OSCAR®
SAFETY SOLUTIONS
AN ISO 9001 : 2008 CERTIFIED COMPANY
A UNIT OF M/S. SETHI CONSTRUCTION

PRODUCTS & SERVICES

MANUFACTURING & APPLICATION :
- Thermoplastic Road Marking Paint
- Road Safety Products
- Retro Reflective Signages

PROVIDING & LAYING :
- Bitumen Mastic For Road Surface

SOLUTIONS FOR ROAD SAFETY

OSCAR®

THERMOPLASTIC ROAD MARKING PAINT

INTRODUCTION

M/s. Sethi Construction is a well known name in India that has been venturing in the field of civil road and building construction for more than a decade. After serving the road industry for five years we have introduced "Oscar" Safety Solutions (OSS) for catering the growing needs of safety on roads. Since its in corporation in year 2008, OSS started the work of manufacturing and application of hot melt thermoplastic road marking material conforming to the specification laid down by Ministry of shipping road transport and highways (MOSRT & H) clause 803.4 and British standard (BS 3262) under the brand of "Oscar Thermoplast" Road marking Compound (OT).

THERMOPLASTIC ROAD MARKING MATERIALS

Thermoplastic Road Marking (TRM) materials are recently adopted product in our country for road marking in place of convectional brushable non reflective cold applied paints. TRM is a mandatory item for National Highways. It is a hot applied thermosetting retroreflective road marking which can be applied by hand operated / automatic machine only.

PRODUCTS

"OT" is available in white and yellow colours meeting the following standards :
(1) (MOSRT & H) clause 803.4 (2) British standard (BS 3262)

METHOD OF APPLICATION

The thermoplastic compound shall be screeded/extruded on to the pavement surface in a molten state by suitable machine capable of controlled preparation and laying with surface application of glass beads at a specific rate. Upon cooling to ambient pavement temperature, it shall produce an adherent pavement marking of specified thickness, width and capable of resisting deformation by traffic.
Where the compound is to be applied to cement concrete pavement, a sealing primer as recommended by the manufacturer, shall be applied to the pavement in advance of placing of the stripes to ensure proper bonding of the compound. On new concrete surface any laitance and/or curing compound shall be removed before the markings are applied.

COLOUR

The colour of the compound shall be white or yellow (IS colour No. 356) as specified in the drawings or as directed by the Engineer.

STORAGE/SHELF LIFE

"Oscar Thermoplast" Road marking Compound (OT) are packed in 25 Kg sealed polythene sacks with a storage life of at least one year. "OT" is best kept at ambient conditions, in cool dry & well-ventilated place and having a shelf life of one year when stored sealed & properly.

TECHNICAL INTRODUCTION OF "OSCAR THERMOPLAST" ROAD MARKING COMPOUND

Hot applied "OT" Compound is specially formulated with superior quality imported raw materials. This is a synthetic resin based thermosetting material which is having better features comparing to conventional cold applied paints. The material consists of 100% solids and is environment friendly as it is solvent free, "OT" ROAD MARKINGS are generally regarded as superior and more cost effective than other paint markings as it has better durability, reflectivity, visibility and provide less traffic disruption during application.

SCOPE OF APPLICATION

This is high performance retro-reflectroised marking that can be applied over both type payment like asphalt/bituminous surface and cement concrete surface.

APPLICATION PRECAUTIONS

Surface to be applied should be inspected thoroughly for best results.

- Before Application, The surface should be Dry, Free from dust, Lose particles, oil spillage, grease, moisture, cracks, crevice and excessive bleeding of bitumen.
- If "OT" Compound have to be applied over previous cold marking paint it must be removed by wire brush to get longer bonding properties.
- The road to be marked should be closed for atleast 30 minutes for the traffic passing over it.
- The use of per-heater (Melter) gives better results comparing to the application done by directly heating in trolley.
- Repairing of cracks & crevices should be carried out before application.
- "OT" Compound can be applied with all type of Road marking application machine like hand prams & automatic machine.
- This should be ensured that Glass beads dispenser sprinkles required quantity uniformly.

"OSCAR THERMOPLAST" ROAD MARKING COMPOUND GIVES BEST RESULT WITH POTTERS PRISTINE PREMIUM GLASS BEADS

Potters pristine premium glass beads are manufactured using glass with improved optical properties. Bench testing of markings using pristine beads, consistently produce a mean retro reflectivity of $\geq$ 450mcd/lux/m^2. (Glass beads made from standard recycled glass may provide a measure of 200-300mcd/lux/m^2) . This brighter measure ensures a safer road environment for the driver, by providing a more visible marking with an increased road preview time and greater sight distance. Potters pristine premium glass beads are available in drop-on and intermix sizes to suit your specification.

