

# Polyethylene Pipe System

Irrigation and Water Distribution



ISO 4427 : 1996, DIN 8074, EN 12201 HDPE  
DIN 8072 LLDPE • ASAE S435 LLDPE

AUST STD 2698-1 : 1984 LLDPE • BS 1972 / 67 LDPE

## The Polyethylene Difference

National Plastics PE pipes are made from 100% virgin polyethylene and only contain UV stabilizers and pigments necessary for the pipes to conform to the specifications. Pipes contain minimum of 2.5% carbon black. All pipes are black in color for maximum UV resistance and suitable for drinking water and potable water supplies.

National Plastic pipes are produced in HDPE, LLDPE and LDPE material. HDPE pipes are produced in a number of design stresses against the standards ISO, DIN, EN and have a design coefficient "C" of not less than 1.25 to the MRS of the material as set out in Table 1 and Table 2.

HDPE pipes can be produced in PE63, PE80 or PE100 material.



**Table 1 : Designation of Material**

Designation of material	MRS at 50 years and 20 °C	Maximum allowable hydrostatic design stress, $\sigma_s$
	MPa	MPa
PE 100	10	8
PE 80	8	6.3
PE 63	6.3	5
PE 40	4	3.2
PE 32	3.2	2.5

The relationship between MRS and  $\sigma_s$  for various design coefficients is given in Table 2.

**Table 2 : Relationship between MRS,  $\sigma_s$  and design coefficient C at 20°C**

Hydrostatic design stress of pipe, $\sigma_s$ MPa	Minimum required strength of material MPa				
	10	8	6.3	4	3.2
	Design coefficient, C				
8	1.25	-	-	-	-
6.3	1.6	1.25	-	-	-
5	2	1.6	1.25	-	-
4	2.5	2	1.6	-	-
3.2	3.2	2.5	2	1.25	-
2.5	-	3.2	2.5	1.6	1.25

# Polyethylene Pipe System

For Water Distribution

Polyethylene Pipe System  
Irrigation & Water Distribution

## ISO 4427 : 1996, DIN 8074, EN 12201 Pipes of High Density Polyethylene (HDPE)

Polyethylene pipes with a design stress  $\sigma_s$  of 5 MPa (PE63)

Nominal Outside Diameter  $d_n$	Pipe series <sup>1)</sup>							
	S 16	S 12,5	S 8,3	S 8	S 6,3	S 5	S 4	S 3,2
	Standard dimension ratio							
	SDR 33	SDR 26	SDR 17,6	SDR 17	SDR 13,6	SDR 11	SDR 9	SDR 7,4
	Nominal pressure PN <sup>2)</sup> for $\sigma_s = 5$ MPa							
	PN 3,2	PN 4	PN 6	PN 6,3	PN 8	PN 10	PN 12,5	PN 16
Nominal wall thickness, $e_n$ mm								
16	-	-	-	-	-	2.3	2.3	2.3
20	-	-	-	-	2.3	2.3	2.3	2.8
25	-	-	2.3	2.3	2.3	2.3	2.8	3.5
32	-	-	2.3	2.3	2.4	2.9	3.6	4.4
40	-	2.3	2.3	2.4	3.0	3.7	4.5	5.5
50	-	2.3	2.9	3.0	3.7	4.6	5.6	6.9
63	2.3	2.5	3.6	3.8	4.7	5.8	7.1	8.6
75	2.3	2.9	4.3	4.5	5.6	6.8	8.4	10.3
90	2.8	3.5	5.1	5.4	6.7	8.2	10.1	12.3
110	3.4	4.2	6.3	6.6	8.1	10.0	12.3	15.1
125	3.9	4.8	7.1	7.4	9.2	11.4	14.0	17.1
140	4.3	5.4	8.0	8.3	10.3	12.7	15.7	19.2
160	4.9	6.2	9.1	9.5	11.8	14.6	17.9	21.9
180	5.5	6.9	10.2	10.7	13.3	16.4	20.1	24.6
200	6.2	7.7	11.4	11.9	14.7	18.2	22.4	27.4
225	6.9	8.6	12.8	13.4	16.6	20.5	25.2	30.8
250	7.7	9.6	14.2	14.8	18.4	22.7	27.9	34.2
280	8.6	10.7	15.9	16.6	20.6	25.4	31.3	38.3
315	9.7	12.1	17.9	18.7	23.2	28.6	35.2	43.1
355	10.9	13.6	20.1	21.1	26.1	32.2	39.7	48.5
400	12.3	15.3	22.7	23.7	29.4	36.3	44.7	54.7



Al Ruwaya Tiger Woods Golf Course, Dubai

# ISO 4427 : 1996, DIN 8074, EN 12201

## Pipes of High Density Polyethylene (HDPE)

### Polyethylene pipes with a design stress $\sigma_s$ of 6.3 MPa (PE80)

Nominal Outside Diameter  $d_n$	Pipe series <sup>1)</sup>				
	S 10	S 8	S 6,3	S 5	S 4
	Standard dimension ratio				
	SDR 21	SDR 17	SDR 13,6	SDR 11	SDR 9
	Nominal pressure PN <sup>2)</sup> for $\sigma_s = 6,3$ MPa				
	PN 6 <sup>3)</sup>	PN 8	PN 10	PN 12,5	PN 16
Nominal wall thickness, $e_n$ mm					
16	-	-	-	-	2.3
20	-	-	-	-	2.3
25	-	-	-	2.3	2.8
32	-	-	-	3.0	3.6
40	-	-	-	3.7	4.5
50	-	-	-	4.6	5.6
63	-	-	4.7	5.8	7.1
75	-	4.5	5.6	6.8	8.4
90	4.3	5.4	6.7	8.2	10.1
110	5.3	6.6	8.1	10.0	12.3
125	6.0	7.4	9.2	11.4	14.0
140	6.7	8.3	10.3	12.7	15.7
160	7.7	9.5	11.8	14.6	17.9
180	8.6	10.7	13.3	16.4	20.1
200	9.6	11.9	14.7	18.2	22.4
225	10.8	13.4	16.6	20.5	25.2
250	11.9	14.8	18.4	22.7	27.9
280	13.4	16.6	20.6	25.4	31.3
315	15.0	18.7	23.2	28.6	35.2
355	16.9	21.1	26.1	32.2	39.7
400	19.1	23.7	29.4	36.3	44.7

