



**BUREAU
VERITAS**

Certificate
Of
Conformance Of HDPE Pipe

1. This is to certify that on the basis of Assessment Audit of M/s International Industries Ltd (IIL) conducted on 17th.March, 2017 Refer Assessment Report no.01 BV Reference no.PAK-BV-17-0160. Issued on 31st March, 2017

M/S International Industries Ltd found capable for the manufacturing of PE pipes. They have Competent man power and sufficient Manufacturing and Testing facilities for the manufacturing of Poly Ethylene pipes as per the requirements of EN12201-2:2011 and ISO 4427-2 Standards.

2. 160mm diameter HDPE pipe SDR 11 PN 16 sample withdrawn from finished product at IIL. Same delivered to M/s Plastic Technology Centre (PTC) by BV surveyor.

“This is to certify that on the basis of test report furnished by the M/S Plastics Technology Centre, HDPE pipes of M/S International Industries Limited conforms the requirement of NSF/ANSI-61 as there is no evidence of volatile organic compounds, regulated metals^a & Phenolics found.”

^a antimony, arsenic, barium, beryllium, cadmium, copper, lead, mercury, selenium, thallium.

Note: All the current relevant standards available at manufacturing facility

Abul Kalam Siddiqui
C.E.O
Bureau Veritas Pakistan Pvt Ltd
Date of issue: 06th May, 2017

Stamp



Bureau Veritas Pakistan (Pvt.) Ltd.

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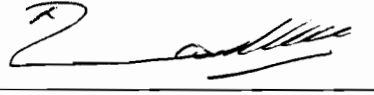


CERTIFICATE

This is to certify that on the basis of Assessment Audit of M/s International Industries Ltd (IIL) conducted on 17th.March, 2017 Refer Assessment Report no.01 BV Reference no.PAK-BV-17-0160. Issued on 31st March, 2017

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All the current relevant standards available at manufacturing facility



Abul Kalam Siddiqui
C.E.O
Bureau Veritas Pakistan Pvt Ltd
Date of issue: 31st March, 2017



Stamp:


 INTERIM
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ASSESSMENT REPORT No.01

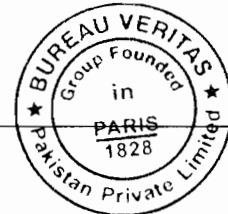
BV Job No. PAK-BV-40-17-0160

PROJECT: Assessment of M/s International Industries Ltd for Manufacturing of Polyethylene Pipes as per EN12201-2:2011 and ISO 4427-2 Standards.	Ref:-- Email
BV Client: M/s International Industries Limited	P/o nr: -- (client to BV)
Manufacturer: M/s International Industries Limited	P/o nr:-- (client to Manufacturer)
Inspection requested by: Mr. Ayaz Ahmed Khan	

SUPPLY / SUBJECT OF INSPECTION	ITEM / TAG Nr	QTY
Assessment of M/s International Industries Ltd for Manufacturing of Polyethylene Pipes as per EN12201-2:2011 and ISO 4427-2 Standards.	---	01

DOCUMENTS OF REFERENCE : See continuation sheet for additional documents: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
Title	Reference n°	Rev.	Approved by	Date
EN12201-2:2011	--	--	--	2011
ISO 4427-2	--	--	--	2007

INSPECTIONS :	Results of inspection : <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory
<p><u>Inspection place & Date or Period:</u> International Industries Ltd. Survey No. 405-406 Rehri Road, Landhi 17th March, 2017</p> <p><u>Stage of inspection :</u> <input type="checkbox"/> Before manufacturing <input checked="" type="checkbox"/> During manufacturing <input checked="" type="checkbox"/> Final <input type="checkbox"/> Packing</p> <p><u>Kind of inspection:</u> <input type="checkbox"/> Pre-inspection meeting <input type="checkbox"/> Witnessing tests <input type="checkbox"/> Final inspection <input checked="" type="checkbox"/> Document review <input checked="" type="checkbox"/> Expediting & vendor assessment <input type="checkbox"/> Packing (for details see continuation sheet)</p> <p><u>Stamping :</u> <input checked="" type="checkbox"/> No <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/></p>	<p><u>Non Conformities Reports (NCR):</u> o NCR's issued during reported period : NIL</p> <p>o List of outstanding NCR's : NIL</p> <p><u>Main Conclusions & Remarks:</u> (for details see continuation sheet) M/s International Industries Ltd is CAPABLE for Manufacturing of Polyethylene Pipes as per EN12201-2:2011 and ISO 4427-2 Standards.</p> <p><u>Next visit scheduled:</u> NIL</p>



ASSESSMENT REPORT No.01

BV Job No. PAK-BV-40-17-0160

Description of the inspections carried out:

➤ Introduction

The undersigned surveyor to Bureau Veritas acting within the scope of General Conditions which regulate the intervention of the society-Industry Division at the request of M/s International Industries Ltd, attended the subject site on 17th March, 2017 for the purpose Assessment for Manufacturing of Polyethylene Pipes as per EN12201-2:2011 and ISO 4427-2 Standards.