SPECIFICATION OF THERMOPLASTIC MATERIAL LAID DOWN BY M.O.S.R.T. & H.

S.NO.	COMPONENT	WHITE	YELLOW
1	Glass Beads	30±40	30±40
2	Calcium Carbonate & Inert Fillers	42.0 Max.	As per manufacturer
3	Binder	18.0 Min.	18.0 Min.
4	Titanium Dioxide (TIO2)	10.0 Min.	---
5	Yellow Pigments	---	As per manufacturer

PROPERTIES OF "OSCAR THERMOPLAST" ROAD MARKING COMPOUND IN COMPARISON TO SPECIFICATIONS LAID DOWN BY M.O.S.R.T. & H.

PROPERTIES	WHITE		YELLOW	
	AS PER MOSRT & H	OSCAR THERMOPLAST	AS PER MOSRT & H	OSCAR THERMOPLAST
Daylight Luminance (at 45°C)	65% Minimum	> 80%	55% Minimum	> 55%
Drying Time	Not more than 15 Min.	5 Min.	Not more than 15 Min.	5 Min.
Cracking Resistance at Low Temperature	Shall show no crake on application to concrete block	Pass	Shall show no crake on application to concrete block	Pass
Softening Point	Above 98°C	104. 0°C	Above 98°C	104. 0°C
Flow Resistance	Not more than 25%	5%	Not more than 25%	5%
Yellowness Index	Not more than 0.12	0.08	N.A.	N.A.
Skid Resistance	Greater than 45	55	Greater than 45	55

PROCESS CONDITIONS

Road Surface Temperature	20 degree C min.
Safe Heating Temperature	200 degree C max.
Optimum application Temperature	180±10 degree C

COVERAGE

For a dry film thickness of 2.5mm, 5.0 Kg per sqmtr. (Without wastage)

PROPERTIES OF CONCRETE PRIMER FOR "OT" COMPOUND ON CONCRETE SURFACE

S.NO.	COMPONENT	RESULTS REQUIRED	RESULTS ACHIEVED
1	Colour	Clear	Clear
2	Clarity	Translucent	Translucent
3	Drying time at 30°C	20 min.	11 min.
4	Volume Solids	33 ± 2%	31
5	Weight per Ltr.	0.96 Kg / Ltr.	0.96 Kg / Ltr.
6	Viscosity at 30°C as per Ford cup No. 4	26 Sec.	26 Sec.

HANDLING PRECUATIONS

Avoid eye & skin contact and protective gloves and safety goggles should be worn. During application a reflective safety belts / jacked should be worn.

OSCAR® SAFETY SOLUTIONS

WE "OSCAR" SAFETY SOLUTIONS AS A MANUFACTURER OF HOT APPLIED THERMOPLASTIC ROAD MARKING MATERIALS SUGGEST TO FOLLOW THESE TIPS AT THE TIME OF APPLICATION

General Problems / Solutions

Blackning of strips
- Applied over new-carpeted Road.
- Excessive drop on Glass Beads.

Patchy reflection at night
- Improper spray of Glass beads.
- Delay in spraying of Glass Beads.

Peel off
- Applied over dirty or wet surface.
- Material applied at low temperature.

Cracking
- Due to expansion and contraction of road surface by changing of weather.
- Applied over dirty or wet surface.
- Material applied at low temperature.

Bubble formation
- Applied at high temp. (Over 200 °C).

DO'S
- Inspect the surface and finish all civil works like filling of cracks etc. before application of "OT" Compound.
- Clean the road surface by using wire brush and broom (a high pressure air blower can be used for better result).
- Always use preheater fitted with mechanical stirrer.
- Always check the temperature of material time to time with calibrated thermometer / temperature gauge.

DON'T
- When the road surface is wet (specially in Monsoon) or dirty/oil spillage is there.
- When the road surface is new (traffic have not been passed over at least a period of one month).
- When the cracks are visible on surface.
- When the bitumen contents are less on the road.

