

Date: 31 March, 2017

Mr. Khurram Shahzad
Project Manager
Muhammad Arif Constructors (Pvt.) Ltd
Site Office, IIAP Islamabad.

**Subject: PMC Services for Balance Works: Islamabad International Airport:
Package- (Addnl. Roads) Construction of Additional Roads at IIAP
APPROVAL OF PAINT MATERIAL FOR RUNWAYS/TAXIWAYS/ROAD MARKINGS**

Reference is made to Messrs. Eastern Highway Company ROADEX brand paint samples submitted by you on the above subject as per details given below:-

- | | |
|-------------------------------------------------------------|---------------|
| (a) Roadex Thermoplastic Retro-Reflective All Weather Paint | (Two samples) |
| (b) Roadex Water-based Acrylic Polymer Runway Marking Paint | (One sample) |
| (c) Roadex Chlorinated Rubber Traffic Paint | (Two samples) |
| (d) Roadex Micro-sphere (Ballotini) Glass Beads | (Two samples) |

Items (a), (b) and (c) have been tested by 3rd Party Laboratory and the respective test results are attached along with this letter. Test result of item (d) is still awaited and expected in another few days time. Based on the attached lab test results, item (a) is being cleared for general road marking applications while item (b) is being cleared for runways and taxi-ways paint markings. The color schemes shall be applied as per duly approved construction drawings.

It is contractor responsibility to ensure consistency of quality in bulk supply with that of approved samples. Please note that materials and application methodology for item (a) must conform to BS 3262 standard and for item (b) to Federal Aviation Authority TT-P-1952 E federal specs. Separate method statement and painting equipment approvals shall be need to be obtained including personnel qualifications of the equipment operators before actual start of work.

Yours faithfully,

Lewis Toms
Actg. Project Manager / ER
PMC-IIAP Islamabad

Cc:

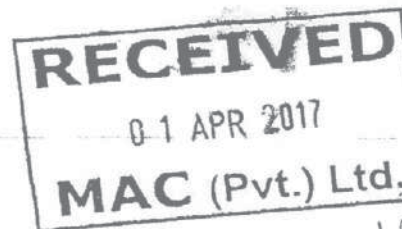
- Project Director CAA, IIAP
- Project Director PMC IIAP
- QA/QC Manager, PMC IIAP

Encl(s): - (Lab Test Results as stated above) -

Regional Office:
House # 374, Street # 14, G-10-2,
Islamabad, Pakistan
☎ +92-51-2104467, 2102167
☎ +92-51-2104468

Project Office:
Islamabad International Airport
P.O 208, GPO Rawalpindi
☎ 051-9278605

Overseas Project Office:
Festival Tower, Dubai Festival City Dubai,
United Arab Emirates
☎ +971 (0)4 206 9111
☎ +971 (0)4 232 8050



Forwarded to
NESPAC vide our letter
dated 03/04/17
#0116



APPROVAL CERTIFICATES



Friendly Highways

National Highway Authority Peshawar-Karachi Motorway Project Office of the Project Director(PKM) (Sukkur-Multan Section)

NHA camp, Sher Shah
Interchange M4, Adda
Mahay Wala, Shujabad
road, Multan.
Ph: 0310-6111612

No. PD (PKM)/Suk-Mul/NHA/2018/1265

11, June, 2018

Project Manager,
M/s CSCEC Section-7
Shujabad.

Subject: - **APPROVAL OF SOURCE OF MATERIAL OF THERMOPLASTIC
ROAD MARKING PAINT.**

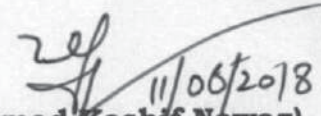
PESHAWAR KARACHI MOTORWAY SUKKUR~ MULTAN SECTION

Reference:- i) CSCEC/PKM/S7/2018/JLAH/TR005 dated 25.04.2018
ii) 5065057/1/1019 dated 24.05.2018

In the light of satisfactory test reports of thermoplastic paint, glass beads, results of trial section and upon recommendation of CME (AER), following pavement marking materials are hereby approved for use at section-7.