Facility Details

Total No. of employees:	Approximately 40
QA/QC	03
Product	HDPE 100 Pipes (for potable water)
Production Capacity	Dia 12mm to 125mm, 360 Tons/Month Dia 40mm to 250mm, 504Tons/Month Dia 20 mm to 63 mm, 230 Tons/Month Dia 160mm to 630mm, 540 Tons/Month Dia 560mm to 1600mm, 1296 Tons/Month
Production capacity per month/Day	As mentioned above
Any overseas material procurement	Yes – UAE and Europe
Subcontracting	No

Certifications

Certification	Awarding Agency	Valid upto
ISO 9001: 2008	M/s Lloyd's Register Quality Assurance	14 th September, 2018
ISO 14001:2004	M/s Lloyd's Register Quality Assurance	14 th September, 2018
OHSAS 18001:2007	M/s Lloyd's Register Quality Assurance	31 st December, 2018

Product Line:
Polyethylene Pipe

Date of Establishment	2005
Facility Departmental Head	Mr. Nasir Raja
HOD Manufacturing	Mr. Ayaza Ahmed Khan
MR (QMS) Manager	Mr. Naeem ul Hassan Naqvi
Production Manager	





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ASSESSMENT REPORT No.01

BV Job No. PAK-BV-40-17-0160

Attendees:

Bureau Veritas Team

Mr. Fahim Uddin

(Manager IVS- Bureau Veritas Pakistan)

Mr. Ather Ali

(Sr. Surveyor- Bureau Veritas Pakistan)

III Team

Mr. Ayaz Ahmed Khan

(Management Representative QMS)

Mr. Nasir Arif Raja

(Senior manager PE Operations)

Mr. Sharjeel Mustafa

(Assistant Manager Quality Assurance)

➤ **BV Scope of Work**

- Assessment of M/s International Industries Ltd for Manufacturing of Polyethylene Pipes as per EN12201-2:2011 and ISO 4427-2 Standards.
- Witness of manufacturing / testing capabilities.

➤ **Applicable Documents & Status of Approval**

EN12201-2:2011
ISO 4427-2

➤ **Manufacturing Progress Status** (Detail of manufacturing activities in detail)

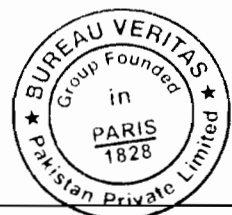
None

➤ **Details of inspection activities carried out with respect to scope of work.**

Documents Review:

Following documents reviewed:

Detail of production machinery
Details of Laboratory equipment
Calibration record of Lab and Measuring equipment.
MTC's of Raw Material
Quality Control documents.
SOP's of manufacturing / testing / Process flow diagram.





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ASSESSMENT REPORT No.01

BV Job No. PAK-BV-40-17-0160

Randomly selected Final Quality Assurance and Release Report reviewed and following noted:

Product:	MEGAFLO HDPE Water Pipe	Line:	C-125
Size:	20 x 1.80 (SDR 13.6) PN-12.5 PE-100	Lot #:	1316482
Material:	Brouge HDPE PE-100 Black	Grade:	HE3490-LS
Date:	15-03-2017	Work Order #	107/02/2017

S.NO	Test	Reference Standard	Conditioning Time and Temperature	Requirement	Actual	Remarks
1	MFI	EN- ISO 133	04 Hrs.@24 °C	*COA ± 20%	24 gm/10 min	Satisfactory
2	Density	ISO 1183	04 Hrs.@24 °C	*COA ± 30%	0.951 gm/cm ³	
3	Tensile at yield	ASTM D-683	04 Hrs.@23 °C	*COA ± 10 %	25.18 Mpa	
4	Elongation	EN-ISO 6259	04 Hrs.@23 °C	≥350 %	1013.9 %	
5	Heat Reversion	EN ISO 2505	04 Hrs.@23 °C	≤ 3 %	1.05 %	
6	Short Term Pressure	EN ISO 1167	100 Hrs in water at 20 °C	12 bar at 20 °C for 100 hrs	Stable	
*COA: Condition of Approval						

Daily Production, Stoppage, Wastage and Quality Report (Document Ref # IIL-F-09D-03):