Typical properties of Thermoplastic Materials

Components / Ingredients	As per MOST 803.4	As per BS3262
Binder Content	18% Minimum	20 ± 2%
TiO_2	10% Minimum	Not specified
$CaCO_3$ & Inert Fillers'	42% Maximum	80 ± 2% (including G.B).
Glass Beads % in TRM (Premixed)	30 to 40%	20% min

Other properties

01. Softening Point	102±9.5°C
02. Luminance	Not less than 65%
03. Flash point	Over 240°C
04. Drying Time	Less than 15 min.
05. Cracking	No Cracks
06. Flow Resistance	Not more than 25%
07. Skid Resistance	Not less than 45
08. Density	Apx. 2g/cc
09. Bonding strength	180psi
10. Storage life	One year (if kept unopened)

Sieve Analysis of Drop-on Glass Beads (as per BS 6008)

SIEVE SIZE	PERCENT RETAINED
850	0-5
600	5-20
300	30-75
180	10-30
Pan	0-15

Consumption at 2.5mm thickness is 5.0 Kg "OT" Compound & 250 grams Glass Beads per SQM.

Estimated Per Km. Consumption of "OT" Compound at 2.5mm thickness.

Single solid line 100mm (Edge Line)	500 kg.
Single solid line 150mm (Edge Line)	750 kg.
Broken line 3m/3m gap. 100mm (Center line)	250 kg.
Broken line 3m/6m gap. 100mm (Center line)	170kg.
Broken line 3m/4.5 gap. 100mm (Center line)	200 kg.
One edge line 150mm + one center line 3/3 gap.	1000 kg.
Two edge line 150mm + one center line 3/3 gap.	1750 kg.
One edge line 150mm + one center line 3/6 gap.	925kg.
Two edge line 150mm + one center line 3/6 gap.	1675 kg.
Pedestrian crossing (Zebra) 0.5mt x 3.0mt. Per strip	7.0kg.

Material Preparation:
"OT" Compound can be heated in Stainless Steel container fitted with mechanical stirrer by gradually rising temperature to avoid burning/overheating. Excessive heat can reduce the bonding properties of "OT" Compound premix material.

Application:
The "OT" Compound can be applied on bituminous/concrete surface by screed, spray or extrusion methods with hand pushed application pram or automatic machines at 200°C maximum. The temp, of road surface should not be less than 10°C. (Please ask for separate grades for different methods).

Safety Precautions:
Always use protective glove, Safety cones, Direction boards and retro-reflective jackets during application.

"OSCAR THERMOPLAST" ROAD MARKING COMPOUND (OT)

CLAUSE OF M.O.S.R.T. & H. (4TH REVISION) GOVERNING ROAD MARKINGS SPEC 803.4

803.1. General

The colour, width and layout of road markings shall be in accordance with the Code of Practice for Road Markings with paints, IRC: 35, and as specified in the drawings or as directed by the Engineer.

803.2. Materials

Road markings shall be of ordinary road marking paint, hot applied thermoplastic compound, or reflectorised paint as specified in the item and the material shall meet the requirements as specified below.

803.3. Ordinary Road Marking Paint

803.3.1. Ordinary paint used for road marking shall conform to Grade 1 as per IS: 164.

803.3.2. The road marking shall preferably be laid with appropriate road marking machinery.

803.3.3. Laying thickness of road marking paint shall be as specified by the Engineer.

803.4. Hot Applied Thermoplastic Road Marking

803.4.1. General :

i) The work under this section consists of marking traffic stripes using a thermoplastic compound meeting the requirements specified herein.

ii) The thermoplastic compound shall be screeded/extruded on to the pavement surface in a molten state by suitable machine capable of controlled preparation and laying with surface application of glass beads at a specific rate. Upon cooling to ambient pavement temperature, it shall produce an adherent pavement marking of specified thickness and width and capable of resisting deformation by traffic.

iii) The colour of the compound shall be while or yellow (IS colour No. 356) as specified in the drawings or as directed by the Engineer.

iv) Where the compound is to be applied to cement concrete pavement, a sealing primer as recommended by the manufacturer, shall be applied to the pavement in advance of placing of the stripes to ensure proper bonding of the compound. On new concrete surface any laitance and/or curing compound shall be removed before the markings are applied.

803.4.2. Thermoplastic Material

803.4.2.1. General : The thermoplastic material shall be homogeneously composed of aggregate, pigment, resins and glass reflectorizing beads.

803.4.2.2. Requirements :

i) Composition : The pigment, beads, and aggregate shall be uniformly dispersed in the resin. The material shall be free from all skins, dirt and foreign objects and shall comply with requirements indicated in Table 800-3.