- a) Thermoplastic paint by "ROADDEX"
- b) Glass Beads by "PROMAX"

2. Necessary action is required, please.


(Muhammad Kashif Nawaz)
Project Director (PKM)
Sukkur – Multan Section
NHA, Multan

CC:-

- General Manager (PKM) NHA, Multan
- Chief Resident Engineer (AER) M/s SMEC Multan
- Executive Project Manager M/s CSCEC Multan



APPROVAL CERTIFICATES



NATIONAL HIGHWAY AUTHORITY
Office of the Dr. Director Maintenance (M-1)
Islamabad-Peshawar Motorway (M-1) NHA Burhan
Ph# 0572-362043, Fax# 0572-362091

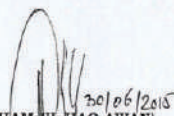
No.DD(Maint)/M-1/NHA/2015/398

30/06/2015

TO WHOM IT MAY CONCERN.

It is certified that "Roadex" Thermoplastic Paint is being used for pavement marking on M-1.

The paint was tested in U.E.T Lahore and was found as per required specifications of NHA. The behavior of the product was found to be satisfactory, durable and longlasting, meeting all the required standards and project's specifications.


(EHTESHAM UL HAQ AWAN)
Deputy Director (Maint.) M-1
Ehtesham Ul Haq Awan
Deputy Director (Maint.) M1
National Highway Authority
Burhan



ZEERUK INTERNATIONAL (Pvt.) Ltd.

Lahore Eastern By-Pass Package-I

Ref: ZI/LEBP/RE/2018/81

8th May 2018

Mr. Javed Akram
Senior Project Manager ZKB
Lahore Eastern Bypass Project
Lahore

Project : Lahore Eastern Bypass Package-I from Lahore Ring Road to Kala Khatai Road

Subject: Road Marking Paint (ROADEX)

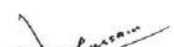
Dear Sir,

Reference: RE/LEBP/RE/ZKB/LAB/45 dated 19-04-2018

Subject of Roadex Paint was submitted for testing to Department of Transportation Engineering and Management Test Report is received vide Univ/DTEM/PMMT/06 dated 27-04-2018

The testing report is satisfactory and Hence, Roadex Paint Thermoplastic Paint is approved for construction.

Regards


Latif Hussain
Resident Engineer,
Zeeruk International (Pvt.) Ltd.
Lahore Eastern Bypass Project

C.C:-

- Regional Head, Zeeruk International (Pvt.) Ltd. Lahore.

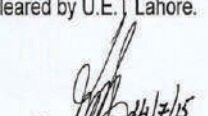
Regional Office: 46/2, Street 2, Block A, Phase 5, DHA, Lahore. Ph: 04232030139
Head Office: 3rd Floor, Time Square Plaza, I-8 Markaz, Islamabad, Phone 051-4938213, 14 Fax 051 4938215
Email: zeerukpk@yahoo.com



Office of **THE EXECUTIVE ENGINEER**
Provincial Highway Division
Rawalpindi
Ph: 051-9271930
Fax: 051-9271930

TO WHOM IT MAY CONCERN

It is certified that "Roadex" Thermoplastic Paint has been used for pavement marking on Murree city roads. Performance of the product is satisfactory. The product has been tested and cleared by U.E.T Lahore.


Executive Engineer
Provincial Highway Division
Rawalpindi



MULTAN DEVELOPMENT AUTHORITY

OFFICE OF THE EXECUTIVE ENGINEER-I

METRO BUS SYSTEM, MULTAN

No. 552/KEN (MBS)/MDA

15, July, 2017

CERTIFICATE

It is certified that M/s CRFG-HRL-MATRACON (JV) has successfully completed Lane Marking with "Roadex" Thermoplastic paint at package 03 of Metro Bus Project Multan.

The paint was tested in U.E.T Lahore and was found as per required specifications of MDA the behavior of product was found satisfactory, durable and long-lasting meeting all the required standard project's specification.


Executive Engineer-I
Metro Bus System
MDA, Multan.
Executive Engineer-I
Metro Bus Project
M.D.A. Multan.



