

OFFICE OF THE CHIEF ENGINEER  
LOCAL SELF GOVERNMENT DEPARTMENT  
3<sup>RD</sup> FLOOR, REVENUE COMPLEX  
PUBLIC OFFICE COMPOUND,  
THIRUVANANTHAPURAM -33

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No.DB3/6512/13/CE/LSGD

Dated : 01.09.2015

### CIRCULAR

**Sub: Use of nanotechnology based emerging new materials for construction of pavement layers in rural roads**

Nanotechnology in road construction refers to modifications in pavement materials at the nano level and it promises the optimization of material behavior and significantly improves the mechanical properties of pavements like durability and sustainability against traffic loads and environmental effects, resulting in much better performing roads. Latest innovations in nanotechnology has developed the potential for improvements in the engineering properties of constituent materials of bituminous pavements, particularly in resistance to moisture damage, strength and extended life, thereby reducing maintenance cost of pavements. The nanotechnology based additives to bitumen can promote warm mix technology which is more environment friendly.

The engineers of this department can resort to using nanotechnology based chemicals accredited/recommended by IRC/MoRTH/CRRRI in various pavement layers viz., embankment/subgrade, prime coat, tack coat and bituminous surface layer. The status of utilization of the new materials and results may be reported to this office in due course.

The materials/Techniques/Equipments/ Products accredited by MoRTH/IRC are annexured as I & II

  
CHIEF ENGINEER



Annexure - 1

**GOVERNMENT OF INDIA  
MINISTRY OF ROAD TRANSPORT & HIGHWAYS**

Parivahan Bhavan,  
1, Sansad Marg  
New Delhi-110001

No. RW/NH-35075/1/2010- S&R (R)

Dated: 6<sup>th</sup> August, 2014

**OFFICE MEMORANDUM**


**Subject: Use of emerging new materials and techniques in construction of National Highways.**

In continuation of SR&T (Roads) Zone's OM of even number dated 08.10.2013, the minutes of the meeting of Coordination Committee dated 22<sup>nd</sup> May, 2014 in respect of newly accredited materials/ techniques such as Instant road repair cold mix compound – INSSTAPATTCH, Anti stripping additive (Zycosoil) & water proofing compounds – Terrasil, Terraprime and IPPL SS –IX - Soil Stabilizer, containing merits and demerits were circulated to all project zones vide SR&T (Roads) Zone letter of even number dated 30<sup>th</sup> May, 2014 with the request to incorporate and utilize considering their suitability in different States on trial basis. The list of new accredited materials/ techniques, as on date, is as below:

- (i) Geocells,
- (ii) Warm Mix Asphalt Technology,
- (iii) Water Proofing Membranes,
- (iv) Non-woven, Woven Geotextiles & Techglass,
- (v) Jarofix,
- (vi) Thiopave – Asphalt Modifier,
- (vii) Infrared Recycling Pothole Repair System,
- (viii) Water proofing for Bridge decks and pavements,
- (ix) Copper Slag,
- (x) Processed Steel Slag Aggregates,
- (xi) RoadstaB Technology,
- (xii) Evercrete Deep Penetrating Sealer,
- (xiii) RBI Grade-81,
- (xiv) Tenax 3D Grids and
- (xv) Roadcem
- (xvi) Instant road repair cold mix compound - INSSTAPATTCH
- (xvii) Anti stripping additive (Zycosoil) and water proofing compounds – Terrasil, Terraprime
- (xviii) IPPL SS –IX - Soil Stabilizer

2. It is requested that the status of utilization of the new materials/ techniques along with performance feedback, if any, may be provided to SR&T (Roads) Zone for necessary action. The specific use and suitability of the new materials/ techniques is enclosed at Annex-I.

Enclosure: Annex-I

  
[Gulshan]  
Assistant Executive Engineer (R) (S, R&T)  
For Director General (Road Development) & SS

Contd. on P-2/-

To:

1. CE (P-1)/ CE (P-2)/ CE (P-3)/ CE (P-4)/ CE (P-5)/ CE (P-6)/ CE (P-7)/ CE (NHDP-IV)/ CE (NE)/ CE (EAP)/ CE (LWE)
2. Sr. Tech. Director (NIC) – For uploading on Ministry's website under "Roads & Highways → Circulars/ Notices on National Highways" and "What's New".