TABLE 800-3. PROPORTIONS OF CONSTITUENTS OF MARKING MATERIAL

(Percentage by weight)

Component	White	Yellow
Binder	18.0 min.	18.0 min.
Glass Beads	30-40	30-40
Titanium Dioxide	10.0min.	-

Component	White	Yellow
Calcium Carbonate and Inert Fillers	42.0 max.	Sec
Yellow Pigments	-	Note

Note : Amount of yellow pigment, calcium carbonate and inert fillers shall be at the option of the manufacturer, provided all other requirements of this Specification are met

ii) Properties: The properties of thermoplastic material, when tested in accordance with ASTM D36/BS-3262- (Part I), shall be as below:
   a) Luminance :
      White : Daylight luminance at 45 degrees-65 per cent min. as per AASHTO M249
      Yellow : Daylight luminance at 45 degrees-45 per cent mm. as per AASHTO M249
   b) Drying time : When applied at a temperature specified by the manufacturer and to the required thickness, the material shall set to bear traffic in not more than 15 minutes.
   c) Skid resistance : not less than 45 as per BS 6044.
   d) Cracking resistance at low temperature : The material shall show no cracks on application to concrete blocks-
   e) Softening point : 102.5 t 9.5o C as per ASTM D 36.
   f) Flow resistance : Not more than 25 per cent as per AASHTO M 249.
   g) Yellowness index (for white thermoplastic paint): not more than 0.12 as per AASHTO M 249

iii) Storage life : The material shall meet the requirements of these Specifications for a period of one year. The thermoplastic material must also melt uniformly with no evidence of skins or unmelted particles for the one-year storage period. Any material not meeting the above requirements shall be replaced by the manufacturer/ supplier/Contractor.

iv) Reflectorisation : Shall be achieved by incorporation of beads, the grading and other properties of the beads shall be as specified in Clause 803.4.3.

v) Marking : Each container of the thermoplastic material shall be clearly and indelibly marked with the following information:
   1. The name, trade mark or other means of identification of manufacturer
   2. Batch number
   3. Date of manufacture
   4. Colour (white or yellow)
   5. Maximum application temperature and maximum safe heating temperature.

vi) Sampling and testing: The thermoplastic material shall be sampled and tested in accordance with the appropriate ASTM/BS method. The Contractor shall furnish to the Employer a copy of certified test reports from the manufacturers of the thermoplastic material showing results of all tests specified herein and shall certify that the material meets all requirements of this Specification.

SCHEDULE ITEM FOR "OSCAR THERMOPLAST" ROAD MARKING COMPOUND AS PER DSR 2012

Sr. No.	Description of Item	Unit
DSR 16.62	Providing and applying 2.5mm thick road marking strips (retro-reflective) of specified shade/ colour using hot thermoplastic material by fully/ semi automatic thermoplastic paint applicator machine fitted with profile shoe, glass beads dispenser, propane tank heater and profile shoe heater, driven by experienced operator on road surface including cost of material, labour ,T&P, cleaning the road surface of all dirt, seals, oil, grease and foreign material etc. complete as per direction of Engineer-in-charge and accordance with applicable specifications.	sqm.

OSCAR® SAFETY SOLUTIONS

ROAD SAFETY PRODUCT

WE "OSCAR" SAFETY SOLUTIONS (OSS) ALSO SPECIALIZE IN ROAD SAFETY FURNITURE / PRODUCTS UNDER THE BRAND NAME OF "OSCAR SAFETY" (OS)

PRODUCTS RANGE

- ROAD STUDS / CATS EYE / RAISED PAVEMENT MARKER
- DELINEATORS
- SOLAR ROAD STUDS / DELINEATORS
- SPRING POSTS / REFRACTIVE BARRIERS
- CONVEX MIRROR
- ABS SPEED BREAKER / RUBBER RUMBLERS
- TRAFFIC SAFETY CONES
- REFLECTIVE SAFETY JACKETS
- BARRICATING TAPE / PVC CAUTION TAPE
- ROAD BARRIERS
- MEDIAN MARKER
- SAFETY BATTON
- SOLAR BLINKER / CHEVRON
- EPOXY FOR FIXING ROAD FURNITURE
- CORNER GUARDS
- LINEAR DELINEATOR SYSTEM (LDS)
- KERB STONE DELINEATOR
- PARKING STOPPER
- ROAD MARKING MACHINE / BOILER
- SAFETY FENCE
- SEARCH LIGHT
- INTERLOCKING CHAIN