TEST REPORTS



(UMS)
Pavement Marking Material Testing Laboratory
Department of Transportation Engineering and Management
University of Engineering & Technology, Lahore – 54890, (Pakistan)

Phones: (042) 99029125

Fax: (042) 99250202

Report No. Univ/DTEM/001

Dated: 16-08-2013

THERMOPLASTIC PAINT TEST REPORT

Name and Address of Customer: "Resident Engineer, (M-2) Zeebra-Loya/JY House No.456, Street No.37, I-8/3, Islamabad"
Sample request Ref No: "R/HRP/NG/2013/729 dated 18-06-2013"
Description of Sample: "Thermoplastic Paint Color Yellow, Brand Roadex"
Testing Date: 25-07-2013
Method/Spec. Used: BS-3262

Test Parameters	Results	Reference Range	Comments
Binder Contents	19.2%	18-22%	Pass
Aggregate, Pigment Glass Beads	80.99%	78-82%	Pass
Softening Point By Ring & Ball	84°C	>65°C	Pass
Flow Resistance at 25°C	1%	<25%	Pass

Note

- The above mentioned test report is based solely on the particular sample(s) supplied by the client and should not be reproduced in parts.
- Sampling has not been performed by the Pavement Marking Material Testing Laboratory of Department of Transportation Engineering and Management (DTEM) and the DTEM does not accept the responsibility that the sample(s) supplied before only representative sample(s) of any batch or stock or entire production.
- While the DTEM agrees to take every reasonable precaution to ensure validity of its test results, it assumes no liability thereof beyond the amount of the fee charged for the analysis/est.
- The party shall assume full responsibility for the ethical use of the results in the test reports and the laboratory shall be held free from any and all claims, which may result from the use of such data by the client or others.
- This test report shall not be reproduced wholly or in parts unless negotiated.
- After completion of the report the sample will be preserved for one month until negotiated otherwise.
- The contents of this report cannot be, in any manner, used for the publicity of the product or any advertisement.

Director
Pavement Marking Material Testing Laboratory

CHAIRMAN

Department of Transportation Engineering and Management
Chairman
Department of Transportation Engineering and Management
University of Engineering and Technology, Lahore.



Department of Transportation Engineering and Management
University of Engineering & Technology, Lahore – 54890, (Pakistan)

Phones: (042) 99029125

Fax: (042) 99250202

Report No. Univ/DTEM/176

Dated: 20-04-2013

THERMOPLASTIC PAINT TEST REPORT

Name and Address of Customer: Resident Engineer NESPAK, Metro Bus Project (Package-I)
Camp Office, Moti Mahal, Rawalpindi
Sample Request Ref No: 3652/MBP/SB/104/104
Description of Sample: Thermoplastic Road Marking Paint, Color White and Yellow, Brand ROADEX Paints
Testing Completion Date: 20-04-2013
Method/Spec. Used: BS-3262

Sample 1: Thermoplastic Road Marking Paint, Color White

Test Parameters	Results	Reference Range	Comments
Binder Contents	19.4%	18-22%	Within reference limits
Aggregate, Pigment Glass Beads	80.6%	78-82%	Within reference limits
Softening Point By Ring & Ball	80.0°C	>65°C	Within reference limits
Flow Resistance at 25°C	0.86%	<25%	Within reference limits

Sample 2: Thermoplastic Road Marking Paint, Color Yellow

Test Parameters	Results	Reference Range	Comments
Binder Contents	18.2%	18-22%	Within reference limits
Aggregate, Pigment Glass Beads	81.8%	78-82%	Within reference limits
Softening Point By Ring & Ball	85.0°C	>65°C	Within reference limits
Flow Resistance at 25°C	1.12%	<25%	Within reference limits

Note

- Sample was provided by the client and Department of Transportation Engineering and Management (DTEM) was not involved in the sampling process.
- The client shall assume full responsibility for the ethical use of results in the test report.
- This test report shall not be reproduced wholly or in parts unless agreed by DTEM.
- The contents of this report cannot be, in any manner, used for the publicity of the product or any advertisement.

CHAIRMAN

Department of Transportation Engineering and Management

Chairman
Department of Transportation Engineering and Management
University of Engineering and Technology, Lahore.

c.c. to:

Managing Director, Eastern Highway Company
205/11-A Tufail Road, Rawalpindi
(as per request made on the letter)



Department of Transportation Engineering and Management
University of Engineering & Technology, Lahore – 54890, (Pakistan)

Phones: (042) 99029125

Fax: (042) 99250202

Report No. Univ/DTEM/149

Dated: 24-03-2013

THERMOPLASTIC PAINT TEST REPORT

Name and Address of Customer: "General Manager (Motorways), Kallar Kahar Service Area North Bound (M-2), Lahore-Islamabad Motorway, National Highway Authority, Kallar, Distt, Chakwal."
Contract No. HS-(M-1)/2013-14/01&02.
Sample request Ref No: DD (Main)/NHA (M-1)/2013/269 Dated 27-02-2013.
Description of Sample: Thermoplastic Road Marking Paint, Color White and Yellow, Brand Roadex Paints
Testing Date: 18-03-2013
Method/Spec. Used: BS-3262

