ITS Coatings PVT. LTD.

airport safety markings

AIRPORT SAFETY MARKINGS | An uncompromised need

- The focus on runway safety incorporates many initiatives to reduce runway incursions. Among such initiatives, quality of airfield markings is continuously being enhanced to increase the visibility in all weather conditions
- Reducing the number of runway incidents and excursions is one of the top priorities of Airport Authorities across the world, as runway mishaps can prove catastrophic.

ITS Coatings PVT. LTD.

AIRPORT SAFETY MARKINGS | An uncompromised need

As a step in helping the airports achieve this priority, **ITS Coatings Pvt. Ltd,** a reputed solution provider for high end safety markings offers a comprehensive combination of:

- Premium quality water based paint for better visibility and high performance ensuring better safety with low maintenance.
- Finest quality airport glass beads with excellent retro reflectivity.
- A team of experienced professionals and use of top end airless spray machine for efficient installation of airport markings.

ITS Coatings PVT. LTD.

ITS Coatings | Safety means a lot to us

ITS Coatings PVT. LTD.

ITS Coatings is your trusted partner to enhance the safety at the airports with finest quality and competitively priced products and services.

As a one stop shop for airport markings ITS Coatings integrates:

- Marking paints
- Reflective glass beads
- Application services

- ✓ At ITS Coatings, we comply to quality norms for our products and services
- ✓ Perhaps the first company in India offering all the elements for carrying out a high quality traffic safety marking jobs under one roof.
- ✓ A value driven enterprise ensuring it process control, resulting in marking sustainability for over five years.
- ✓ ITS Coatings – your right and reliable choice to enhance safety at the airports by our quality and competitively priced products and services

When quality is built into the marking, safety is enhanced and the life cycle cost benefit is significantly enhanced.

Water Based Paint for Airport Markings | What's the difference?

- Airport pavements are different than highway pavements, although both are composed of the same raw materials.
- Airport markings include the same type of materials as highway markings, but they are susceptible to different wear, weathering, exposure, stresses and traffic.
- ITS Coatings understands that the crisp, clean, highly visible airfield markings are imperative to achieving the incredibly high levels of safety airports strive for today.

ITS Coatings PVT. LTD.

iTraff™ | Water Based Paint for Airport Markings

With an extensive global business exposure to traffic markings, ITS Coatings have introduced **iTraff™ range of premium quality Waterborne Acrylic Traffic Paint** specially formulated for Airports in India.

The composition of iTraff™ traffic paints makes it environmentally friendly and easy to apply with conventional and airless spray techniques

iTraff™ range comprises of various grades suited for all types of application requirements; conventional and airless spray techniques.

iTraff™ Rapide - TT-P-1952 compliant

iTraff™ Pro – IS 164 compliant

iTraff™
Water Borne Traffic Paint
RAPIDE
PRO

ITS Coatings PVT. LTD.

iTraff™ Rapide | Waterborne Airport Marking Paint

- ✓ **iTraff™ Rapide** Paint is the most preferred choice for airports, because of better sustainability, fast drying time, better maintenance and avoids generating hazardous waste. An extremely fast dry, durable 100% acrylic retro-reflective water borne paint.
- ✓ **Complying with US Federal TT-P-1952 standards**
- ✓ Suitable for glass beads retention for retro reflectivity
- ✓ Optimum visibility

APPLICATIONS:

- Airport Markings (Apron, Airfield
- Taxiways
- Runways, Ramps)
- Kerb Marking
- Parking lots
- Temporary Markings

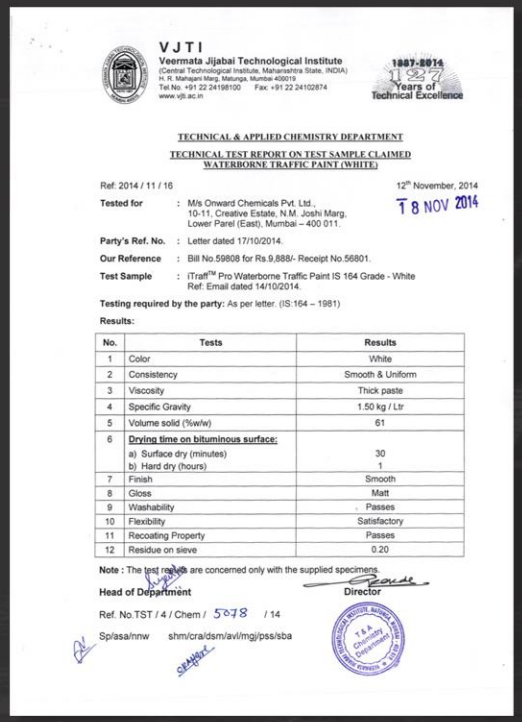
ITS Coatings PVT. LTD.

Colours available

YELLOW | WHITE | RED | BLACK | GREEN

iTraff™ Pro (IS-164) | Waterborne Airport Marking Paint

✓ **Is a waterborne, fast drying Traffic Paint** confirming to IS-164 specifications.



VJTI
Veermata Jijabai Technological Institute
(Central Technological Institute, Maharashtra State, INDIA)
H. R. Mahajani Marg, Matunga, Mumbai-400019
Tel.No. +91 22 24198100 Fax: +91 22 24102874
www.vjti.ac.in

1887-2014 127 Years of Technical Excellence

TECHNICAL & APPLIED CHEMISTRY DEPARTMENT

TECHNICAL TEST REPORT ON TEST SAMPLE CLAIMED WATERBORNE TRAFFIC PAINT (WHITE)

Ref: 2014 / 11 / 16 — 12th November, 2014

T 8 NOV 2014

Tested for : M/s Onward Chemicals Pvt. Ltd., 10-11, Creative Estate, N.M. Joshi Marg, Lower Parel (East), Mumbai – 400 011.

Party's Ref. No. : Letter dated 17/10/2014.

Our Reference : Bill No.59808 for Rs.9,888/- Receipt No.56801.

Test Sample : iTraff™ Pro Waterborne Traffic Paint IS 164 Grade - White Ref: Email dated 14/10/2014.

Testing required by the party: As per letter. (IS:164 – 1981)

Results:

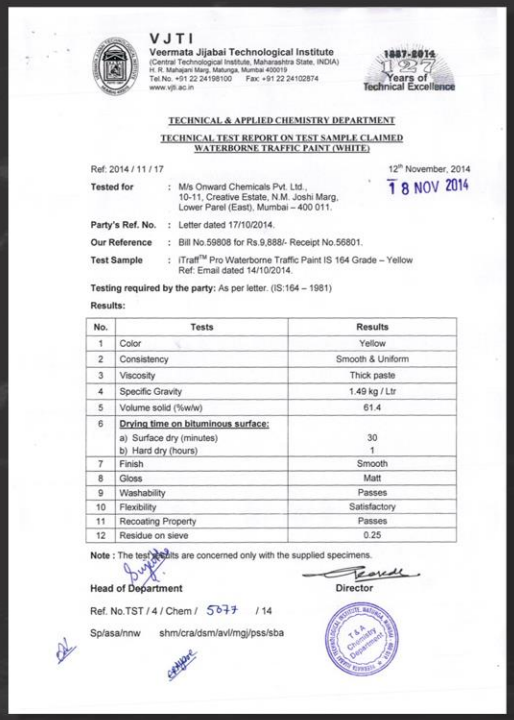
No.	Tests	Results
1	Color	White
2	Consistency	Smooth & Uniform
3	Viscosity	Thick paste
4	Specific Gravity	1.50 kg / Ltr
5	Volume solid (%w/w)	61
6	**Drying time on bituminous surface:** a) Surface dry (minutes) b) Hard dry (hours)	30 1
7	Finish	Smooth
8	Gloss	Matt
9	Washability	Passes
10	Flexibility	Satisfactory
11	Recoating Property	Passes
12	Residue on sieve	0.20

Note : The test results are concerned only with the supplied specimens.