OSCAR® SAFETY SOLUTIONS

RAISED PAVEMENT MARKER/CAT'S EYE/ROAD STUDS

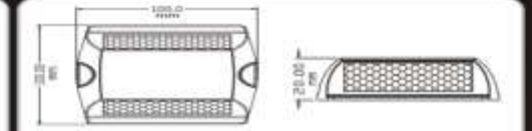
SCHEDULE ITEM FOR "OSCAR' ROAD STUDS AS PER DSR 2012

Sr. No.	Description of Item	Unit
DSR 16.5	Providing and fixing Glow studs of size 100x20 mm made of heavy duty body shall be moulded ASA (Acrylic styrene Acryloretrite) or HIP (High impact polystyrene) or ABS having electronically welded micro- prismatic lens with abrasion resistant coating as approved by Engineer in charge. The cats eye shall support a load of 13635 kg tested in accordance with ASTM D4280. The slope of retro- reflective surface shall be 35 +/-5 degress to base .The reflective panels on both sides with at least 12 cm of reflective area up each side. The luminance intensity should be as per the specification and shall be tested as described in ASTM I: 809 as recommended in BS: 873 part 4 : 1973. The studs shall be fixed to the Road surface using the adhesive conforming to IS, as per procedure recommended by the manufacturer complete and as per direction of Engineer-in-charge.	Each

"OSCAR" ROAD STUDS CONFORMING ASTM D-4280 STANDARD TESTED BY SHRI RAM INSTITUTE AND A.R.A.I.

OS - 776

ABS Cat's Eye 100 x 100 x 20mm | Conforms ASTM Standards | Tested by SRIIT & A.R.A.I.



Designed to provide Enhanced, Dependable road Guidance to motorists in bad weather conditions. Much Better than glass beads markers; these are visible from long distance. These are installed with Special Hot Melt Bitumen / EPOXY Adhesive Avoiding Nails etc. which can have a harmful effect on the road. Meets or Exceeds ASTMD-4280.

OS - 777 3M-290 Series

ABS Cat's Eye 90 x 110 x 17mm | Conforms ASTM Standards

OS - 778 3M-290 Series

ABS Cat's Eye 90 x 110 x 17mm | Conforms ASTM Standards

OS - 779 Avery Dennison

High Impact Polymer 81 x 110 x 17mm | Conforms ASTM Standards

OS - 780

ABS Material 100mm X 100mm X 20mm | Conforms ASTM Standards
Two Side Acrylic Plastic Reflectors
Has larger reflective Area
Cellular Lens Design allows lens to Continue functioning even after impact / damage.

OS - 781 APEX 921 Series

ABS Material 100mm X 100mm X 20mm | Conforms ASTM Standards
Two Side Acrylic Plastic Reflectors

OS - 782

ABS Material SHISO 100mm X 100mm X 20mm | Conforms ASTM Standards
Two Side Acrylic Plastic Reflectors

OS - 783

ABS Material 100mm X 100mm X 20mm | Conforms ASTM Standards
Two Side Acrylic Plastic Reflectors

OS - 784

Reflective Beads | Stem / Shank

ALUMINIUM ALLOY PRESSURE DIE CAST

OS - 785

Aluminium Alloy (with Square Nail) 100 X 100 X 20mm 31 Beads Each Side

OS - 786

Aluminium Alloy (with Stem) 100 X 100 X 20mm 31 or 43 Beads Each Side

OS - 787

Aluminium Alloy (with Square Nail) 100 X 100 X 20mm 21 Beads(7x3) Each Side 3 Panel

OS - 788

Aluminium Alloy (with Stem) 100 X 100 X 20mm 21 Beads(7x3) Each Side 3 Panel

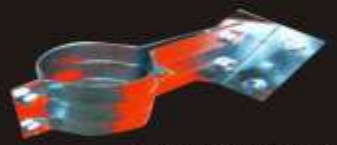
OSCAR® SAFETY SOLUTIONS

ROAD SAFETY CONVEX MIRROR

KEY PICTURES

* Made of one piece polycarbonate lens which is damage resistant.
* Not affected by any type of light ray.
* Light Weight and secure fixing.
* Complete with mounting hardware.
* Will not produce toxic fumes if burnt.