Sample 1: Thermoplastic Road Marking Paint, Color White

Test Parameters	Results	Reference Range	Comments
Binder Contents	19.1%	18-22%	Within reference limits
Aggregate, Pigment Glass Beads	80.9%	78-82%	Within reference limits
Softening Point By Ring & Ball	73.0°C	>65°C	Within reference limits
Flow Resistance at 25°C	0.62%	<25%	Within reference limits

Sample 2: Thermoplastic Road Marking Paint, Color Yellow

Test Parameters	Results	Reference Range	Comments
Binder Contents	18.4%	18-22%	Within reference limits
Aggregate, Pigment Glass Beads	81.6%	78-82%	Within reference limits
Softening Point By Ring & Ball	90.0°C	>65°C	Within reference limits
Flow Resistance at 25°C	0.22%	<25%	Within reference limits

Note

- Sample was provided by the client and Department of Transportation Engineering and Management (DTEM) was not involved in the sampling process.
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CHAIRMAN

Department of Transportation Engineering and Management
Chairman
Department of Transportation Engineering and Management
University of Engineering and Technology, Lahore.



Pavement Marking Material Testing Laboratory
Department of Transportation Engineering and Management
University of Engineering & Technology, Lahore – 54890, (Pakistan)

Phones: (042) 99029125

Fax: (042) 99250202

Report No. Univ/DTEM/119

Dated: 28-02-2013

THERMOPLASTIC PAINT TEST REPORT

Name and Address of Customer: "Chief Resident Engineer, (Zeebra International Pvt.) Ltd., Overlay & Modernization of Lahore-Islamabad (M-2) on D/O T Bunk."
Sample request Ref No: Z/CRE/4-36/05/004 dated 17-01-2013
Description of Sample: Thermoplastic Road Marking Paint, Color White and Yellow, Brand Roadex Paints
Testing Date: 26-01-2013
Method/Spec. Used: BS-3262

Sample 1: Thermoplastic Road Marking Paint, Color White

Test Parameters	Results	Reference Range	Comments
Binder Contents	21.1%	18-22%	Within reference limits
Aggregate, Pigment Glass Beads	78.9%	78-82%	Within reference limits
Softening Point By Ring & Ball	73°C	>65°C	Within reference limits
Flow Resistance at 25°C	0.37%	<25%	Within reference limits

Sample 2: Thermoplastic Road Marking Paint, Color Yellow

Test Parameters	Results	Reference Range	Comments
Binder Contents	21.2%	18-22%	Within reference limits
Aggregate, Pigment Glass Beads	78.8%	78-82%	Within reference limits
Softening Point By Ring & Ball	75°C	>65°C	Within reference limits
Flow Resistance at 25°C	0.42%	<25%	Within reference limits

Note

- Sample was provided by the client and Department of Transportation Engineering and Management (DTEM) was not involved in the sampling process.
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CHAIRMAN

Department of Transportation Engineering and Management
Chairman
Department of Transportation Engineering and Management
University of Engineering and Technology, Lahore.



CONSULTANT APPROVALS

NATIONAL ENGINEERING SERVICES PAKISTAN (PVT) LIMITED
NESPAK HOUSE, 1-C, Block-N, Model Town Extension, Lahore 54700, Pakistan
HIGHWAYS AND TRANSPORTATION ENGINEERING DIVISION



TOWHOM IT MAY CONCERN

We are pleased to certify that the Pavement marking with thermoplastic (Roadex) paint used at our project "Widening and Remodeling of Road & Intersections of Islamabad International Airport Road from Jinnah Chowk to Flying Club Rawalpindi".

The product was according to required specification & has been tested in PCSIR Laboratory Lahore against the relevant standard & found satisfactory, durable, longlasting, meeting all the project's specification.