Product:	MEGAFLO HDPE Water Pipe	Line:	C-125
Size:	20 x 1.86 x110 m (SDR 13.6) PN-12.5 PE-100	Work Order #	00107/02/2017
Date:	11-03-2017		

S.NO	Coil # / Bundle #	Length (m)	Weight (kg)	Outer Dia (mm)		Wall Thickness (mm)		Roundness (Max 1.2 mm)	Remarks
				Min (20)	Max (20.3)	Min (1.8)	Max (2.2)		
1	249-256	800	88	*20.15		*1.88		0.96	Within Limits
2	257-264	800	88	*20.2		*1.93		0.7	
3	265-272	800	88	*20.2		*1.96		0.73	
4	273-280	800	88	*20.15		*1.91		0.78	
5	281-288	800	88	*20.15		*1.88		0.65	
6	289-296	800	88	*20.2		*1.92		0.6	
7	297-300	400	44	*20.15		*1.96		0.6	
*Mean Value									




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ASSESSMENT REPORT No.01

BV Job No. PAK-BV-40-17-0160

Visual Inspection:

Production area visited, all machinery found in working order.
 Manufacturing process of HDPE-100 pipe size 110mm diameter PN8 SDR 21 manufacturing standard DIN8074/75 colour Black with blue stripes witnessed. All quality control process were being followed.

DETAIL OF PRODUCTION MACHINERY:

Name Of Plant Machinery/Equipment	Brand/Origin	Year Of Installation	Working Capacity	Tons Per Month
Extrusion C -125 (Proton-75)	Cincinnati Extrusion Austria	2006	12 mm to 125 mm Output 500 Kg/Hr. Max Speed 25 m / min	360
Extrusion C -250 (Monos-75)	Cincinnati Extrusion Austria	2007	40 mm to 250 mm Output 700 Kg/Hr. Max Speed 15 m/min	504
Extrusion C -63 (Tolos-60)	Cincinnati Extrusion Austria	2009	20 mm to 63 mm Output 320 Kg/Hr. Max Speed 30 m/ min	230
Extrusion C -630 (Monos Plus-60)	Cincinnati Extrusion Austria	2012	160 mm to 630 mm Output 750 Kg/Hr. Max Speed 05 m/ min	540
Extrusion C -1600 (Sol EX-90 Plus 40-C)	Cincinnati Extrusion Austria	2016	560 mm to 1600 mm Output 1800 Kg/Hr. Max Speed 1.6 m/min	1296

MARKING:

Company Name: International Industries Ltd
Type: HDPE Water Pipe
Manufacturing Standard: DIN 8074/75
Diameter: 110 mm
PN- 8
SDR: 21
Lot No. 1703170

Testing Laboratory :

Following Equipment available for HDPE Pipes Testing

1. Material Flow Index
2. Density
3. Heat Reversion
4. Tensile
5. Hydro Static Test



ASSESSMENT REPORT No.01

BV Job No. PAK-BV-40-17-0160

All relevant calibrated test and measuring equipment were available. Following test witnessed :

1. Tensile Test

Tensile test of PPE 100 Yellow colour for gas pipe witnessed, following results obtained.

Stress at Yield: 16.264MPa

Stress at Peak: 25.186 MPa

Strain at Break: 1363.360 %

Elongation at Break: 340.840mm

Note: Results found in acceptable limits as stated in relevant standards

2. Density

Density measurement of PE 100 black colour witnessed, result was 0.956 g/cm³ (Required >0.93 g/cm)

3. Melt Mass Flow Rate

Melt mass flow rate testing witnessed of PE 100 colour Black, result was 0.24 gm/10min (Required >0.2 to 1.44gm/10min)

4. Hydrostatic Testing

Hydrostatic test of PE 100 pipe having diameter 110mm at 60 Bar and 20°C witnessed.

➤ **Surveillance with reference to ITP**

As per provided scope of work

➤ **Conclusion / Results of Assessment**

On the basis of available equipment/Qualified manpower and witness of manufacturing process where all protocols were maintained and adequate testing facilities. M/s International Industries Ltd is **CAPABLE** for Manufacturing of Polyethylene Pipes as per EN12201-2:2011 and ISO 4427-2 Standards.