Head of Department **Director**

Ref. No.TST / 4 / Chem / 5078 / 14

Sp/asa/nnw shm/cra/dsm/avi/mgj/pss/sba



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1887-2014 127 Years of Technical Excellence

TECHNICAL & APPLIED CHEMISTRY DEPARTMENT

TECHNICAL TEST REPORT ON TEST SAMPLE CLAIMED WATERBORNE TRAFFIC PAINT (WHITE)

Ref: 2014 / 11 / 17 — 12th November, 2014

T 8 NOV 2014

Tested for : M/s Onward Chemicals Pvt. Ltd., 10-11, Creative Estate, N.M. Joshi Marg, Lower Parel (East), Mumbai – 400 011.

Party's Ref. No. : Letter dated 17/10/2014.

Our Reference : Bill No.59808 for Rs.9,888/- Receipt No.56801.

Test Sample : iTraff™ Pro Waterborne Traffic Paint IS 164 Grade – Yellow Ref: Email dated 14/10/2014.

Testing required by the party: As per letter. (IS:164 – 1981)

Results:

No.	Tests	Results
1	Color	Yellow
2	Consistency	Smooth & Uniform
3	Viscosity	Thick paste
4	Specific Gravity	1.49 kg / Ltr
5	Volume solid (%w/w)	61.4
6	**Drying time on bituminous surface:** a) Surface dry (minutes) b) Hard dry (hours)	30 1
7	Finish	Smooth
8	Gloss	Matt
9	Washability	Passes
10	Flexibility	Satisfactory
11	Recoating Property	Passes
12	Residue on sieve	0.25

Note : The test results are concerned only with the supplied specimens.

Head of Department **Director**

Ref. No.TST / 4 / Chem / 5077 / 14

Sp/asa/nnw shm/cra/dsm/avi/mgj/pss/sba

Approved by VJTI

ITS Coatings PVT. LTD.

iTraff™ Water Borne Traffic Paint PRO

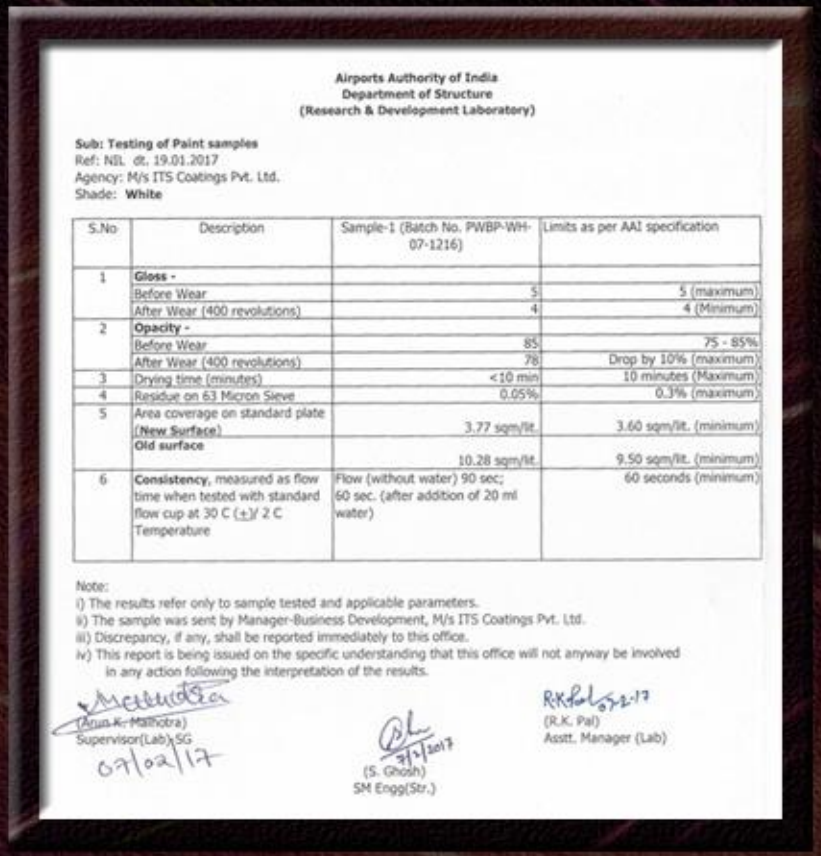
APPLICATIONS:

- Airport Markings (Apron, Airfield
- Taxiways
- Runways, Ramps)
- Kerb Marking
- Parking lots
- Temporary Markings

Colours available

YELLOW WHITE RED BLACK GREEN

Certification | iTraff PRO



Airports Authority of India
Department of Structure
(Research & Development Laboratory)

Sub: Testing of Paint samples
Ref: NIL dt. 19.01.2017
Agency: M/s ITS Coatings Pvt. Ltd.
Shade: **White**

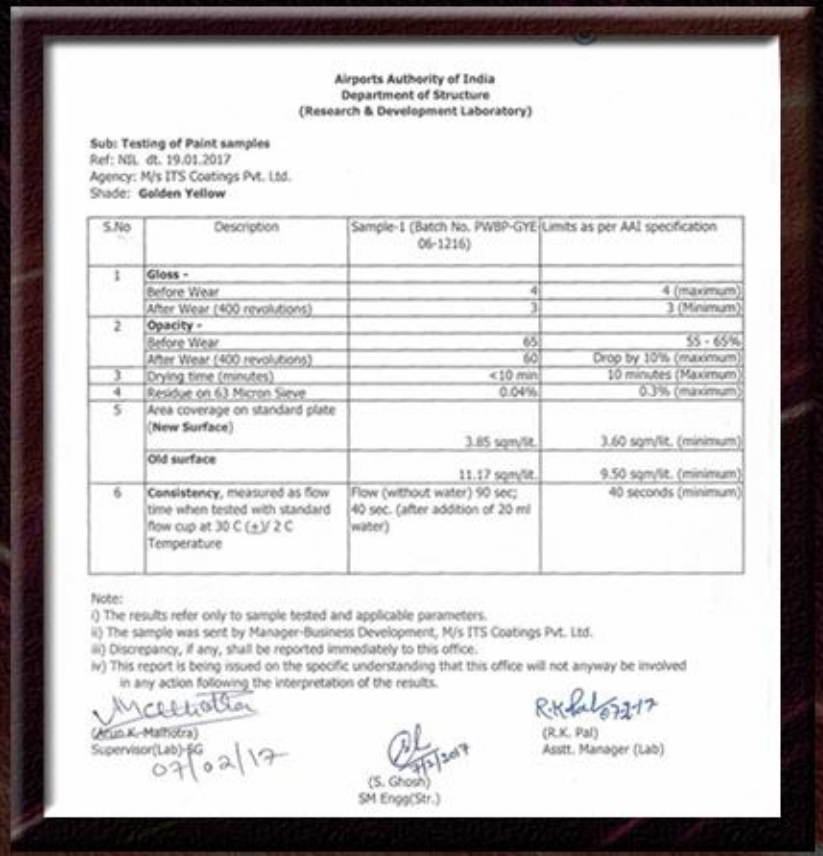
S.No	Description	Sample-1 (Batch No. PWBP-WH-07-1216)	Limits as per AAI specification
1	**Gloss -**		
	Before Wear	5	5 (maximum)
	After Wear (400 revolutions)	4	4 (Minimum)
2	**Opacity -**		
	Before Wear	85	75 - 85%
	After Wear (400 revolutions)	78	Drop by 10% (maximum)
3	Drying time (minutes)	<10 min	10 minutes (Maximum)
4	Residue on 63 Micron Sieve	0.05%	0.3% (maximum)
5	Area coverage on standard plate **(New Surface)**	3.77 sqm/lit.	3.60 sqm/lit. (minimum)
	Old surface	10.28 sqm/lit.	9.50 sqm/lit. (minimum)
6	**Consistency**, measured as flow time when tested with standard flow cup at 30 C (+)/ 2 C Temperature	Flow (without water) 90 sec; 60 sec. (after addition of 20 ml water)	60 seconds (minimum)

Note:
i) The results refer only to sample tested and applicable parameters.
ii) The sample was sent by Manager-Business Development, M/s ITS Coatings Pvt. Ltd.
iii) Discrepancy, if any, shall be reported immediately to this office.
iv) This report is being issued on the specific understanding that this office will not anyway be involved in any action following the interpretation of the results.