(Fayyaz A. Hashmi)
Resident Engineer

Telephone: 92-42-9990600 Fax: 9092-42-9231916/9231950
E-mail: <enquiry@the.orbit.net.pk>, <nspak@wal.net.pk>
P.O.Box: 1351 Lahore
Web site: <http://www.nspak.com.pk>



SMEC

Site Office Resident Engineer (SMEC) (PVT) Engineering Associates, (Umar-Shah Waliullah Road), Contran-05
Near Camp Lilley Shah Waliullah, Sahiwal P.O. 6100-303 1185, Fax No. 061-5578015

Ref. No. RE/MMA/NHPC-05/09 **2296**

Date: 20-Nov-09


To:
Project Manager,
Lilley Shah Waliullah (JV)
Base Camp, Sahiwal.

Subject: **Approval of Thermoplastic Paint Roadex,
NHPC-05 (Ubeero-Shah Waliullah) N-5**

Reference: Your letter No. 809/U.S.W/05/09 Dated 24.10.2009.

The sample along with brochure for Thermoplastic Paint of Roadex manufacturer is tested from the PCSIR Lahore and results received vide his letter No. MSRC/STS/026-07 dated 23.01.07, qualify the specifications parameter. The Roadex paint is approved for use as per Team Leader telephonic instruction.

Regards,


Mian Muhammad Akram
Resident Engineer
Contract-05
Sahiwal

Copy to:
✓ Chief Resident Engineer, SMEC. (copy of results enclosed)
✓ Deputy Project Coordinator (NHPC)
✓ E.A Consulting (Pvt.) Limited.



Rawalpindi Development Authority
Engineering Directorate
Liaquat Bagh Murree Road,
Rawalpindi
Phone No. 5556580 Fax No. 5530423
Website: www.rda.gov.pk
No. RDA/ED-222/Rwp
Dated: 30/05/2009

To

M/S Eastern Highway Company
30 Shalimar Plaza
Aziz Bhatti Road Rawalpindi Cantt.

Subject: **Approval of Thermoplastic Roadmarking Paint (ROADEX) on
Murree Road Project**

1. This is to inform that the trial section of thermoplastic Road marking paint (ROADEX) at Murree Road in front of Liaquat Bagh executed by your firm has been approved by the competent authority.
2. You are therefore directed to execute the subject work as per approved sample.


(Rahat Ali Qureshi)
Deputy Director (Engineering-I)

Dy. Director (Engg)
RDA

ZEERUK INTERNATIONAL (Pvt.) Ltd. In Joint Venture With **Loya associates**
Design Review, Value Engineering and Construction supervision for
Widening / Improvement of Bosan Road in Multan

TO WHOM IT MAY CONCERN

We are pleased to certify that the Pavement marking with thermoplastic (Roadex) paint used at our project "Widening / Improvement Bosan Road Project Multan". The product was according to required specification & has been tested in University of Engineering & Technology (UET) Laboratory Lahore against The BS-3262 standard & found satisfactory and meeting all the project's specification.


Altaf Hussain Abro
Resident Engineer,
Bosan Road Project,
Zeeruk - Loya (JV), Multan.



EXPORT UPDATE



EXPORT TO DUBAI UPDATE:

SELF-PROPELLED THERMOPLASTIC ROAD MARKING MACHINE WITH THERMOPLASTIC PAINT PRE-HEATER AND ROAD MARKING ACCESSORIES, THERMOPLASTIC ROAD MARKING PAINT (ROADEX), GLASS BEADS.



EASTERN HIGHWAY COMPANY IS THE **ONLY** COMPANY IN PAKISTAN TO EXPORT THEIR ROAD MARKING MACHINES AND TRAFFIC SAFETY PRODUCTS TO INTERNATIONAL MARKETS; DUBAI BEING THEIR RECENT EXPORT.

OUR INTERNATIONAL MARKETS: NETHERLANDS, CANADA, AMERICA, VENEZUELA, DUBAI, AFGHANISTAN, AFRICA

ROAD MARKING MACHINES



Thermoplastic Application Machine Self Propelled



Thermoplastic Application Machine Hand Push



Thermoplastic Boiler / Pre-heater



TP Paint Remover Machine



Airless Spray System Road Marking Machine



Chlorinated Rubber Paint Machine Hand Pushed



SAFETY PRODUCTS



E-LITE Plastic Cateyes (P21), Size: 100x100x20mm
Single/Double Side Color: Yellow, White, Red, Green



E-LITE Aluminum Cateyes, Size: 100x100x22mm
Single/Double Side Color: Yellow, White, Red