➤ **Problems pending / Areas of Concern**

None

ANNEXES Yes (Total number of pages: 08) No

Annex:-01: Photographs

Annex:-02: M/s IIL Master Process Flow Chart

Annex:-03: M/s IIL Type of Measurement used during Production Process

Annex:-04: Certificate of Analysis of Raw Material by M/s Borouge & Material Inspection & Release report By M/s IIL

Annex:-05: Daily Production, Stoppage, wastage & Quality report

Annex:-06: Final Quality Assurance & Release Report

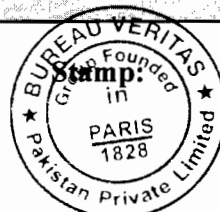
Audited By:

- Muhammad Fahim Uddin (Manager IVS & Industrial Inspection)
- Ather Ali (Sr. Industrial Surveyor)

Validated By : Abul Kalam Siddiqui

C.E.O Bureau Veritas Pakistan **Signature:** 

Date of issue: 31st March, 2017

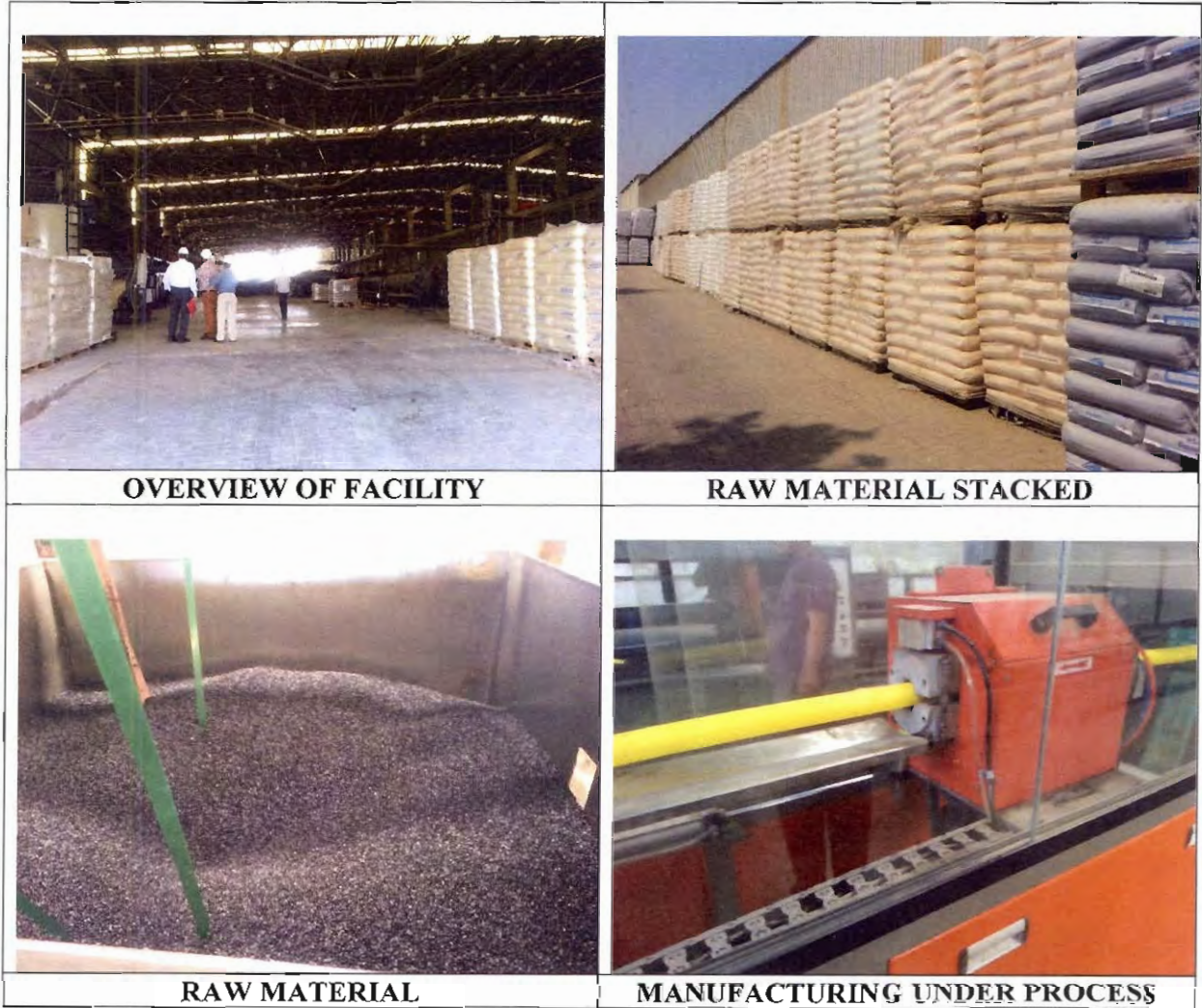


ANNEX-01

ASSESSMENT REPORT No.01

BV Job No. PAK-BV-40-17-0160

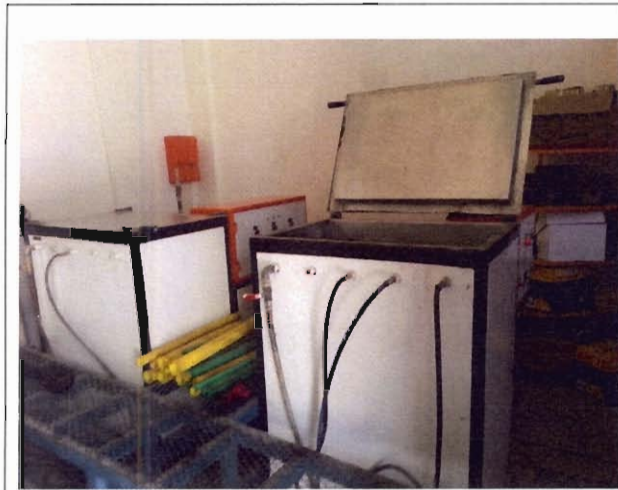
PHOTOGRAPHS



ASSESSMENT REPORT No.01

BV Job No. PAK-BV-40-17-0160

PHOTOGRAPHS



HYDRO TEST EQUIPMENT



TENSILE TEST MACHINE



DENSITY MEASUREMENT



PLASTO METER

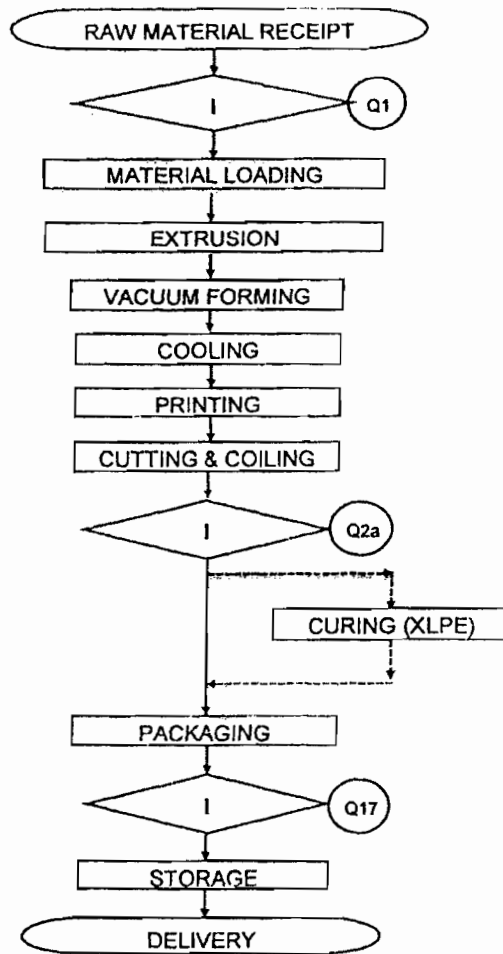


ANNEX-02



INTERNATIONAL INDUSTRIES LIMITED
MASTER PROCESS FLOW CHART
PLASTIC DIVISION

12.7 JUL 2012



LEGEND:
 PROCESS []
 QUALITY INSPECTION { I }

REVIEWED BY: [Signature]
 HOD QA (PE)

VERIFIED BY: [Signature]
 HOD PE DIVISION

APPROVED BY: [Signature]
 CHIEF EXECUTIVE OFFICER

UNCONTROLLED

ANNEX-03

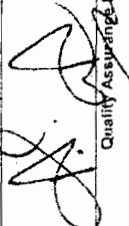
(4)