MODEL	DIA.(cm)
OS - 789	60
OS - 790	80
OS - 791	100



▲ Outdoor Bracket

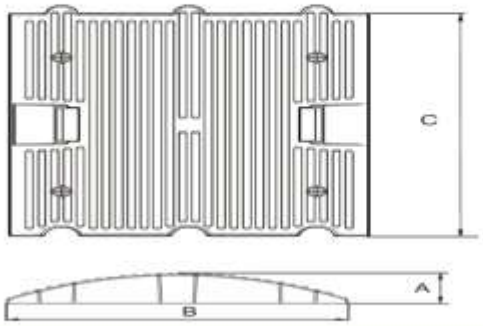
1000 mm OS - 791 | 800 mm OS - 790 | 600 mm OS - 789

SPEED BREAKER/RUMBLER

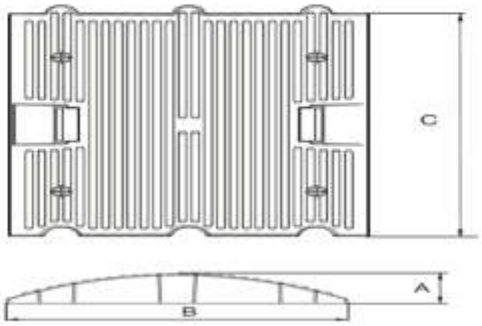
Made of Sturdy Plastic, "OSCAR" speed bumps are high resistance to severe impacts and harsh weather conditions. Its dovetail interlocking subunits make it bind perfectly into a one firm bump. The pre-colored material (Black/Yellow) and UV stabilizers keep them perpetually colorful, Studded with reflectors on either side, they are clearly visible to the motorists during night hours. These bumps are ideal for private colonies, hospitals, schools, colleges, universities, security check posts, parking areas, loading sites, etc.

MODEL No.	Height (A)	Width (B)	Length (C)
OS - 792	50	350	250
OS - 793	75	500	425
OS - 794	50	380	500

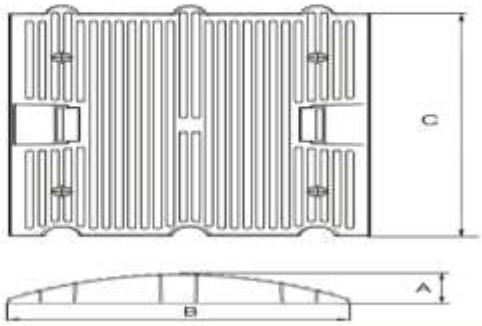
OS - 792



OS - 793



OS - 794



"OSCAR SAFETY" (OS)

OSCAR® SAFETY SOLUTIONS

DELINEATORS

SCHEDULE ITEM FOR "OSCAR' DELINEATOR AS PER DSR 2012

Sr. No.	Description of Item	Unit
DSR 16.65	Providing and fixing post delineators made of ABS body fitted with 2 nos 100mm dia high reflective, reflectors and mounted on MS pipe of 65mm dia dully powder coated anti-rust and anti theft steel to be installed as per direction of Engineer-in-charge.	Each

"OSCAR" DELINEATORS CONFORMS ASTM D-4280 STANDARD

The Dlineators are suitable for all kinds of road. These Delineators helps in avoidance of accidents, There reflectors give best reflective performance to show the road geometry during day & night. These bollards also help the driver to keep them away from road hazards. Recommended application on centre medians, verges, bridges, fly overs etc.

Round Pipe Delineators with Acrylic Reflectors

OS-795 OS-796 OS-797 OS-798

Round / Square Pipe Delineators with Reflective Tape

OS-798 OS-799 OS-800 OS-801

Stainless Steel Round Pipe Delineators with Reflective Tape

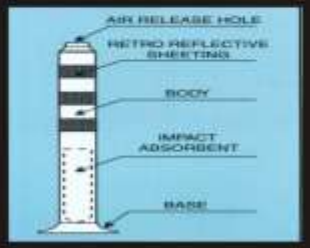
OS-802 OS-803

Note : The Delineators are available in different fittings / sizes for different Departments / Purposes.

SPRING POSTS / REFRACTIVE BARRIERS / REBOUNDABLE DELINEATOR

- Made of Special Flexible Material (Poly-urathane).
- It contains Three Reflective Bands.
- Very Durable.
- Single Piece no joint.
- Quickly Restored to its original shape without doing any damage to spring post as well as vehicles.
- Fixed on the road surface with the help of Three Fastner Bolts and special Epoxy bond.