E-LITE Aluminum Studs,
Size: 150x30mm or 150x45mm or 200x45mm



Aluminum Solar Road Stud 3 LEDs Each Side
Size: 105x110x20mm or 122x104x23mm



Anti Glare Shield, Size: 800x200mm

333x350x40mm



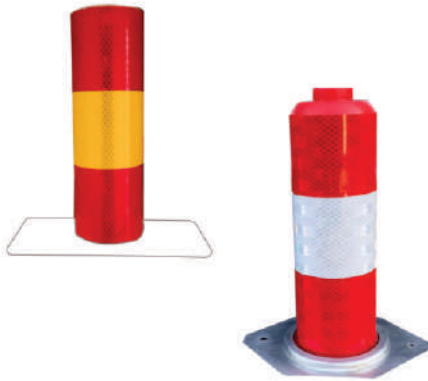
250x350x50mm



Plastic Speed Bump



SAFETY PRODUCTS



Metal / Plastic Pad Mounted
Delineator, Height: 9"



Plastic Delineator Safety Post,
Height: 30" , 18"



Message Cones, Height: 26"



Height: 30"
with Rubber Base

Height: 28"

Height: 18"

Safety Cones with Reflective Strips



Stainless Steel/Polycarbonate Convex Mirror,
Size: 24" , 32" , 33"



250 L

180 L

100 L

Plastic Dustbin



SAFETY PRODUCTS



Plastic Safety Barrier
Size: 72"x16"x28"



Plastic Safety Barrier
Size: 37"x16"x26"