Copy for kind information to:

1. PPS to DG (Roads)
2. PPS to ADG-I/ PPS to ADG-II/ PPS to ADG-III

**List of new materials/ technologies with their use and benefits on National Highways**

S. No.	Name of the New material / Technology	General use and Benefits	Suitability
1.	Geocells	StrataWeb® is a 3D cellular confinement system which confines the infill material and improves the load bearing capacity of the base.	Over weak soils – expansive soils, clays and soils with low CBR values
2.	Warm Mix Asphalt Technology	Allows mix production at about 30°C lower temperatures than conventional hot mix, thus imparting performance benefits, constructability advantages and environmental benefits as well.	For bituminous works.
3.	Water Proofing Membrane	Super Thermolay APP PI/MT Membranes are ideal for a wide range of water proofing applications including roofs, reservoirs, basements, basement roof, sunken slabs, tunnels, terrace garden and car parking. Advantages: (i) Total impermeability (ii) Excellent resistance to ageing and weathering. (iii) Outstanding bond-ability and seam integrity. (iv) Stability at high temperatures	To prevent the intrusion of corrosive substance into the concrete, which will result in deterioration of the structures, leading to spalling of concrete
4 (i).	Woven geotextiles	Filtration / Separation and Soil Stabilization	It can be used between granular sub-base / base course and the sub-grade.
4 (ii).	Non-Woven geotextiles	Filtration / Separation, Paving fabrics / Slope protection	It can be used in side drainage for its functions.
4 (iii).	Techglass	Rehabilitation & Preservation of Pavements	Used to reduce the development of reflection cracks.
5.	Jarofix	It is at par with conventional material and also the material is on OMC.	In embankment and sub-grade construction.
6.	Shell Thiopave	In cold and seasonal climates where thermal cracking is an issue, Shell Thiopave allows the use of softer bitumen with improved low temperature properties without sacrificing high temperature properties. In hot climates, where conventional bitumen often do not deliver the high level of stiffness required, Shell Thiopave improves anti-rutting performance while still allowing the effective use of locally available bitumen.	For bituminous works
7.	Nu-phalt Infrared Recycling Pothole Repair System	(i) It rejuvenates the existing asphalt, thereby, saving on material and making the process eco-friendly. (iii) This system allows the surface to be heated to about 150 to 160 °C without damaging, destroying or burning the existing asphalt.	Suitable for potholes, failed joints, cracked and undulated road surface.

8.	Polyguard NW-75 for Bridge Decks or pavement waterproofing	It can be applied to highways, bridge decks, parking garages etc. prior to overlay, Polyguard under seal provides an impermeable layer protecting seal rebar from moisture and corrosion.	For highways, bridge decks, parking garages
9.	Copper slag	Copper slag is non hazardous and best suited for (i) Land reclamation. (ii) Cement & concrete application. Benefits: (i) Huge saving on natural resources. (ii) Non-toxic and non leachable in nature.	It can be used as sub-base layer after mixing with pond ash. It can also be used in different bituminous mixes.
10.	Processed Steel Slag Aggregate	1. Intended use: As a replacement for natural aggregates in Bitumen roads. 2. Benefits: (i) Better bonding with Bitumen (ii) High abrasion resistance (iii) Improved skid resistance (iv) Cost effective alternative to natural aggregate (v) Safe / Non-hazardous recycled material.	In bituminous roads
11.	RoadstaB Technology	RoadstaB Technology can be used in bases and sub-bases of the road crust.	For soil stabilization.
12.	Evercrete Deep penetrating Sealer	Evercrete Deep Penetrating Sealer (DPS), is water based, ready to use, concrete sealer that strengthens, preserves and enhances life of concrete structures.	It prevents concrete from chlorides ion ingress, corrosion and hence enhances the life of concrete structures.
13.	RBI Grade 81 – Soil Stabilizer	It reduces requirement construction materials like aggregates; borrow pit soil etc. thus reducing the transportation cost. It also reduces Life Cycle Cost.	It can be used in various pavement layers i.e. for sub-grade, sub-base and base layers.
14.	Tenax 3D Grids	To increase the interlocking and bearing capacity of the unbound layers within Indian Highway Road Construction Layers (Sub-grade, GSB, WMM and DBM). Benefits: (1) Reduce the thickness of WMM and DBM thereby reducing the overall cost of the road pavement (2) Improve bearing capacity of soil.	It can be used in Sub-grade, GSB, WMM and DBM layers.
15.	RoadCem	It is used in combination with cement and sometimes fly-ash to form a base for a road with the soil available on site. Benefits: (1) No damage from water (2) High quality road with a low maintenance cycle (3) Faster construction (4) Stabilization of Black Cotton Soil (5) Environmental feasibility	
16.	Instant road repair cold mix compound - INSSTAPATTCH	INSSTAPATTCH can be used for Instant repairs of Potholes and Patches on city roads and Highways. Potholes repaired by INSSTAPATTCH are time saving, cost saving, does not cause any traffic hindrance and is environmental friendly.	For road repairs