(Arun K. Malhotra)
Supervisor(Lab)-SG
07/02/17

(S. Ghosh)
SM Engg(Str.)

(R.K. Pal)
Asstt. Manager (Lab)



Airports Authority of India
Department of Structure
(Research & Development Laboratory)

Sub: Testing of Paint samples
Ref: NIL dt. 19.01.2017
Agency: M/s ITS Coatings Pvt. Ltd.
Shade: **Golden Yellow**

S.No	Description	Sample-1 (Batch No. PWBP-GYE 06-1216)	Limits as per AAI specification
1	**Gloss -**		
	Before Wear	4	4 (maximum)
	After Wear (400 revolutions)	3	3 (Minimum)
2	**Opacity -**		
	Before Wear	65	55 - 65%
	After Wear (400 revolutions)	60	Drop by 10% (maximum)
3	Drying time (minutes)	<10 min	10 minutes (Maximum)
4	Residue on 63 Micron Sieve	0.04%	0.3% (maximum)
5	Area coverage on standard plate **(New Surface)**	3.85 sqm/lit.	3.60 sqm/lit. (minimum)
	Old surface	11.17 sqm/lit.	9.50 sqm/lit. (minimum)
6	**Consistency**, measured as flow time when tested with standard flow cup at 30 C (+)/ 2 C Temperature	Flow (without water) 90 sec; 40 sec. (after addition of 20 ml water)	40 seconds (minimum)

Note:
i) The results refer only to sample tested and applicable parameters.
ii) The sample was sent by Manager-Business Development, M/s ITS Coatings Pvt. Ltd.
iii) Discrepancy, if any, shall be reported immediately to this office.
iv) This report is being issued on the specific understanding that this office will not anyway be involved in any action following the interpretation of the results.

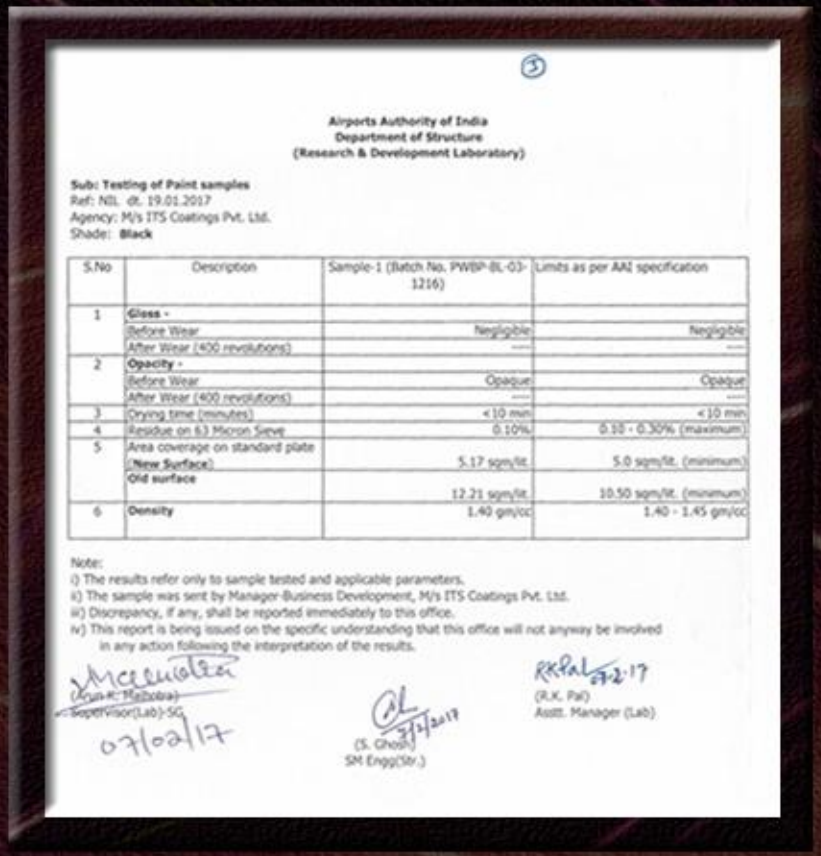
(Arun K. Malhotra)
Supervisor(Lab)-SG
07/02/17

(S. Ghosh)
SM Engg(Str.)

(R.K. Pal)
Asstt. Manager (Lab)

Approved by AAI

Certification | iTraff PRO



(3)

Airports Authority of India
Department of Structure
(Research & Development Laboratory)

Sub: Testing of Paint samples
Ref: NIL dt. 19.01.2017
Agency: M/s ITS Coatings Pvt. Ltd.
Shade: **Black**

S.No	Description	Sample-1 (Batch No. PWBP-BL-03-1216)	Limits as per AAI specification
1	**Gloss -**		
	Before Wear	Negligible	Negligible
	After Wear (400 revolutions)	----	----
2	**Opacity -**		
	Before Wear	Opaque	Opaque
	After Wear (400 revolutions)	----	----
3	Drying time (minutes)	<10 min	<10 min
4	Residue on 63 Micron Sieve	0.10%	0.10 - 0.30% (maximum)
5	Area coverage on standard plate (**New Surface**)	5.17 sqm/lit	5.0 sqm/lit. (minimum)
	Old surface	12.21 sqm/lit	10.50 sqm/lit. (minimum)
6	**Density**	1.40 gm/cc	1.40 - 1.45 gm/cc

Note:
i) The results refer only to sample tested and applicable parameters.
ii) The sample was sent by Manager-Business Development, M/s ITS Coatings Pvt. Ltd.
iii) Discrepancy, if any, shall be reported immediately to this office.
iv) This report is being issued on the specific understanding that this office will not anyway be involved in any action following the interpretation of the results.

(Arun K. Majhotra)
Supervisor(Lab)-SG
07/02/17

(S. Ghosh)
SM Engg(Str.)