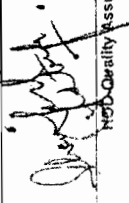
TYPE OF MEASUREMENTS MADE AT IIL

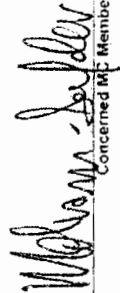
PLANT: Plastic Plant

REPORT DATE: 05-May-2016

Measurements To Be Made	Appropriate Type of Equipment	Code Allotted	Nature of Equipment	Capacity	Tolerance	Calibration Frequency	Calibration Responsibility	Calibrate (In-house) [Outsource]	Extent of Usage	Environment of Usage
Dimension of End Product	Vernier Caliper	V	Digital	0 ~ 150 mm	±0.02 mm	2 Month	Quality Inspector	In-house	Frequently	Testing Lab
Dimension of End Product	Vernier Caliper	V	Digital	0 ~ 200 mm	±0.02 mm	2 Month	Quality Inspector	In-house	Frequently	Testing Lab
Dimension of End Product	Vernier Caliper	V	Analog	0 ~ 300 mm	±0.02 mm	2 Month	Quality Inspector	In-house	Frequently	Production Plant
Dimension of End Product	Micrometer	M	Analog	0 ~ 25 mm	±0.02 mm	2 Month	Sr. Shift Incharge QA	In-house	Frequently	Testing Lab
Mean Dia of Pipe	Pie-Tape	PT	Analog	15 ~ 50 mm	±0.02 mm	Discard Every Year	Quality Inspector	Not Applicable	Frequently	Production Plant
Mean Dia of Pipe	Pie-Tape	PT	Analog	26 ~ 300 mm	±0.02 mm	Discard Every Year	Quality Inspector	Not Applicable	Frequently	Production Plant
Mean Dia of Pipe	Pie-Tape	PT	Analog	50 ~ 600 mm	±0.02 mm	Discard Every Year	Quality Inspector	Not Applicable	Frequently	Production Plant
Density	Densimeter	DM	Digital	0 ~ 300 gm	± 0.03 g	1 Year	Sr. Shift Incharge QA	Out Source	Occasionally	Testing Lab
Weight Measuring	Weight Balance	WS	Digital	0.01 ~ 10 kg	± 1%	1 Year	Sr. Shift Incharge QA	Out Source	Occasionally	Testing Lab
Environmental Stress Cracking	ESCR	ESCR	Digital	0 ~ 50 °C	± 1%	1 Year	Sr. Shift Incharge QA	Out Source	Occasionally	Testing Lab
Melt Flow Index	MFI	MFI	Digital	0 ~ 250 °C	± 1%	1 Year	Sr. Shift Incharge QA	Out Source	Occasionally	Testing Lab
Tensile Strength	Testometric	TM	Digital	10 kN	± 1%	1 Year	Sr. Shift Incharge QA	Out Source	Occasionally	Testing Lab
Pressure Testing	Hydro Testing Machine	HT	Digital	0 ~ 100 bar	0.50%	1 Year	Sr. Shift Incharge QA	Out Source	Occasionally	Hydro Testing Lab
Drying Oven	Oven	DO	Digital	30 ~ 210 °C	± 1°C	1 Year	Sr. Shift Incharge QA	Out Source	Occasionally	Hydro Testing Lab
Vacuum Measuring	Vacuum Gauge	VG	Analog	0 ~ 1 Bar	± 0.01 ba	1 Year	Sr. Shift Incharge Maint.	Out Source	Frequently	Production Plant
Temperature Controlling	Temperature Controller	TC	Digital	0 ~ 300 °C	± 5 °C	1 Year	Sr. Shift Incharge Maint.	In-house	Frequently	Production Plant

Prepared by:  Quality Assurance Engineer

Verified by:  Head Quality Assurance

Approved by:  Concerned IIL Member

ANNEX-04

CERTIFICATE OF ANALYSIS

International Industries Limited 101,
Beaumont Plaza, 10 Beaumont Road
P.O. BOX 4776, KARACHI, 75530,
PAKISTAN

Product	Date	Your Reference	Our Reference	Packaging
HD3490LS	21.11.2016	IIL/1611/1002	510052724	Bags
Batch 1315225	Production date 03.09.2016		Quantity 24,750,000 KG	
Property	Reference Test Method	Unit	Value	
Melt Flow Rate (190°C/5.0kg)	B192 (ISO-1133)	g/10 min	9.39	
Density	B292 (ISO-1183)	kg/m ³	960	
Carbon Black Content	B184 (ISO-6964)	%	3.2	
Disp/Carbon Black	B184 (ISO-18553)		2.5	
Oxidation Induction Time (210°C)	B182 (ISO-11357)	min	43	
Moisture Content	B187 (ISO-15512)	ppm	30	
Total Volatiles	B185 (EN12099)	ppm	160	
Batch 1316482	Production date 03.10.2016		Quantity 271,250,000 KG	
Property	Reference Test Method	Unit	Value	
Melt Flow Rate (190°C/5.0kg)	B192 (ISO-1133)	g/10 min	9.24	
Density	B292 (ISO-1183)	kg/m ³	960	
Carbon Black Content	B184 (ISO-6964)	%	3.23	
Disp/Carbon Black	B184 (ISO-18553)		2.5	
Oxidation Induction Time (210°C)	B182 (ISO-11357)	min	40	
Moisture Content	B187 (ISO-15512)	ppm	40	
Total Volatiles	B185 (EN12099)	ppm	180	

GOODS DESCRIPTION: BORSAPR HD3490-LS (HDPE PIPE COMPOUND)
LIT NUMBER: 005402160136

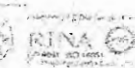
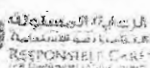
This Certificate conforms to EN ISO 9004, Inspection Certificate 1