17.	<p>Zycosoil Nano Technology</p> <p>Terrasil</p> <p>Terraprime</p>	<p>Reactive anti-strip additive in hot mix binder and Soil &amp; aggregate waterproofing</p> <p>Sub-grade multilayer waterproofing to eliminate capillary rise</p> <p>Penetrative waterproofed prime coat</p>	<p>Reactive anti-strip additive for asphalt layers</p> <p>Waterproofing of in-situ soil</p> <p>Waterproofing of soil/stone base of WMM/WBM</p>
18.	<p>IPPL SS - IX (SoilTech MK-III) Soil Stabilizer</p>	<p>The product is used for stabilizing the base and sub-base layers of roads, Mine Haul Roads, Parking lots, hard stands and Container Depots.</p> <p>Benefit: The product intends to substantially reduce the quantity of aggregates from quarries / borrow pits. Due to the flexible nature of the Polymers, the pavement surface allows a certain amount of flexibility on the road and does not become brittle which dramatically reduces the maintenance of the stabilized roads.</p>	<p>The IPPL SS - IX Polymer stabilizer is water based which can be used extensively for stabilizing the base and sub-base layers of road. The product gains excellent strength from mechanical compaction and is an excellent solution for heavily trafficked roads and hard stands.</p>

## Annexure : II

### **NEW MATERIALS/TECHNIQUES/EQUIPMENT/PRODUCTS ACCREDITED BY INDIAN ROADS CONGRESS (valid as on 31 Oct 2014)**

The Committee for Accreditation of New Materials and Techniques formed under the aegis of Highway Research Board of Indian Roads Congress to accredit patented or new materials/techniques/equipment/products, developed in India/abroad and evaluated as per recognized National/International Specifications has accredited the following new materials/techniques/equipment/products for a period of 2 years for being used on trial basis:

Sl. No.	Job No.	Name of the New Material/ Technology/ Equipment/ Product	Usage	Date of issue of Accreditation Certificate	Contact Address of Manufacturer/ Promoter	Contact Details
1	ACC-129	Processed Steel Slag	For use in bituminous bound mixes	26-Jun-2014	Tata Steel Limited Near Armory Ground Bistupur JAMSHEDPUR - 831 001 (Jharkhand)	92345 11311
2	ACC-128	Automark - Thermoplastic Road Marking Material	For use in safety of roads, bridges and structures	26-Jun-2014	Automark Technologies (India) Pvt. Ltd. 1 <sup>st</sup> Floor, 'Saraf Court', Opp. Yashwant Stadium, Dhantoli NAGPUR - 440 012	0712-6603671-78 0712-6603679 (F)
3	ACC-127	Iter PPS 1000 CV	Bitumen additive for use in flexible pavement	26-Jun-2014	Itechimica s.r., Via G. Marconi 21 24040 Suisio (Bergamo) ITALIA	+39 035 901121 +39 035 902734 (F) 9810897913(M)
4	ACC-126	Superplast	Bitumen additive for use in flexible pavement	26-Jun-2014	Itechimica s.r., Via G. Marconi 21 24040 Suisio (Bergamo) ITALIA	+39 035 901121 +39 035 902734 (F) 9810897913(M)
5	ACC-125	Armorless Elastomeric Bridge Expansion Joint System (FRP - Jointmaster)	For use in bridges	26-Jun-2014	New Era Ployset Engineering Pvt. Ltd. UTSA (Luxury) - The Condoville, LX-3024 P.O. New Town, Rajarhat KOLKATA - 700 156	97483 06434 98310 12025
6	ACC-124	Advanced Reinforced Composite Rebar SAPL-R-09	For use in roads, bridges and structures	26-Jun-2014	Sanskriti Agencies Pvt. Ltd. Bill.: Bhadua, N.H.-2, Delhi Road (Opp. Bhadua Petrol Pump, Par Dankuni) P.O. Mollerberh, Distt. Hooghly WEST BENGAL - 712 250	033-2659 0024 / 38/53/75