Anti Collision Barrel,
Dia 580x820mm or Dia 560x840mm



Plastic Crowd Control Barrier

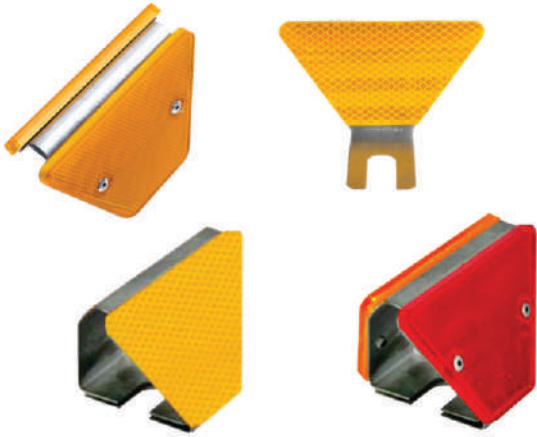


Moveable Barrier

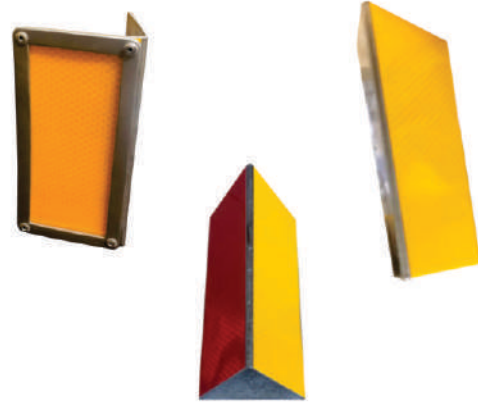


Road Hydraulic Blocker

SAFETY PRODUCTS



Guard Rail Reflector, Size: 120x70mm



NJB Angle Reflector, Size: 150x75mm



Work Zone Sign Boards



Street Sign Boards



Warning / Regulatory Signs



Informatory Signs



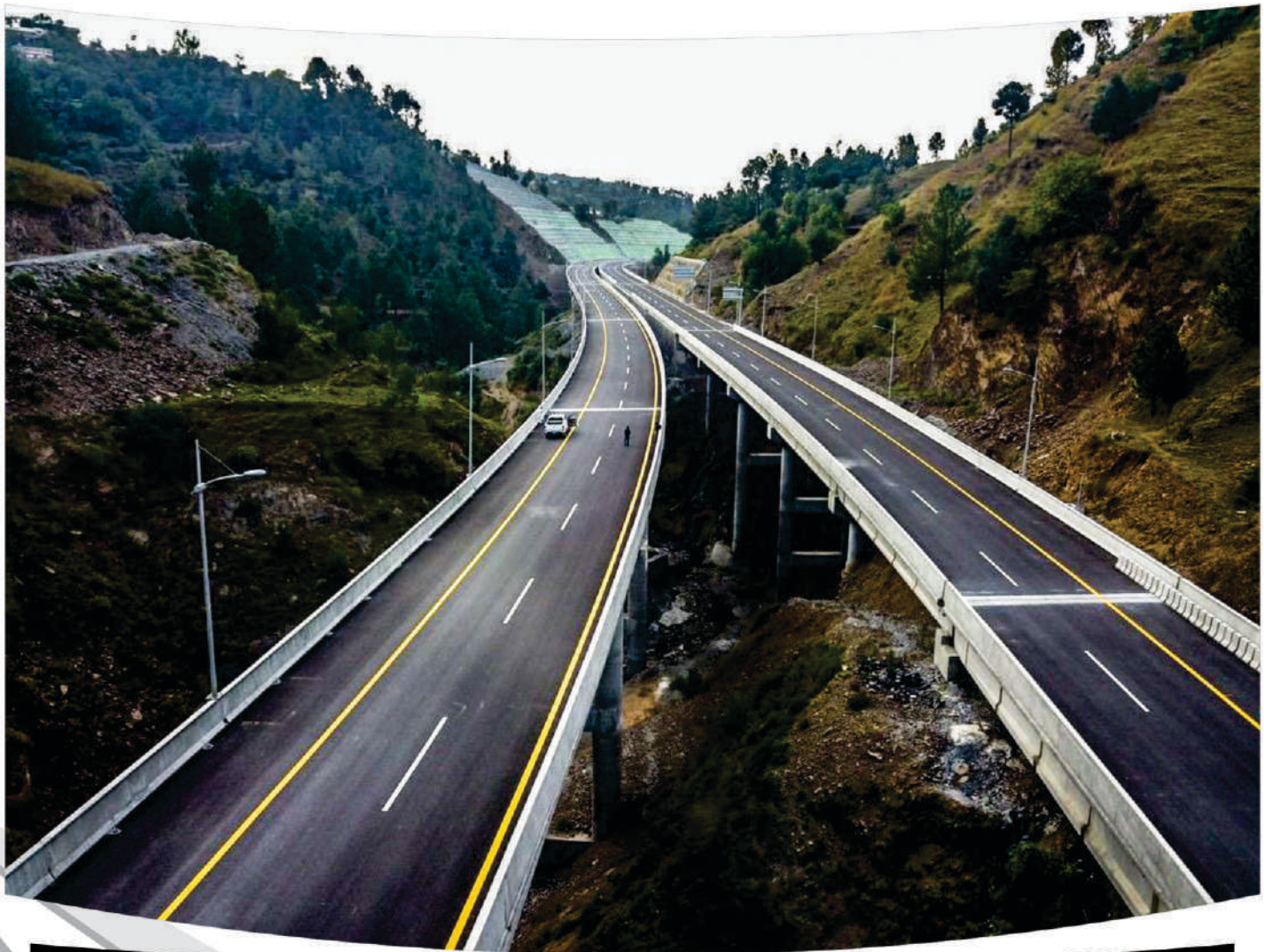
SOME VALUED CLIENTS & PROJECTS

PROJECT NAME	CONTRACTOR	SCOPE OF WORK	CONSULTANT / CLIENT
Multan Sukkar Motorway CPEC	Eastern Highway Company	TP Lane Marking	NHA
Mandra Chakwal Road	Eastern Highway Company	TP Lane Marking	C&W / NESPAK
Hazara Motorway (Havelian - Thakot) CPEC	Eastern Highway Company	TP Lane Marking	NHA
Dera Ismail (DI) Khan Western Route CPEC	Eastern Highway Company	TP Lane Marking	NHA
KKH Khunjab to Raikot Economic Corridor Package-I (320 km)	China Road & Bridge Construction Company	TP Lane Marking	NHA
KKH Rehabilitation Bisham to Pattan 85Km	China Railway Corporation	TP Lane Marking	NHA
Jaglot Skardu Road	Al Wasay Construction Company	TP Lane Marking	FWO
Dasu Hydropower Project	Eastern Highway Company	TP Lane Marking	CCECC
Gilgit - Naltar Road	Eastern Highway Company	TP Lane Marking	NLC
Lahore Metro Bus Project	Maakson	TP Lane Marking	NESPAK/LDA
KPRRP Package Sargodha Division	Eastern Highway Company	TP Lane Marking	NESPAK/C&W
Peshawar Islamabad Motorway, 155 Km	Eastern Highway Company	TP Lane Marking	NHA
KPRRP Package Sahiwal Division	Wahab Contractor	TP Lane Marking	NESPAK/C&W
New Islamabad International Airport	Eastern Highway Company	Runway / Taxiway / Roads Marking	CAA/NESPAK/MMP
Lahore Sialkot Motorway	Eastern Highway Company	TP Lane Marking	FWO
Daska Sialkot Dual Carriageway	FWO	TP Lane Marking	AZ Associate/ C&W
Sialkot- Wazirabad Dual Carriageway	FWO	CR Lane Marking	AZ Associate/ C&W
Rehabilitation of N-5 Rawat to Gujar Khan	Design Engineer	TP Lane Marking	Zeeruk/ NHA
Gawadar Turbat Road	FWO	TP Lane Marking	NHA
Attabad Tunnel Road Rehabilitation	China Road & Bridge Construction Company	TP Lane Marking	NHA
Rawalpindi – Islamabad METRO Bus Package I-III-IV-VI	ZKB/Habib Construction/ Maqbool Colson	TP Lane Marking/CR Kerbstone Painting	RDA/ NESPAK