OS-804 OS-805 OS-806



APPLICATIONS
SHARP CURVES
CENTRE LANE DIVISION
CONSTRUCTION ZONES
NO ENTRY ZONES
HIGH WAYS
PARKING LOTS
MULTI LANES

MODEL	HEIGHT
OS–804	750
OS–805	600
OS–806	450

OSCAR® SAFETY SOLUTIONS

SOLAR ROAD STUDS & DELINEATORS

SCHEDULE ITEM FOR "OSCAR' SOLAR ROAD STUDS

Sr. No.	Description of Item	Unit
1	Solar Powered Road Studs of self illuminating, flashing type having 3 Nos. LEDs for Bi-directional studs (flashing and not flickering), visibility minimum 1000 meters, flashing rate 65-75 times per min, with detachable Ni-MH battery of 1.2 V to give back-up of atleast 3-4 days from fully charged condition and it should be attached just before fixing and should not be accessible once installed, made of Robust aluminium die-cast housing with embossed edges for protection against bullock cart iron wheels, having reflector strip in addition to LEDs, stud capable of withstanding load of fully loaded carriers on the road upto Ten Tons (approx), having projected top of maximum 20mm above surface, tapering bottom anchor of maximum 55mm length (including bottom cap) with at least 6 Nos. external anti-twist ribs projecting out from bottom anchor, waterproof IP65 as per IS 12063-1987 Category-2, tested to perform satisfactorily for minimum 100 hrs, under Rapid Thermal Cycling Tests as per IEC 1215 between -40 to +85 degrees centigrade, weight minimum 700gms, size: min 125 X 125 X 25 ± 5mm (60mm shank).	Each

Advantage of "OSCAR" Solar Road Studs / Solar Delineators

- Improves road delineation, particularly effective in poor weather
- Up to 1000 meters visibility Irrespective of head-light efficiency
- Increase driver visibility and awareness to hazards
- Frequency safely outside the epileptic risk zone
- Reliable and compact design
- Clear reference points at ground level
- Improved driver reaction times
- Avoidance of sudden braking and last minute vehicle collision
- Reduces use of headlight high beam
- Alternative to expensive street lighting
- Maintenance free-fully self contained
- Reliable all night, all year round performance

Aluminium Alloy and Polycarbonate

Dia 80mm x H 90mm
Dia 84mm x H 90mm
6 LED with Stem

OS - 807

OS - 808

OS - 809

Aluminium Alloy and Polycarbonate
125 x 125 x 25 mm
6 LED with Stem

OS - 810

Aluminium Alloy and Polycarbonate
125 x 125 x 20 mm
6 LED with Stem

OS - 811

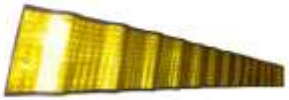
Aluminium Alloy and Polycarbonate
113 x 90 x 25 mm
6 LED, No Stem, Flat Base

OS - 812

Aluminium Alloy and Polycarbonate
128 x 134 x 23 mm
6 LED with Stem

OSCAR® SAFETY SOLUTIONS

OTHER SAFETY SOLUTIONS BY "OSCAR"

OS – 813	OS – 814	OS – 815	OS – 816	OS – 817
				
THERMOPLASTIC ROAD MARKING MACHINE	THERMOPLASTIC ROAD MARKING BOILER	ADHESIVE FOR ROAD FURNITURE	MEDIAN MARKER	SAFETY CONE
OS – 818	OS – 819	OS – 820	OS – 821	OS – 822
				
REFLECTIVE SAFETY JACKET	GUARD RAIL REFLECTORS	BOILER FOR BITUMEN MASTIC	BARRICADING / PVC CAUTION TAPE	LINEAR DELINEATOR SYSTEM (LDS)
OS – 823	OS – 824	OS – 825	OS – 826	OS – 827
				
SAFETY BATONS	SLIM SOLAR CHEVRON SIGN	PARKING STOPPERS	CORNER GUARD	SEARCH LIGHT
OS – 828	OS – 829	OS –830	OS – 831	OS – 832
				
SAFETY FENCE	INTERLOCKING CHAIN	ROAD BARRIERS	SAFETY DRUM	KERB STONE MARKER
OS – 833	OS – 834	OS – 835	OS – 836	OS – 837
				
SOLAR CAUTIONARY SIGN	SOLAR MANDATORY SIGN	SOLAR INFORMATORY SIGN	SOLAR STOP SING	THERMOPLASTIC PAINT RAW MATERIAL

"OSCAR SAFETY" (OS)