Sl. No.	Job No.	Name of the New Material/ Technology/ Equipment/ Product	Usage	Date of issue of Accreditation Certificate	Contact Address of Manufacturer/ Promoter	Contact Details
7	ACC-123	STRESEAL	Stress observing membrane interlayer system for use in flexible pavements	26-Jun-2014	Tiki Tar Danosa India Private Limited Tiki Tar Estate, Village Road Bhandup (W) MUMBAI - 400 078	022-4126 6666 022-2566 7830 (F)
8	ACC-101	Nanotac	New generation reactive silane technology for water resistant chemically bonded tack coat	26-Jun-2014	Zydex Industries 704, Gunjan Tower Off. Alembic Gorwa Road VADODARA - 390 023 (Gujarat)	0265-2290322 0265-2290332(F)
9	ACC-85	INSSTA PATTCH	For road repairs	12-Mar-2012  <b>Renewed on 26-Jun-2014</b>	Akshay Innovations Private Limited, GS4 & 5, Silver Palace, Opp. Yeshwant Stadium, Dhantoli, NAGPUR - 440 012	0712-2452 152 0712-2725 027 (F)
10	ACC-37	Stainless Steel Reinforcement Bars	Structural Steel for reinforced concrete structures	06-Nov-2009  <b>Renewed on 22-Mar-2012</b>  <b>Re-Renewal on 26-Jun-2014</b>	M/s. Outokumpu India Private Limited 609-612, Hemkunt Towers Nehru Place New Delhi - 110 019	011-46518440 011-46518439 (F)
11	ACC-20	Asphaltoseal	On concrete decks for waterproofing purpose in lieu of mastic asphalt under BC overlay	29-Jul-2009  <b>Renewed on 22-Mar-2012</b>  <b>Re-Renewal on 26-Jun-2014</b>	M/s. Tiki Tar Danosa India Private Limited (Formerly, M/s. Tiki Asphalt Limited) Tiki Tar Estate, Village Road Bhandup (W) MUMBAI - 400 078	022-4126 6666 022-2566 7830 (F)
12	ACC-6	Shell Thiopave	Asphalt modifier additive used for enhancing the mechanical properties of the pavement	08-Oct-2009  <b>Renewed on 22-Mar-2012</b>  <b>Re-Renewal on 26-Jun-2014</b>	Shell India Markets Pvt. Ltd., Building 9A, 9th Floor, DLF Cyber City, Phase-III, GURGAON	0124-4771500(O) extn. 587 0124-4771600 (F)
13	ACC-122	CTM Uniaxial and Biaxial Geogrids	For use in retaining walls/ stabilized slopes/ tailed gabions/ Basal reinforcement/ Track Bed stabilization	11-Dec-2013	CTM Geo Synthetics 205, New Cloth Market AHMEDABAD - 380 002	079-22165163 079-22169326 (F)



Sl. No.	Job No.	Name of the New Material/ Technology/ Equipment/ Product	Usage	Date of issue of Accreditation Certificate	Contact Address of Manufacturer/ Promoter	Contact Details
14	ACC-121	ShaliPatch	Ready-to use material for repairing pot holes/ other openings in bitumen/concrete surfaces	11-Dec-2013	STP Limited 707, Chiranjiv Tower 43, Nehru Place NEW DELHI - 110 019	011-46561359 011-46561358(F)
15	ACC-119	Retro Reflective Sheeting High Intensity Grade ORALITE® 5810 (with water mark)	Retroreflective material for road safety signages	11-Dec-2013	Reflexite Safety India Pvt. Ltd., 219, Hillview Industrial Estate Off. Lal Bahadur Shastri Marg Amrut Nagar Road Ghatkopar (W) MUMBAI - 400 086	022-6796 9798 022-25007335 (F)
16	ACC-118	Retro Reflective Sheeting High Intensity Prismatic Grade ORALITE® 5910 (with water mark)	Retroreflective material for road safety signages	11-Dec-2013	Reflexite Safety India Pvt. Ltd., 219, Hillview Industrial Estate Off. Lal Bahadur Shastri Marg Amrut Nagar Road Ghatkopar (W) MUMBAI - 400 086	022-6796 9798 022-25007335 (F)
17	ACC-117	Retro Reflective Sheeting High Intensity Grade ORALITE® 5800 High Intensity Grade	Retroreflective material for road safety signages	11-Dec-2013	Reflexite Safety India Pvt. Ltd., 219, Hillview Industrial Estate Off. Lal Bahadur Shastri Marg Amrut Nagar Road Ghatkopar (W) MUMBAI - 400 086	022-6796 9798 022-25007335 (F)
18	ACC-116	Retro Reflective Sheeting High Intensity Prismatic Grade ORALITE® 5900 High Intensity	Retroreflective material for road safety signages	11-Dec-2013	Reflexite Safety India Pvt. Ltd., 219, Hillview Industrial Estate Off. Lal Bahadur Shastri Marg Amrut Nagar Road Ghatkopar (W) MUMBAI - 400 086	022-6796 9798 022-25007335 (F)
19	ACC-115	BITUTEX® Glass Grids, Composites & STARgrids	Used to reinforce the asphalt layers and prevent deformation	11-Dec-2013	Synten & Lueckenhaus India Private Limited Plot No. S10 to S15, Integrated Textile Park KIADB Industrial Area, Doddaballapur BANGALORE - 561 203	0120-2459700/701 0120-2459850 (F)