SOME VALUED CLIENTS & PROJECTS

PROJECT NAME	CONTRACTOR	SCOPE OF WORK	CONSULTANT / CLIENT
Lane Marking at N-25 Khuzdar to Quetta 325 Km	Eastern Highway Company	TP Lane Marking	NHA
TP Road Marking at Islamabad Murree Express Way (IMDC)	Eastern Highway Company	TP Lane Marking	NHA
Northern Bypass Peshawar	NIC / NHA	TP Lane Marking	EA Consulting/NHA
Murree Express Way IMDC	Eastern Highway Company	TP Lane Marking	NHA
Lane Marking Motorway-8	Eastern Highway Company	TP Lane Marking	NHA
Multan Muzaffargarh Highway (NHDISP Project)	Hussain Cotex Ltd	TP Lane Marking	Oriental Consultant/NHA
Rahim Yar Khan to SheikhWahan (NHIP Project)	Lilly Shhrukh JV	TP Lane Marking	SMEC/NHA
Kasur-Depalpur Dual Carriageway Project	FWO	TP Lane Marking	ACE/C&W
Bahria Town, Rawalpindi Phase I-VIII	Bahria Town, Rawalpindi	TP Lane Marking	Bahria Town,
Muzafarabad City-West Bank Road	FWO	TP Lane Marking	NESPAK/NHA
Jalalabad Bypass Afghanistan	Wening Hongyuan Traffic Eng. Engineering	TP Lane Marking	WSP Sweden
Thokar Nayaaz Baig to Bahria Town Lahore Canal Road	Habib Construction	TP Lane Marking	ACE/C&W Punjab
6th Road Flyover Rawalpindi	Habib Construction	TP Lane Marking	ECSP/C&W Punjab
Mardan Bypass	Wajid Khan & Co	TP Lane Marking	FHA
Bagraam Air Base Afghanistan	KENT Group Turkey	WB Runway Marking	US Air Command
Lahore Ring Road Package VII-XII-XV-VIII	NLC / Khalid Rauf & Comp.	TP Lane Marking	NESPAK/LDA
KPRRP Package Lahore Division	ALDO International	TP Lane Marking	NESPAK/C&W
Batkhela-Dir Carriagway N-45 Highway	NLC	TP Lane Marking	NESPAK/NHA
RMK Road 17 Miles to Murree	Eastern Highway Company	TP Lane Marking	C&W/NESPAK
Islamabad Expresss Highway (Faizabad to Koral Chowk)	Maaksons	TP Lane Marking/CR Lane Marking	CDA
Bosan Road Upgradation Multan	FWO/NHA	TP Lane Marking	Zeeruk-LoyaJV/NHA
Remodeling/Improvement of Tarnol Saraikharbooza N-5	NPI	TP Lane Marking	NHA
Jacobabad to Dodapur (ADB Project)	D Balooch	TP Lane Marking	PMC/C&W Sindh



TOTAL SYSTEM SOLUTION



Head Office:

Plot # 13 Street, W3 Rawat Industrial Estate Rawalpindi

Ph: 92-51-4499013

Email: tssservicespk@gmail.com, Web: www.totalsystemsolution.com

Cell/WhatsApp: +92 3005126095, +92 3005000971



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