OSCAR SAFETY SOLUTIONS

RETRO REFLECTIVE ROAD SIGNAGES

WE "OSCAR' SAFETY SOLUTIONS (OSS) ALSO SPECIALIZE IN MANUFACTURING ROAD SAFETY SIGN BOARDS COMPLETE INCLUDING FIXING TO THE ROAD SURFACE, WE HAVE COMPLETED LARGE NUMBERS OF HIGHWAY PROJECTS AND STATE P.W.D. PROJECTS TO THE COMPLETE SATISFACTION OF CLIENT WITHIN THE GIVEN TIME SPAN

CLAUSE OF M.O.S.R.T. & H. (4TH REVISION) GOVERNING ROAD SIGNAGES

- **Spec. 801.1** = General conditions and materials for road signs.
- **Spec. 801.3** = General conditions and materials for road signs having retro reflective sheeting of various grades.
- **IRC 67** = Code practice for the colour, configuration, size and location of all traffic signs for highways other than Expressways shall be in accordance with the Code of Practice for Road Signs, IRC: 67

SCHEDULE ITEM FOR RETRO REFLECTIVE ROAD SIGNAGES AS PER DSR 2012

Sr. No.		Description of Item	Unit
DSR 16.59		Manufacturing supplying and fixing retro reflective sign boards made up of 2mm thick aluminium sheet, face to be fully covered with high intensity encapsulated type heat activated retro reflective sheeting conforming to type - IV of ASTM-D 4956-01 in blue and silver white or other colour combination including subject matter, message (bi-lingual), symbols and borders etc. as per IRC ; 67:2001, pasted on substrate by an adhesive backing which shall be activated by applying heat and pressure conforming to class -2 of ASTM-D-4956-01 and fixing the same with suitable sized aluminium alloy rivets @ 20 cm c/c to back support frame of M.S. angle iron of size 25x25x3 mm along with theft resistant measures, mounted and fixed with 2 Nos. M.S. angles of size 35x35x5 mm to a vertical post made up to M.S. Tee section ISMT 50x50x6 mm welded with base plate of size 100x100x5 mm at the bottom end and including making holes in pipes, angles flats, providing & fixing M.S. message plate of required size steel work to be painted with two or more coats of synthetic enamel paint of required shade and of approved brand & manufacture over priming coat of zinc chromate yellow primer (vertical MS-Tee support to be painted in black and white colours).Backside of aluminium sheet to be painted with two or more coats of epoxy paint over and including appropriate priming coat including all leads and lifts etc. complete as per drawing , specification and direction of Engineer--in-charge.	sqm.
	16.59.1	Mandatory/ Regulatory sign boards of 900mm dia - metre with part as length of 3750mm.	sqm.
	16.59.2	Cautionary /warning sign boards of equilateral triangular shape having each side of 900mm with support length of 3650mm.	sqm.
	16.60.1	Overhead informatory road signage.	sqm.

OSCAR® SAFETY SOLUTIONS

BITUMEN MASTIC WEARING COURSE FOR ROAD SURFACE

M/S. SETHI CONSTRUCTION IS IN THE FIELD OF CIVIL ROAD CONSTRUCTION FOR MORE THAN A DECADE, WE "OSCAR' SAFETY SOLUTIONS (OSS) BEING A SUB UNIT OF M/S. SETHI CONSTRUCTION ALSO SPECIALIZE IN PROVIDING & LAYING BITUMEN MASTIC AS PER THE SPECIFICATIONS OF MOSRT & H.





SCHEDULE ITEM FOR BITUMEN MASTIC FLOORING AS PER DSR 2012

Sr. No.	Description of Item	Unit
D S R 16.37	Providing and laying bitumen mastic wearing course (as per specifications) with industrial bitumen of grade 85/25 conforming to IS : 702 prepared by using mastic cooker and laid to required level and slope including providing antiskid surface with bitumen precoated fine grained hard stone chipping of approved size at the rate of 0.005 cum per 10 sqm and at approximates spacing of 10cm centre to centre in both directions, pressed into surface protruding 1mm to 4mm over mastic surface, including cleaning the surface, removal of debris etc. all complete. (Considering bitumen using 10.2% as per MORTH specification .)	sqm.
	16.37.1 25mm thick.	sqm.
	16.37.2 40 mm thick	sqm.

OSCAR®
SAFETY SOLUTIONS

AN ISO 9001 : 2008 CERTIFIED COMPANY
SOLUTIONS FOR ROAD SAFETY
A UNIT OF M/S. SETHI CONSTRUCTION

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AUTHORISED DEALER/REPRESENTATIVE :

Accident Prevention, Our Prime Intention