Sl. No.	Job No.	Name of the New Material/ Technology/ Equipment/ Product	Usage	Date of issue of Accreditation Certificate	Contact Address of Manufacturer/ Promoter	Contact Details
20	ACC-114	SYMPAFORCE® Geogrids	Used to increase the strength of soil to stabilize ground; to build up slopes, embankments and retaining walls	11-Dec-2013	Synteen & Lueckenhaus India Private Limited Plot No. S10 to S15, Integrated Textile Park KIADB Industrial Area, Doddaballapur BANGALORE - 561 203	0120-2459700/701 0120-2459850 (F)
21	ACC-108	Plastisell's Plastiflex Tunnel PVC Waterproofing Membrane	Waterproofing Membrane	11-Dec-2013	Nina Concrete Systems Pvt. Ltd. Mani Bhuvan, 4 <sup>th</sup> Floor, 54, Hughes Raad, Chowpaty MUMBAI - 400 007	022-6616 6000 022-6716 6000 022-6716 6001 (F) 022-2369 1894 (F)
22	ACC-48	Delta Denmark Make LTL XL Retroreflectometer	For measuring retro-reflectivity of pavement markings	07-Jun-2010 <b>Renewed on 11-Dec-2013</b>	Taisei International "Taisei House", No. H-84, Plot 1421, 13th Main Road, Annanagar CHENNAI - 600 040	044-2616 3830 044-2616 2877
23	ACC-47	Delta Denmark Make Retro Sign GR3 Retroreflectometer	For measuring retro-reflectivity of road signages	07-Jun-2010 <b>Renewed on 11-Dec-2013</b>	Taisei International "Taisei House", No. H-84, Plot 1421, 13th Main Road, Annanagar CHENNAI - 600 040	044-2616 3830 044-2616 2877
24	ACC-26	Pavement Quality Indicator PQI-301 (Non-Nuclear) TRANSTECH, USA Make	For measuring density readings of newly-laid asphalt pavements	03-Aug-2009 <b>Renewed on 11-Dec-2013</b>	Taisei International "Taisei House", No. H-84, Plot 1421, 13th Main Road, Annanagar, CHENNAI - 600 040	044-2616 3830 044-2616 2877
25	ACC-25	ARRB Australia Make Handheld Roughometer-II	For measuring roughness values of pavements	30-Jul-2009 <b>Renewed on 11-Dec-2013</b>	Taisei International "Taisei House", No. H-84, Plot 1421, 13th Main Road, Annanagar, CHENNAI - 600 040	044-2616 3830 044-2616 2877
26	ACC-82	Eliminator	Waterproofing system for bridge deck	14-July-2011 <b>Renewed on 11-Dec-2013</b>	Nina Concrete System Pvt. Ltd., Mani Bhuvan, 4 <sup>th</sup> Floor, 54, Hughes Road, Chowpaty, MUMBAI - 400 007	022-6616 6000 022-2369 1894 (F)
27	ACC-74	TechGrid Geogrids System	Used in RE walls/RE slopes and Soil stabilization purpose	25-July-2011 <b>Renewed on 11-Dec-2013</b>	TechFab India Industries Ltd., 712, Embassy Center, Nariman Point, MUMBAI - 400 021	022-2287 6224 022-2287 6225 022-2283 9733 022-2287 6218 (F)