Khaled Dhaleh
Khaled Dhaleh
Laboratory Manager



Abu Dhabi Polymers Company Limited

Borouge Pte Ltd
Integrated Refinery Complex of Borouge is certified against the requirements of ISO 9001, ISO 14001, SA8000 & API Q12001
Sheikh Khalifa Energy Complex 1, Borouge Tower 1 Corniche Road
P.O. Box 6951, Abu Dhabi, U.A.E
Tel: +971 2 7088 888 | Fax: +971 2 7088 999 | www.borouge.com
Borouge is a part of the ADNOC and Borealis group of companies





Raw Material Inspection and Release Report (Plastic)

Material: Borouge HDPE PE-100 BLACK PO#90039668 Date: 2/12/2016
Batch No.: 1316482 Shift: G
Grade: HE3490-L5

Sr. #	Test	Reference Standard	Result required	Result obtained	Pass/fail	Remarks
1	MFI	ISO-1133	0.24(±25%) g/10min.	0.24	Pass	C.O.A Attached
2	Density	ISO-1183	0.960(±25%) g/cc.	0.959	Pass	
3	Tensile strength	ISO-527	≥0.25 Mpa	25.78	Pass	
4	Elongation	ISO-527	≥750. (%)	926.1	Pass	
5	ESCR	-----	-----	-----	-----	-----

Prepared By: [Signature]
Incharge Lab PE

Note : On the Basis of above results, the Finished Product is released for Production

Yes No

Verified By: [Signature]
HOD QA

Dated: 02-12-2016

ANNEX-05



Daily Production, Stoppage, Wastage and Quality Report Of Polyethylene Pipe

Page #: 01
 Date: 11-03-17
 Size / Product: 201-86 X 1016 (MFG-AF10)
 Work Order #: 00107122/2017
 Shift: C Line: C-125
 Eccentricity: _____

Wastage:	Allowable	Actual	Varit	Weight:	Standard	Minimum	Maximum
Startup (kg)				Pipe Weight (gm / mtr)	0.110	0.10	0.121
During Pdn. (%)							

S.No.	Time	Coil No./ Bundle No.	Length (m)	Weight (kg)	Outer Dia (mm)						Wall Thickness (mm)						Roundness (mm)			Ovality %			Eccentricity %	marks	Non-Conformance Surface Defects									
					Min. A	B	C	D	Max. E	Mean	1	2	3	4	5	6	7	8	Maximum	Actual	Std.	Actual			Std.	Actual	Description	Key	Qty	WT (Kg)				
01		249-286	800	33										2.20	1.80	1.80	1.85	1.85	1.80	1.95	1.95	0.96	0.70	0.70		0								
02		250-286	800	33										2.20	1.85	1.85	1.90	1.90	1.85	1.95	1.95	0.70	0.70	0.70		0								
03		265-286	800	33										2.20	1.90	1.90	1.95	1.95	1.90	2.00	2.00	0.70	0.70	0.70		0								
04		273-286	800	33										2.20	1.95	1.95	2.00	2.00	1.95	2.05	2.05	0.70	0.70	0.70		0								
05		282-288	800	33										2.20	2.00	2.00	2.05	2.05	2.00	2.10	2.10	0.65	0.60	0.60		0								
06		289-296	800	33										2.20	2.05	2.05	2.10	2.10	2.05	2.15	2.15	0.60	0.60	0.60		0								
07		292-300	400	17										2.20	2.10	2.10	2.15	2.15	2.10	2.20	2.20	0.60	0.60	0.60		0								
																									Total		01		01					

Recording Frequency (API Pipes)
 OD = Once after every hour.
 WT = Once after every hour.
 Roundness = Once after every hour.
 Ovality = Once after 6 hours.
 Eccentricity = Once after every hour.

Inspected by: _____

Stoppage Report (10) NEARAFIO HDPE WATER PIPE 20x180 SDR-136 PN-12.5 PE-100 2017.03.17

Summary	Qty (m)	Wt. (kg)
a. Production Capacity	300	102
b. Actual acceptable Production	220	73
c. Variance	80	29
d. Total Non-Conforming pipe/roll	0	0
e. Total Purging	0	0
Grand-Total (10 - 42-2)	220	73

From	To	Total	Wastage	Reasons

Prepared by: _____
 QA Inspector

Reviewed by: _____
 Senior Shift Incharge (Production)