RKPal 7.2.17
(R.K. Pal)
Asstt. Manager (Lab)

Approved by AAI

SWARCO Plus9beads® | +1.9 Airport beads

ITS Coatings is an exclusive distributor of High Index Glass beads from SWARCO, the world's top manufacturer of Glass Beads.

plus9beads®

Features

- ✓ **FAA approved glass beads complying to TTB-1325D Type III**
- ✓ Ensures outstanding retro reflectivity and night time visibility
- ✓ Designed specifically for applications at airports, where safety is accorded highest importance.
- ✓ Refractive index of +1.9 for drop on application with size gradation ranging from 300 – 850 microns.
- ✓ Manufactured by a unique revolutionary process comprising of purest form of raw materials that are melted into highly reflective material and shaped to finest microspheres of nearly 100% roundness.
- ✓ European EN standards & United States FAA compliant
- ✓ High retro reflectivity over a long period which enhances safety and reduces maintenance costs

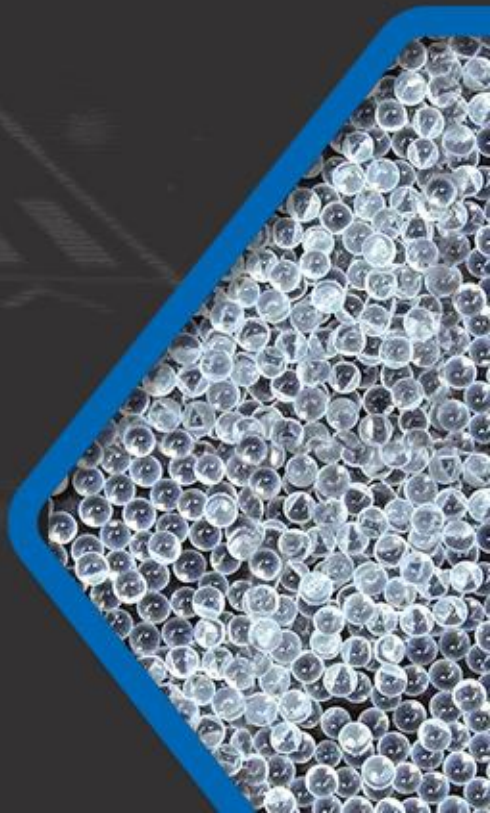
Instaglo® | Drop On Glass beads

Instaglo® Glass Beads provide uniform retro reflectivity in all conventional road marking materials. These beads are dropped on the surface of the paint for optimum penetration.

Instaglo® Drop on glass beads comply to: **BS 6088/1981 Type – 2 and CI.803.4.3.3 of MOST** specifications

Features

- ✓ Moisture resistant
- ✓ Free flowing properties
- ✓ Superior adhesion on markings
- ✓ Excellent retro reflectivity
- ✓ Application on roads, airports, sea ports, parking lots
- ✓ Works well with water based traffic paint and thermoplastic markings



ITS Coatings PVT. LTD.

Certification | plus9beads & Instaglo Drop on Beads

10/02/14 05:16PM HP LASERJET FAX 01202783216 p.01

No. : NTH (NR)/GZB-5

2140119

भारत सरकार
Government Of India
राष्ट्रीय परीक्षण संस्था (उत्तर क्षेत्र)
National Test House (NR)
कमला नेहरू नगर, गाजियाबाद 201 002
KAMLA NEHRU NAGAR, GHAZIABAD-201 002

INTERIM/FINAL REPORT

Test Certificate No	Date of Issue	Code No	पृष्ठ Page	पृष्ठों की संख्या No of Pages
NTH(NR)/CH(P)/2014/00139	10/02/2014	1391402153554	1	3

जिसे जारी करना है
Issued To: PROJECT MANAGER

पता
Address: KNR Constructions Limited,KNR House,3rd f& 4th floor,plot no.114,phase-1,kavuri hills; Hyderabad-5000033

ग्राहक का सन्दर्भ सं. एवं दिनांक
Customer's Ref. No: KNRCL/P-8/2014/80 Date: 06/01/2014

रजिस्टर सं एवं दिनांक
Register No & Date: 00139/NTH(NR)/CH(P)/07/02/2014

परीक्षण सामग्री का विवरण
Description of Test Item: Glass beads

पहिचान सामग्री का ब्यौरा
Identification of Test Item: Sample packed in polythene packet & repacked in a paper packet (Qty.2.0Kg approx)bearing Batch No. 12523,Mfg. Date 28.10.2013.

वस्तु का विशिष्टि (यदि हो)
Product Specification (if any): MORTH specification Clause 803.4.3.3 of Table 800-4.

वस्तु प्राप्ति की तिथि
Date of Receipt of the Test Item: 05/02/2014

कार्य निष्पादन की तिथि
Date(s)of Performance of Tests: From: 07/02/2014 To: 10/02/2014

प्रयुक्त प्रणाली का ब्यौरा
Method(s) used for Test: MORTH specification

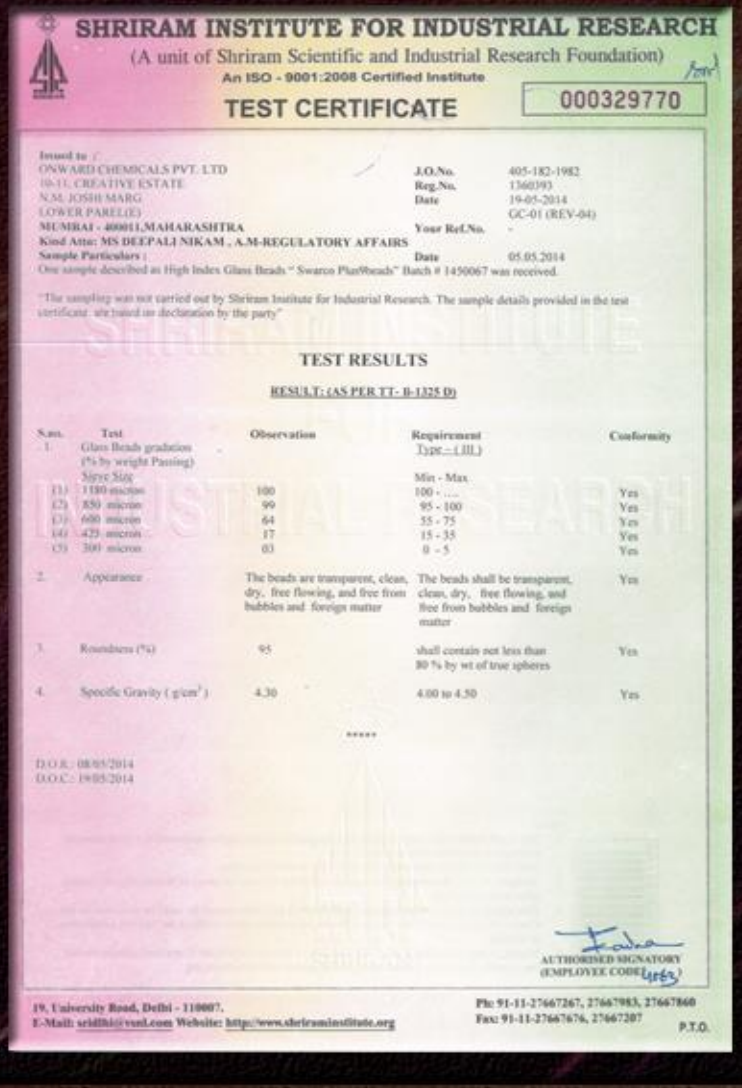
नमूना प्रक्रिया यदि प्रासंगिक हो
Sampling Procedure where relevant

Tested By
Brij Mohan Singh Bisht
SO Chemical

Checked By
Buddh Prakash
Scientist-SB(Chemical)

Approved By
Debasish Saha
Scientist-SD(Chemical)

019293



SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH
(A unit of Shriram Scientific and Industrial Research Foundation)
An ISO - 9001:2008 Certified Institute

TEST CERTIFICATE 000329770

Issued to :
ONWARD CHEMICALS PVT. LTD
10-11, CREATIVE ESTATE
N.M. JOSHI MARG
LOWER PAREL(E)
MUMBAI - 400011,MAHARASHTRA
Kind Attn: MS DEEPALI NIKAM , A.M-REGULATORY AFFAIRS
Sample Particulars :

J.O.No. 405-182-1982
Reg.No. 1360393
Date 19-05-2014
GC-01 (REV-04)
Your Ref.No. -
Date 05.05.2014

One sample described as High Index Glass Beads " Swarco Plus9beads" Batch # 1450067 was received.