Sl. No.	Job No.	Name of the New Material/ Technology/ Equipment/ Product	Usage	Date of issue of Accreditation Certificate	Contact Address of Manufacturer/ Promoter	Contact Details
28	ACC-75	TechGlass Geogrids & TechGlass Composites	Used for rehabilitation & Preservation of pavements	25-July-2011 <b>Renewed on 11-Dec-2013</b>	TechFab India Industries Ltd., 712, Embassy Center, Nariman Point, MUMBAI - 400 021	022-2287 6224 022-2287 6225 022-2283 9733 022-2287 6218 (F)
29	ACC-76	TechGeo Non-Woven Geotextiles	Used for filtration/separation and Soil stabilization purpose	25-July-2011 <b>Renewed on 11-Dec-2013</b>	TechFab India Industries Ltd., 712, Embassy Center, Nariman Point, MUMBAI - 400 021	022-2287 6224 022-2287 6225 022-2283 9733 022-2287 6218 (F)
30	ACC-78	TechFab Woven Geotextiles	Used for filtration/separation and Soil stabilization purpose	25-July-2011 <b>Renewed on 11-Dec-2013</b>	TechFab India Industries Ltd., 712, Embassy Center, Nariman Point, MUMBAI - 400 021	022-2287 6224 022-2287 6225 022-2283 9733 022-2287 6218 (F)
31	ACC-77	TechFab Polymer / Steel Gabions	Used for river training/ coastal and protection retaining walls	25-July-2011 <b>Renewed on 11-Dec-2013</b>	TechFab India Industries Ltd., 712, Embassy Center, Nariman Point, MUMBAI - 400 021	022-2287 6224 022-2287 6225 022-2283 9733 022-2287 6218 (F)
32	ACC-79	TechFab Geocomposites	Used for soil reinforcement and Sub-grade stabilization	25-July-2011 <b>Renewed on 11-Dec-2013</b>	TechFab India Industries Ltd., 712, Embassy Center, Nariman Point, MUMBAI - 400 021	022-2287 6224 022-2287 6225 022-2283 9733 022-2287 6218 (F)
33	ACC-80	TechDrain PVD	Used for soil consolidation purpose	25-July-2011 <b>Renewed on 11-Dec-2013</b>	TechFab India Industries Ltd., 712, Embassy Center, Nariman Point, MUMBAI - 400 021	022-2287 6224 022-2287 6225 022-2283 9733 022-2287 6218 (F)
34	ACC-61	Coir Geotextiles	Used in construction and maintenance of roads and embankments	18-Apr-2011 <b>Renewed on 11-Dec-2013</b>	Central Coir Research Institute, P.O. Kalavoor, Distt. Alappuzha, KERALA-688 522	0477-258094 (O) 0477-258480
35	ACC-52	NCAT Asphalt Content Furnace - Model F 85930	For the purpose of Bitumen measurement in Asphalt mixes except for gradation analysis of mixes with quartzite aggregates	22-Jul-2010 <b>Renewed on 11-Dec-2013</b>	Avantech Engineering Consortium Pvt. Ltd. 407, KLJ Tower North B-05, Netaji Subhash Place, District Centre-Pitampura, Ring Road NEW DELHI - 110 034	011-45579300 011-27354279 011-42470150 (F)