Verified by: _____
 Production Engineer / Designer

ANNEX-06



Final Quality Assurance and Release Report

Product: MEGAFLO HDPE Water Pipe
 Size: 20x1.80 (SDR-13.6) PN-12.5 PE-100
 Material: 8Nuge HDPE PE-100 BLACK
 Date: 15/03/2017

Line: C-125
 Lot No: 1316482
 Grade: HE3490-LS
 Work Order No: 10702/2017

Sr. #	Test	Reference Standard	Conditioning time & test temperature	Units	Result required	Result obtain	Pass/ Fail	Remarks
1	MFI	EN ISO-1133	04 hours @24°C	gm/10min	C.O.A ±20%	24	Pass	Ok
2	Density	ISO-1183	04 hours @24°C	gm/cc	C.O.A ±30%	0.951	Pass	Ok
3	Tensile strength at break	N/A	N/A					
4	Tensile at yield	ASTM D-638	04 hours @23°C	Mpa	C.O.A ±10%	25.18	Pass	Ok
5	Elongation	EN ISO-6259	04 hours @23°C	%	≥350	1013.9	Pass	Ok
6	ESCR	N/A						
7	Heat reversion	EN ISO-2505	04 hours @23°C	%	≤3	1.05	Pass	Ok
8	Impact test	N/A						
9	Short term pressure	EN ISO-1187	100 hours in water @20°C	Bar	12.0bar @20°C for 100h	Stable	Pass	Ok
10	Long term pressure	N/A						
11	Elevated temperature pressure	N/A						
12	Fusion test	N/A						
13	Squeeze-off test	N/A						
14	Stiffness test	N/A						
15	Degree of Cross-linking	N/A						

Only Applicable tests are performed w.r.t product type refer. IIL-W-10-16-12

1	Material Receiving Inspection Tests	IIL-F-10-01B	Done <input checked="" type="checkbox"/> Not Done <input type="checkbox"/>
2	In-Process Inspection	IIL-F-09C-03	Done <input checked="" type="checkbox"/> Not Done <input type="checkbox"/>
3	Final Quality Assurance Tests	IIL-F-10-01-03	Done <input checked="" type="checkbox"/> Not Done <input type="checkbox"/>

Note : On the Basis of above results, the Finished Product is released for Delivery

Yes

No

Prepared By:

Incharge Lab PE

Verified By:

HOD QA (Plastic)

Date: 15-03-2017



PLASTICS TECHNOLOGY CENTRE

Government of Pakistan, Ministry of Textile Industry



TEST REPORT

COPY

JOB NO. 2938/47/17

REPORT NO. 2938/2

DATED 25.04.2017

CLIENT'S NAME

M/s. Bureau Veritas.

ADDRESS

House # 177, Block 7/8, Karachi Memon Cooperative Housing Society, Karachi.

CONTACT PERSON

Mr. Ather Ali, Senior Surveyor CDG/TLD PHONE 021-111-786-013

REFERENCE NO.

e-Mail & Visiting Card

DATED 31-03.2017

SAMPLE DETAILS:

One sample of **HDPE Pipe, Diameter 160mm, SDR 11 PN 16**, Determination of Volatile Organic Compounds, Regulated Metals and Phenolics..

Average statistical readings are reported.

TEST RESULTS

Compounds

Values (ppm)

Volatile Organic Compounds (VOC;s)

Not Detectable

Regulated Metals*

Not Detectable

Phenolics

Not Detectable

Least Count of GC/MS Acid/Scan = 0.05 ppm

* Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Thallium

TARIQ JAMAL
SENIOR MANAGER

Tested as per Standard:- NSF 61-2013

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Also please see note on the back.



PLASTICS TECHNOLOGY CENTRE

Government of Pakistan, Ministry of Industries

ST-2/1, Sector 30, Korangi Industrial Area, P. O. Box 8297 Karachi-74900 Pakistan.

Tel : (92-21) 3506 6390, 3506 3589, 3506 8151-2, Fax : (92-21) 3506 0373

e-mail : ptc@cyber.net.pk

Receipt No. 14005

Date 04.04.2017

RECEIVED with thanks from Bureau Veritas

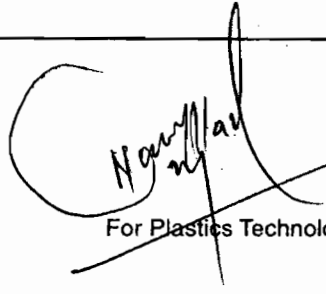
the sum of Rupees Ten thousand only

by ~~Cheque / Cash~~ No. 4113857 of Standard Chartered
by ~~Payorder / Bank Draft~~

on account of Testing fee

Rs. 10,000/-

* Subject to realization


For Plastics Technology Centre