"The sampling was not carried out by Shriram Institute for Industrial Research. The sample details provided in the test certificate are based on declaration by the party"

TEST RESULTS

RESULT: (AS PER TT- 8-1325 D)

S.no.	Test	Observation	Requirement Type – (III)	Conformity
1.	Glass Beads gradation (% by weight Passing) Sieve Size		Min - Max	
(1)	1180 micron	100	100 -	Yes
(2)	850 micron	99	95 - 100	Yes
(3)	600 micron	64	55 - 75	Yes
(4)	425 micron	17	15 - 35	Yes
(5)	300 micron	03	0 - 5	Yes
2.	Appearance	The beads are transparent, clean, dry, free flowing, and free from bubbles and foreign matter	The beads shall be transparent, clean, dry, free flowing, and free from bubbles and foreign matter	Yes
3.	Roundness (%)	95	shall contain not less than 80 % by wt of true spheres	Yes
4.	Specific Gravity (g/cm³)	4.30	4.00 to 4.50	Yes

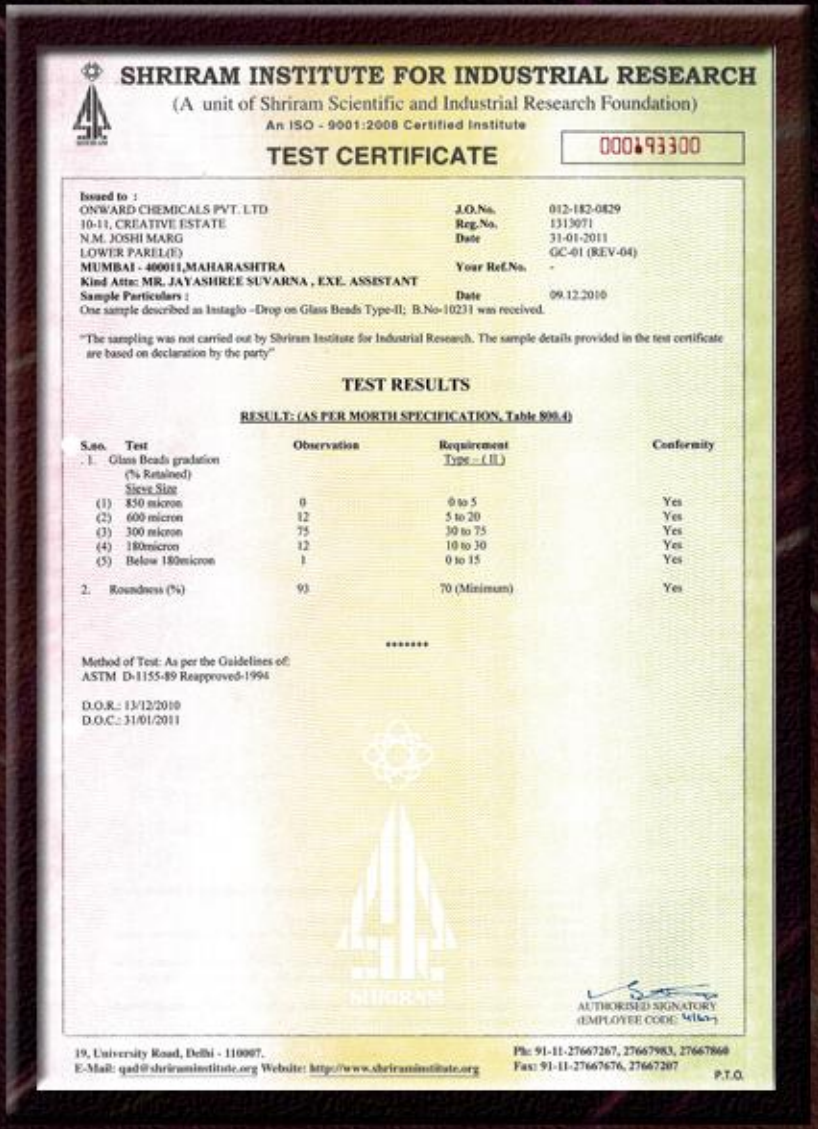
*****

D.O.R.: 08/05/2014
D.O.C.: 19/05/2014

AUTHORISED SIGNATORY
(EMPLOYEE CODE 4062)

19, University Road, Delhi - 110007.
E-Mail: sridlhi@vsnl.com Website: http://www.shriraminstitute.org
Ph: 91-11-27667267, 27667983, 27667860
Fax: 91-11-27667676, 27667207
P.T.O.

Certification | plus9beads & Instaglo Drop on Beads



SHRIRAM INSTITUTE FOR INDUSTRIAL RESEARCH

(A unit of Shriram Scientific and Industrial Research Foundation)

An ISO - 9001:2008 Certified Institute

TEST CERTIFICATE 00093300

Issued to :
ONWARD CHEMICALS PVT. LTD
10-11, CREATIVE ESTATE
N.M. JOSHI MARG
LOWER PAREL(E)
MUMBAI - 400011,MAHARASHTRA
Kind Attn: MR. JAYASHREE SUVARNA , EXE. ASSISTANT
Sample Particulars :

J.O.No. 012-182-0829
Reg.No. 1313071
Date 31-01-2011
GC-01 (REV-04)
Your Ref.No. -
Date 09.12.2010

One sample described as Instaglo -Drop on Glass Beads Type-II; B.No-10231 was received.

"The sampling was not carried out by Shriram Institute for Industrial Research. The sample details provided in the test certificate are based on declaration by the party"

TEST RESULTS

RESULT: (AS PER MORTH SPECIFICATION, Table 800.4)

S.no.	Test	Observation	Requirement Type - (II)	Conformity
1.	Glass Beads gradation (% Retained)			
	Sieve Size			
(1)	850 micron	0	0 to 5	Yes
(2)	600 micron	12	5 to 20	Yes
(3)	300 micron	75	30 to 75	Yes
(4)	180micron	12	10 to 30	Yes
(5)	Below 180micron	1	0 to 15	Yes
2.	Roundness (%)	93	70 (Minimum)	Yes

****

Method of Test: As per the Guidelines of:
ASTM D-1155-89 Reapproved-1994

D.O.R.: 13/12/2010
D.O.C.: 31/01/2011

AUTHORISED SIGNATORY
(EMPLOYEE CODE: 5160)

19, University Road, Delhi - 110007.
E-Mail: qad@shriraminstitute.org Website: http://www.shriraminstitute.org

Ph: 91-11-27667267, 27667983, 27667868
Fax: 91-11-27667676, 27667207

P.T.O.

FORM NO :NTH/ALP/T/5

भारत सरकार
Government of India
राष्ट्रीय परीक्षण शाला (पूर्वी क्षेत्र)
National Test House (Eastern Region)
11/1 जजेस कोर्ट रोड, अलीपुर, कोलकाता - 700 027
11/1, Judges' Court Road, Alipore, Kolkata - 700 027

TEST CERTIFICATE INTERNATIONAL REPORT

Test Certificate No	Date of Issue	Code No	Page	No of Pages
	24/04/2014	13980710088545	3	3

Sl. No.	Test Name	Test Result	Limit
6	Retained on 425 micron Sieve,per cent by mass	71 %	65-85 per cent
7	Appearance	White Powder	White powder
8	Specific weight, gm/c.c	4.2 gm/cc	4.5 (+/-) 0.3
9	Bulk weight, gm/c.c	2.5 gm/cc	2.5 (+/-) 0.3