Sl. No.	Job No.	Name of the New Material/ Technology/ Equipment/ Product	Usage	Date of issue of Accreditation Certificate	Contact Address of Manufacturer/ Promoter	Contact Details
36	ACC-50	Humboldt Moisture Density Gauge, Model HS 5001 Series	For the purpose of compaction testing in Earthworks, Asphalt and Concrete	22-Jul-2010 <b>Renewed on 11-Dec-2013</b>	Avantech Engineering Consortium Pvt. Ltd. 407, KLJ Tower North B-05, Netaji Subhash Place District Centre- Pitampura, Ring Road NEW DELHI - 110 034	011-45579300 011-27354279 011-42470150 (F)
37	ACC-16	Zycosoil Nanotechnology	Anti-strip additive in hot mix binder and Soil & aggregate waterproofing	21-Nov-2008 <b>Renewed on 25-July-2011</b> <b>Re-Renewal on 11-Dec-2013</b>	Zydex Industries, 25A Gandhi Oil Mill Compound, Gorwa, VADODARA-390 016	0265-2290322 0265-2290332(F)
38	ACC-112	Water Based Road Marking Material	To increase visibility of road lanes and edges	03-Jul-2013	Jayanti Construction Chemicals, #362, Industrial Area, Phase II, PANCHKULA - 134 113	0172-5066955 (O) 0172-2591955 (F)
39	ACC-111	3M Vertical Delineator	Eliminating device for improving visibility road shoulders and median opening	03-Jul-2013	3M India Limited, Plot No. 60-61, Udyog Vihar, Phase IV GURGAON -122 001	0124 - 3854100
40	ACC-109	Terrazyme	Soil Stabilizing material used in construction of roads	03-Jul-2013	Avijeet Agencies Private Limited, H-5, (25), Ground Floor, Subramanian Manor, 4 <sup>th</sup> Main Road, Anna Nagar East, CHENNAI	044-3296 1858 (O)
41	ACC-104	Fibertex Non Wovens Geotextiles	Used in road works, ground systems, drainage/filtration	03-Jul-2013	Fibertex Nonwovens A/S, Svendborgvej 16, DK-9220 Aalborg Ø DENMARK	+ 45 96 35 3 35 (O) + 45 98 15 85 55 (F)
42	ACC-88	RoadstaB Technology	Soil Stabilizer used in construction of roads	03-Jul-2013	D&V Solutions, "Chetak House", Old Delhi-Gurgaon Road, Near CNG Filling Station, Kapashera, DELHI - 110 037	+91 74044 45122
43	ACC-69	3M <sup>TM</sup> Median Markêr	Improves visibility of road safety devices	03-Jul-2013	3M India Limited Plot No. 60-61, Udyog Vihar, Phase IV, GURGAON	0124 - 3854100

Sl. No.	Job No.	Name of the New Material/ Technology/ Equipment/ Product	Usage	Date of issue of Accreditation Certificate	Contact Address of Manufacturer/ Promoter	Contact Details
44	ACC-70	Aluminum backed flexible prismatic retro reflective sheeting	Highly flexible and conformable Retro reflective sheeting	14-July-2011 <b>Renewed on 03-Jul-2013</b>	3M India Limited, Plot No. 60-61, Udyog Vihar, Phase IV, GURGAON	0124-3854100
45	ACC-63	RBI Grade 81	stabilizer for improving the engineering properties of soil	18-Apr-2011 <b>Renewed on 03-Jul-2013</b>	Alchemist Touchnology Limited, Plot No.194, Sector-4, IMT Manesar, GURGAON -122 050	011-40600800 (O) 011-40600888 (F)
46	ACC-44	Trupave	Hybrid geo-synthetics paving mat for highway applications	07-Jun-2010 <b>Renewed on 03-Jul-2013</b>	Owens Corning (India) Private Limited, 701, Alpha, Hiranandani Gardens, Powai, MUMBAI - 400 076	022-66681707 022-6688 1701 (F)
47	ACC-29	SRMB Azar	Composite Sacrificial Zinc Coating (ZINGA) to control the menace of corrosion on structural and civil structures	07-Jun-2010 <b>Renewed on 03-Jul-2013</b>	SRMB Srijan Limited, SRMB House, 7 Khetra Das Lane KOLKATA - 700 012	033-40090000 033-22110483
48	ACC-14	Woven Jute Geotextiles	To improve properties of subgrade of roads and hill slopes	27-Jul-2009 <b>Renewed on 03-Jul-2013</b>	Gloster Jute Mills Limited, 21, Strand Road, KOLKATA - 700 001	033-22309601 to 04 033-22314222 (F) 033-22106167 (F)
49	ACC-10	Metallurgical Slag (Waelz Kiln Slag)	Used in embankment, sub-base and bituminous/ concrete pavement	08-Dec-2008 <b>Renewed on 03-Jul-2013</b>	Hindustan Zinc Limited, Zinc Smelter, Debari, UDAIPUR - 313 024	0294-2657387 0294-2657388 0294-2655147 (F)
50	ACC-87	Processed Steel Slag	Alternate Aggregate for Flexible Pavements	24-Jan-2013	Harsco India Private Limited, #8-2-684/40, Anand Banjara Colony Road #12, Banjara Hills HYDERABAD - 500 034	040-23384215-16 040-66240675 (F)
51	ACC-43	HZL Process Waste, Jarofix	Used as filler material in road embankments	03-Sept-2010 <b>Renewed on 24-Jan-2013</b>	Hindustan Zinc Limited, Chanderiya Lead - Zinc Smelter, P.O. PUTHOLI-312 021 Distt. Chittorgarh	