Nil

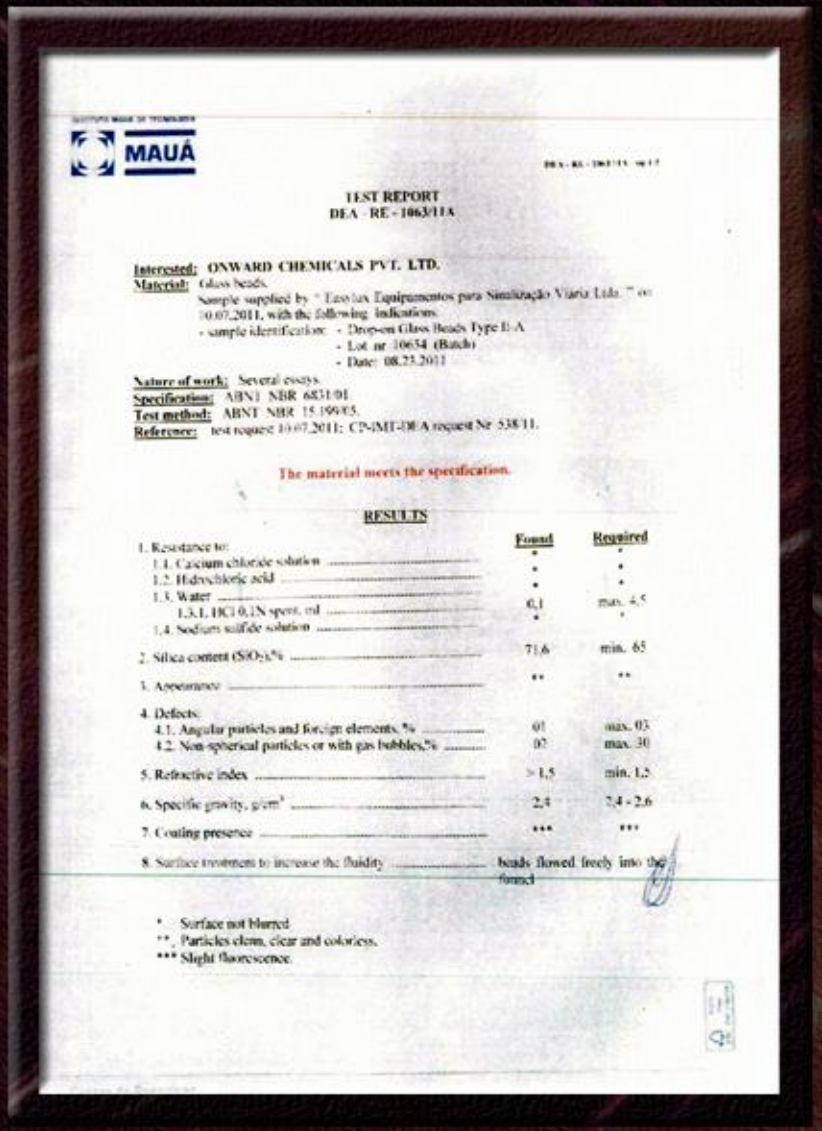
Remarks: In respect of the tests carried out, the sample meets the requirements of the customer's specification

Tested By
Vinod Kumar A. Ram
SO Chemical

Checked By
Moni Sankar Mitra
Scientist-SC(Chemical)

Approved By
Rama Sankar De
Scientist-SD(Chemical)

Certification | plus9beads & Instaglo Drop on Beads



MAUÁ

TEST REPORT
DEA - RE - 1063/11A

Interested: ONWARD CHEMICALS PVT. LTD.
Material: Glass beads.
Sample supplied by " Easolux Equipamentos para Sinalização Viária Ltda. " on 30.07.2011, with the following indications:
- sample identification: - Drop-on Glass Beads Type II-A
- Lot nr 10654 (Batch)
- Date: 08.23.2011

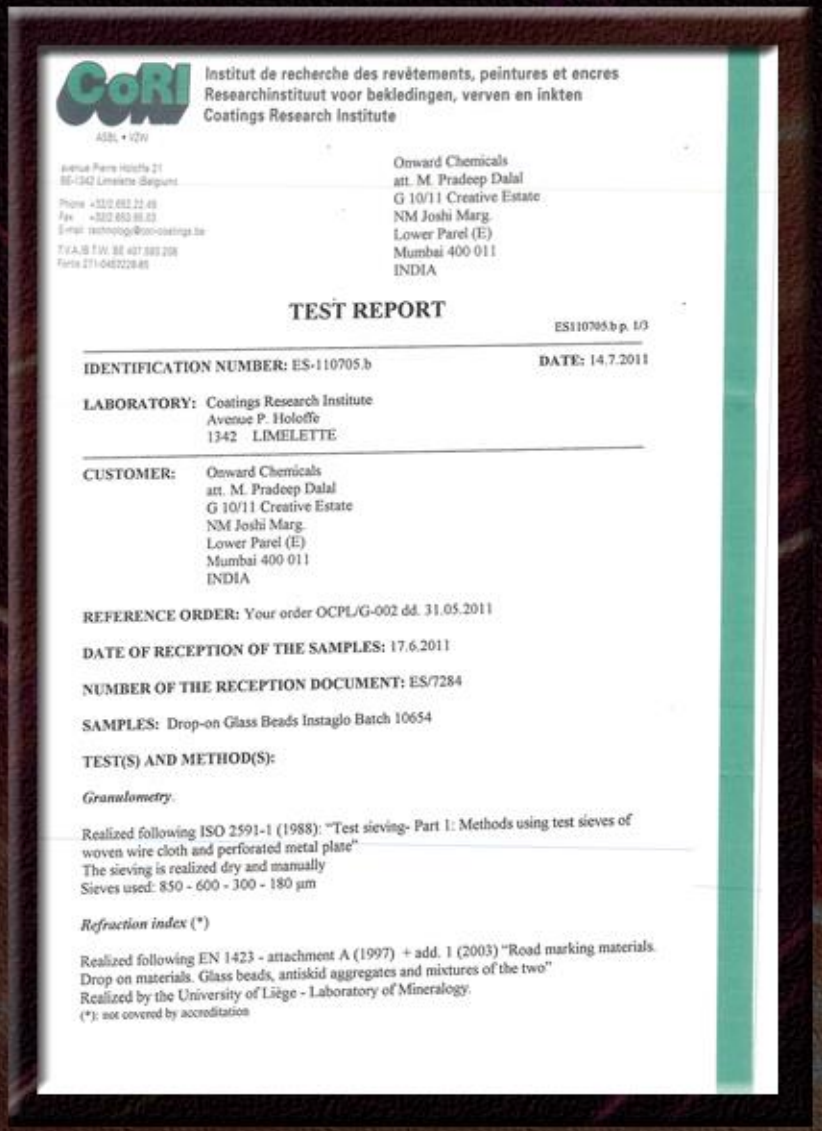
Nature of work: Several essays.
Specification: ABNT NBR 6831/01.
Test method: ABNT NBR 15.199/05.
Reference: test request 10.07.2011; CP-IMT-28/A request Nr 538/11.

The material meets the specification.

RESULTS

	Found	Required
1. Resistance to:		
1.1. Calcium chloride solution	*	*
1.2. Hydrochloric acid	*	*
1.3. Water	0,1	max. 4,5
1.3.1. HCl 0,1N spent, ml	*	*
1.4. Sodium sulfide solution		
2. Silica content (SiO_2),%	71,6	min. 65
3. Appearance	**	**
4. Defects:		
4.1. Angular particles and foreign elements, %	01	max. 03
4.2. Non-spherical particles or with gas bubbles,%	02	max. 30
5. Refractive index	> 1,5	min. 1,5
6. Specific gravity, g/cm³	2,4	2,4 - 2,6
7. Coating presence	***	***
8. Surface treatment to increase the fluidity	beads flowed freely into the funnel	

* Surface not blurred
** Particles clean, clear and colorless.
*** Slight fluorescence.



CoRI
ASBL • VZW

Institut de recherche des revêtements, peintures et encres
Researchinstituut voor bekledingen, verven en inkten
Coatings Research Institute

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Fax +32/2 653 66 03
E-mail: technology@cori-coatings.be
T.V.A./B.T.W. BE 407 593 208
Fortis 271-0482228-85

Onward Chemicals
att. M. Pradeep Dalal
G 10/11 Creative Estate
NM Joshi Marg
Lower Parel (E)
Mumbai 400 011
INDIA

TEST REPORT

ES110705.b p. 1/3

IDENTIFICATION NUMBER: ES-110705.b **DATE:** 14.7.2011

LABORATORY: Coatings Research Institute
Avenue P. Holoffe
1342 LIMELETTE

CUSTOMER: Onward Chemicals
att. M. Pradeep Dalal
G 10/11 Creative Estate
NM Joshi Marg
Lower Parel (E)
Mumbai 400 011
INDIA

REFERENCE ORDER: Your order OCPL/G-002 dd. 31.05.2011

DATE OF RECEPTION OF THE SAMPLES: 17.6.2011

NUMBER OF THE RECEPTION DOCUMENT: ES/7284

SAMPLES: Drop-on Glass Beads Instaglo Batch 10654

TEST(S) AND METHOD(S):

Granulometry

Realized following ISO 2591-1 (1988): "Test sieving- Part 1: Methods using test sieves of woven wire cloth and perforated metal plate"
The sieving is realized dry and manually
Sieves used: 850 - 600 - 300 - 180 µm

Refraction index (*)

Realized following EN 1423 - attachment A (1997) + add. 1 (2003) "Road marking materials. Drop on materials. Glass beads, antiskid aggregates and mixtures of the two"
Realized by the University of Liège - Laboratory of Mineralogy.
(*): not covered by accreditation

Certification | plus9beads & Instaglo Drop on Beads

Höhere Bundes-Lehr- und Versuchsanstalt für chemische Industrie
1170 Wien, Rosensteingasse 79

Akkreditierung Austria
A
0147
ISO/IEC 17025

Testing Institute
at the Higher Federal Teaching and Testing Institute for the Chemical Industry

Accredited Laboratory

Test Report

About

Airport Beads

Acc. to TT-B-1325 D Type III 300-850µm

Order No.: A.L. 32/2016
Protocoll No.:
Customer: **swarco** M. SWAROVSKI Gesellschaft m.b.H.
Adress: 3300 Amstetten, Industriestraße 10
Date and reference: June 28th 2016 Mr. Jürgen Höller
Order received: July 1st 2016
Sample received: July 1st 2016

cable adress
Bundeschemie
1170 Vienna, Rosensteingasse 79

Phone:
+043-1-486 14 80, 486 14 89
FAX
+043-1-489 03 59

Postsparkassenkonto
Wien 5030.862

According to the letter dated June 28th 2016 a verification of the criteria listed in TT-B-1325 D was carried out between July 1th and 11th.

1. Sample designation: Airport Beads

Acc. to TT-B-1325 D Type III 300-850µm (Lot. 1650323)

2. Test parameters

Tests according to TT-B-1325D

Characteristics	Requirement Paragraph	ASTM Method	Test Methode Paragraph
2.1. Appearance	3.2.1	---	4.3.1
2.2. Roundness	3.2.2	D 1155	4.3.2
2.3. Index of refraction	3.2.3	---	4.3.3*)
2.4. Specific gravity	3.2.4	---	4.3.4
2.5. Gradation	3.2.5	D 1214	4.3.5
2.6. Resistance to acid	3.2.6	---	4.3.6
2.7. Resistance to calcium chloride	3.2.7	---	4.3.7
2.8. Resistance to sodium sulfide	3.2.8	---	4.3.8
2.9. Water resistance	3.2.9	---	4.3.9

*) due to of the toxic properties of the liquids for the immersion methode a Metricon Model 2012 Prism Coupler was used alternatively.

Certification | plus9beads & Instaglo Drop on Beads

3. Results

Property	Requirements (required value)				Results (actual value)
3.1. Appearance	The beads shall be transparent, clean, dry, free flowing, and free from bubbles and foreign matter.				complying with requirement
3.2. Roundness	> 80%				complying with requirement
3.3. Index of refraction	1,90 – 1,93				1,91
3.4. Specific gravity	4,00 – 4,50				4,01
3.5. Gradation	U.S. Sieve	Microns	Min passing	Max passing	Passing [percent by weight]
	16	1180	100	---	100
	20	850	95	100	98,0
	30	600	55	75	67,1
	40	425	15	35	29,3
	50	300	0	5	0,6
3.6. Resistance to acid	the beads shall not develop any surface haze or dulling				complying with requirement
3.7. Resistance to calcium chloride	the beads shall not develop any surface haze or dulling				complying with requirement
3.8. Resistance to sodium sulfide	the beads shall not develop any surface haze or dulling				complying with requirement
3.9. Water resistance	the beads shall not develop any surface haze or dulling < 4,5 mL of 0,1 N hydrochloric acid shall be used in the titration				complying with requirement 0,4 mL used

Airport Beads V.1.0 AL 32/2016

4. Result of tests

All requirements demanded by TT-B-1325 D Type III are met.

Vienna, July 12th 2016

Höhere Bundes- Lehr- und Versuchsanstalt für chemische Industrie

Signature of person in charge

Prof. Dipl.-Ing. Dr. Fred SCHEUER

Legal Information:

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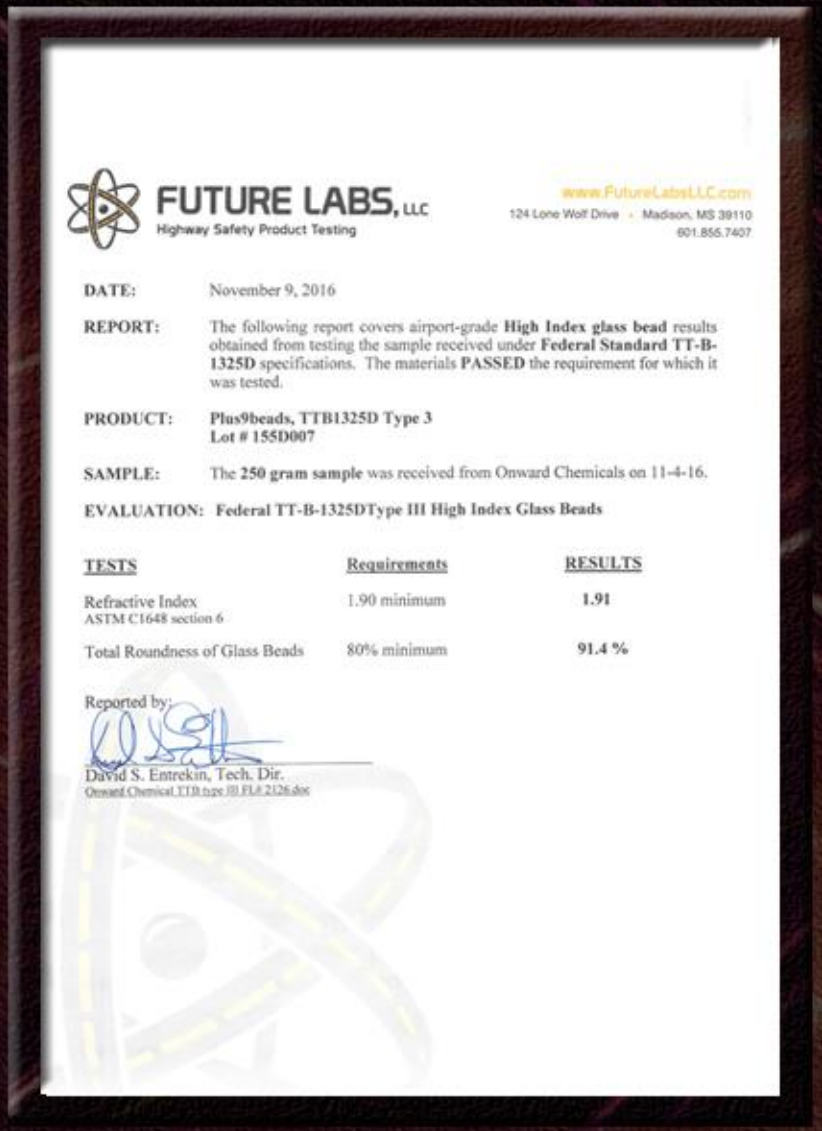
4. The undersigned signatories confirm, according to AkkG 2012 and the additional provisions of the accredited testing, inspection and certification body, that no reasons for bias or partiality exist.