Sl. No.	Job No.	Name of the New Material/ Technology/ Equipment/ Product	Usage	Date of issue of Accreditation Certificate	Contact Address of Manufacturer/ Promoter	Contact Details
52	ACC-36	Evothem Warm Mix Technology	Eco-friendly pavement construction technology	07-Jun-2010 <b>Renewed on 24-Jan-2013</b>	MeadWestVaco India Pvt Ltd, 7th Floor, Kumar Business Centre, Bund Garden Road, PUNE - 411 001	098300 36126
53	ACC-22	Granulated Copper Slag	For road and embankment construction	03-Aug-2009 <b>Renewed on 24-Jan-2013</b>	Sterlite Industries (I) Ltd., BALCO, Core-6, 2nd Floor, Scope Office Complex, 7, Lodhi Road, NEW DELHI - 110 003	011-2436 6653 011-2436 00091 011-2436 1137 011-2436 6023 (F)
54	ACC-106	Titan™ 7686	Used for enhancing performance of modified bitumen.	29-Nov-2012	Honeywell International (I) Pvt. Ltd. 5 <sup>th</sup> & 6 <sup>th</sup> Floor, Tower B Building No. 9, DLF Cyber City, Phase-III GURGAON - 122 002	0124-6753027 0124 - 4031369~70 (F)
55	ACC-102	Terraprime	Used for waterproofing of soil/ stone base of WMM/WBM.	29-Nov-2012	Zydex Industries 704, Gunjan Tower Off. Alembic Gorwa Road, VADODARA - 390 023 (Gujarat)	0265-2290322 0265-2290332(F)
56	ACC-100	Zycobond	Acrylic co-polymer emulsion for bonding soil particles, used to resist soil erosion, mitigates dust on dirt roads	29-Nov-2012	Zydex Industries, 704, Gunjan Tower, Off. Alembic Gorwa Road, VADODARA - 390 023 (Gujarat)	0265-2290322 0265-2290332(F)
57	ACC-99	Terrasil	Used for waterproofing the in-situ soil.	29-Nov-2012	Zydex Industries, 704, Gunjan Tower, Off. Alembic Gorwa Road, VADODARA - 390 023 (Gujarat)	0265-2290322 0265-2290332(F)
58	ACC-98	Superthermolay APP Membrane	Used for bridge deck waterproofing applications.	29-Nov-2012	STP Limited, 707, Chiranjiv Tower 43, Nehru Place NEW DELHI - 110 019	011-46561359 011-46561358(F)
59	ACC-97	Shaliplast Asphaltomastic	Used for bridge deck waterproofing applications.	29-Nov-2012	Shalimar Seal & Tar Products (P) Limited, Post: Benara, Village: Shantipur, Mansarkhedi BASSI - 303 301 (Rajasthan)	0141-2364228 0141-2370004 (F)

Sl. No.	Job No.	Name of the New Material/ Technology/ Equipment/ Product	Usage	Date of issue of Accreditation Certificate	Contact Address of Manufacturer/ Promoter	Contact Details
60	ACC-64	Soil Stabilizer-JGRS	Soil stabiliser which can re-engineer soil and make it suitable for construction of the pavement	29-Nov-2012	Jindal Steel & Power Limited, P.B. No. 16, Khārasia Road, RAIGARH - 496 001	07762 - 227001-10 07762 - 227021-22 (F)
61	ACC-46	Soiltech MK-III	Polymer based stabilizers used for soil stabilization	07-Jun-2010  <b>Renewed on 29-Nov-2012</b>	India Polyroads Private Limited 808-809, E-Block, International Trade Tower, Nehru Place, NEW DELHI - 110 019	011-41608688 011-26447486 (F)

**Terms and conditions:**

1. The Accreditation is meant only for trial purposes.
2. The Client/User department shall monitor the performance of the accredited material / technique for its compatibility and durability in Indian environment and furnish detailed performance report to IRC indicating their experience and satisfactory/unsatisfactory performance.
3. The temporary approval, trial usage in any work shall not entitle the manufacturer/vendor, to use it as a "Certificate" for marketing purposes either in India or in other countries.
4. The Highway Research Board as a body shall not be responsible for adverse performance or failure of a stretch of road or part of bridge where the accredited new material/product has been tried on experimental basis.
5. Any expenditure carried out to try the material/technique shall be written-off, in case the new material or technique fails in requisite performance, subject to IRC certification that the said material has failed in performance in work carried out as per specifications.