Certification | plus9beads & Instaglo Drop on Beads



FUTURE LABS, LLC
Highway Safety Product Testing

www.FutureLabsLLC.com
124 Lone Wolf Drive · Madison, MS 39110
601.855.7407

DATE: November 9, 2016

REPORT: The following report covers airport-grade **High Index glass bead** results obtained from testing the sample received under **Federal Standard TT-B-1325D** specifications. The materials **PASSED** the requirement for which it was tested.

PRODUCT: **Plus9beads, TTB1325D Type 3**
Lot # 155D007

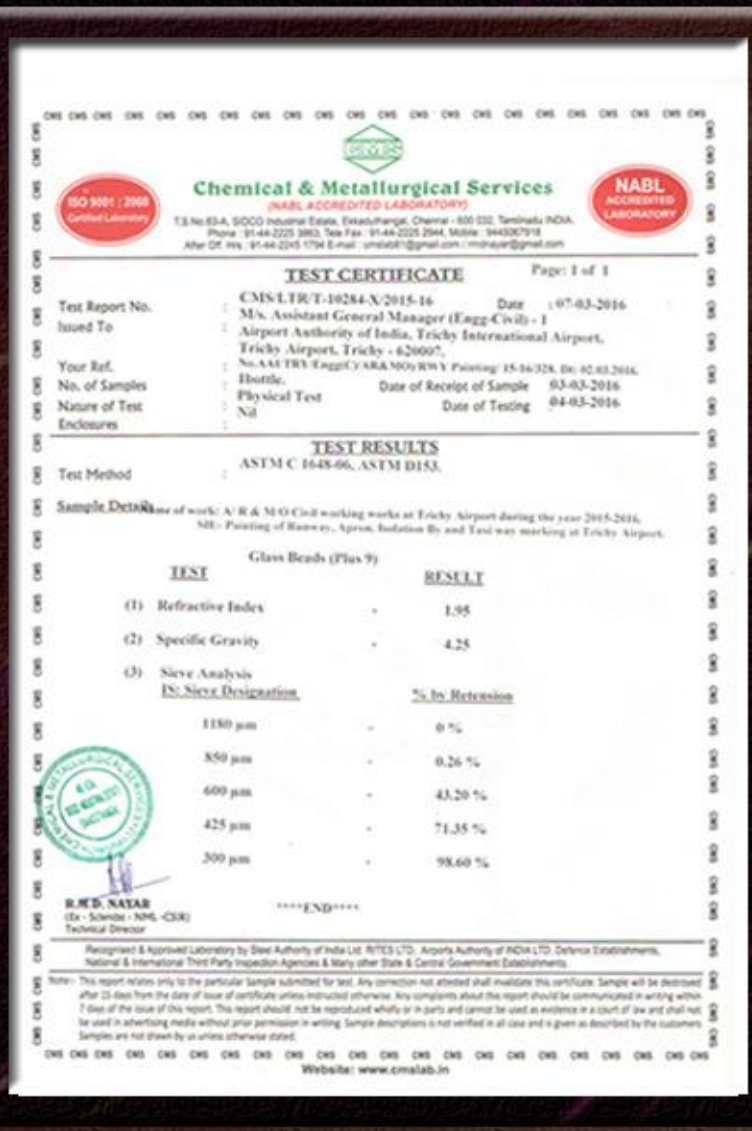
SAMPLE: The **250 gram sample** was received from Onward Chemicals on 11-4-16.

EVALUATION: **Federal TT-B-1325DType III High Index Glass Beads**

TESTS	Requirements	RESULTS
Refractive Index ASTM C1648 section 6	1.90 minimum	**1.91**
Total Roundness of Glass Beads	80% minimum	**91.4 %**

Reported by:

David S. Entrekin, Tech. Dir.
Onward Chemical TTB type III FL# 2126.doc



Chemical & Metallurgical Services
(NABL ACCREDITED LABORATORY)
T.S.No.63-A, SIDCO Industrial Estate, Ekkaduthangal, Chennai - 600 032, Tamilnadu INDIA.
Phone : 91-44-2225 3863, Tele Fax : 91-44-2225 2944, Mobile : 9443067918
After Off. Hrs : 91-44-2245 1794 E-mail : cmslab81@gmail.com ; mdrajan@gmail.com

ISO 9001 : 2008 Certified Laboratory

NABL ACCREDITED LABORATORY

TEST CERTIFICATE

Page: 1 of 1

Test Report No. : CMS/LTR/T-10284-X/2015-16 Date : 07-03-2016
Issued To : M/s. Assistant General Manager (Engg-Civil) - I
Airport Authority of India, Trichy International Airport,
Trichy Airport, Trichy - 620007.
Your Ref. : No.AAI/TRY/Engg(C)/ARA/MOy/RWY Painting/ 15-16/328, Dt: 02.03.2016.
No. of Samples : Bottle, Date of Receipt of Sample 03-03-2016
Nature of Test : Physical Test Date of Testing 04-03-2016
Enclosures : Nil

TEST RESULTS

Test Method : ASTM C 1648-06, ASTM D153.

Sample Details : Name of work: A/ R & M/ O Civil working works at Trichy Airport during the year 2015-2016.
SR:- Painting of Runways, Apron, Isolation By and Taxi way marking at Trichy Airport.

Glass Beads (Plus 9)

TEST		RESULT
(1) Refractive Index	-	1.95
(2) Specific Gravity	-	4.25
(3) Sieve Analysis		
IS: Sieve Designation		% by Retension
1180 µm	-	0 %
850 µm	-	0.26 %
600 µm	-	43.20 %
425 µm	-	71.35 %
300 µm	-	98.60 %

R.M.D. NAYAR
(Ex - Scientist - NML -CSIR)
Technical Director

*****END*****

Recognised & Approved Laboratory by Steel Authority of India Ltd. RITES LTD., Airports Authority of INDIA LTD. Defence Establishments, National & International Third Party Inspection Agencies & Many other State & Central Government Establishments.

Note:- This report relates only to the particular Sample submitted for test. Any correction not attested shall invalidate this certificate. Sample will be destroyed after 15 days from the date of issue of certificate unless instructed otherwise. Any complaints about this report should be communicated in writing within 7 days of the issue of this report. This report should not be reproduced wholly or in parts and cannot be used as evidence in a court of law and shall not be used in advertising media without prior permission in writing. Sample descriptions is not verified in all case and is given as described by the customers. Samples are not drawn by us unless otherwise stated.

Website: www.cmslab.in

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- Hence, it is recommended to use airless spray machines at the airports as it provides substantial benefits such as:
- Produces an even and uniform film thickness at the required coverage [rate] and markings can be applied of uniform cross sections and clear-cut edges without running or spattering and without over spray.
- Dispensing of glass beads is uniform
- Achieves precise and consistent lines
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ITS Coatings PVT. LTD.

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- Mangalore
- Rajahmundry
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- Vishakhapatnam

SEAPORTS / CFS

- GTI, MUMBAI
- ITD Cementation, DP World Project, Nhava Sheva Port
- Navkar Corporation Ltd. (Container Freight Station), Mumbai

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