### Polyethylene pipes with a design stress $\sigma_s$ of 8 MPa (PE100)

Nominal Outside Diameter  $d_n$	Pipe series <sup>1)</sup>		
	S 8	S 6,3	S 5
	Standard dimension ratio		
	SDR 17	SDR 13,6	SDR 11
	Nominal pressure PN <sup>2)</sup> for $\sigma_s = 8$ MPa		
	PN 10	PN 12,5	PN 16
Nominal wall thickness, $e_n$ mm			
32	-	-	3.0
40	-	-	3.7
50	-	-	4.6
63	-	4.7	5.8
75	4.5	5.6	6.8
90	5.4	6.7	8.2
110	6.6	8.1	10.0
125	7.4	9.2	11.4
140	8.3	10.3	12.7
160	9.5	11.8	14.6
180	10.7	13.3	16.4
200	11.9	14.7	18.2
225	13.4	16.6	20.5
250	14.8	18.4	22.7
280	16.6	20.6	25.4
315	18.7	23.2	28.6
355	21.1	26.1	32.2
400	23.7	29.4	36.3



# Polyethylene Pipe System

For Water Distribution

Polyethylene Pipe System  
Irrigation & Water Distribution

## DIN 8072

Pipes of Low Density Polyethylene (LLDPE)

Outside Diameter (mm)	Wall Thickness		
	2.5 Bar Rating (mm)	6 Bar Rating (mm)	10 Bar Rating (mm)
10	-	-	2.0
12	-	-	2.0
16	-	2.0	2.7
20	-	2.2	3.4
25	2.0	2.7	4.2
32	2.0	3.5	5.4
40	2.0	4.3	6.7
50	2.4	5.4	8.4
63	3.0	6.8	10.5
75	3.6	8.1	12.5
90	4.3	9.7	15.0
110	5.3	11.8	18.4



Madinat Jumeirah, Dubai

## ASAE S435

### ASTM Standard Linear Low Density Drip Irrigation Tubing (LLDPE)

Ordering Code	Nominal Inside Diameter		Minimum Inside Diameter		Minimum Wall Thickness		Nominal Working Pressure	
	in	mm	in	mm	in	mm	Psi	Bar
DP15670D(112)	½	13	0.617	15.67	0.044	1.12	69	4.8
DP17960D(124)	½	15	0.707	17.96	0.049	1.24	67	4.6
DP18110D(107)	½	16	0.713	18.11	0.042	1.07	57	3.9
DP20900D(119)	¾	18	0.823	20.90	0.047	1.19	55	3.8
DP23440D(132)	¾	21	0.923	23.44	0.052	1.32	64	3.7
DP30020D(157)	1	27	1.180	30.02	0.062	1.57	50	3.4

## AUST STD 2698-1 : 1984

### Australian Standard Linear Low Density Drip Irrigation Tubing (LLDPE)

Ordering Code	Nominal Inside Diameter		Minimum Inside Diameter		Minimal Wall Thickness		Nominal Working Pressure		Coil Size Meters
	in	mm	in	mm	in	mm	Psi	Bar	
DP13(12)	½	13	0.50	12.7	0.047	1.2	44	3.0	250mtrs.
DP13(15)	½	13	0.50	12.7	0.059	1.5	60	4.0	250mtrs.
DP16(12)	½	16	0.62	15.8	0.047	1.2	44	3.0	250mtrs.
DP19(13)	¾	19	0.74	18.90	0.051	1.3	44	3.0	250mtrs.
DP25(15)	1	25	1.00	25.20	0.059	1.5	44	3.0	250mtrs.
DP32(2.0)	1 ¼	32	1.24	31.50	0.078	2.0	44	3.0	250mtrs.

## BS 1972 / 67

### British Standard Low Density Polyethylene (LDPE)

Nominal pipe size inch	Outside Diameter				Wall Thickness											
	Minimum		Maximum		Class B 6.1 kgf/cm <sup>2</sup> (Bar Approx)				Class C 9.1 kgf/cm <sup>2</sup> (Bar Approx)				Class D 12.2kgf/cm <sup>2</sup> (Bar Approx)			
	inch	mm	inch	mm	Minimum		Maximum		Minimum		Maximum		Minimum		Maximum	
					inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
3/8	0.669	17.0	0.681	17.3	-	-	-	-	0.087	2.2	0.098	2.5	0.110	2.8	0.122	3.1
½	0.835	21.2	0.847	21.5	-	-	-	-	0.106	2.7	0.118	3.0	0.134	3.4	0.146	3.7
¾	1.047	26.6	1.059	26.9	0.091	2.3	0.102	2.6	0.134	3.4	0.146	3.7	0.169	4.3	0.185	4.7
1	1.315	33.4	1.327	33.7	0.118	3.0	0.130	3.3	0.165	4.2	0.181	4.6	0.213	5.8	0.232	5.9
1 ¼	1.657	42.1	1.673	42.5	0.146	3.7	0.161	4.1	0.209	5.3	0.228	5.8	0.268	6.7	0.295	7.5
1 ½	1.894	48.1	1.910	48.5	0.169	4.3	0.185	4.7	0.240	6.1	0.264	6.7	0.307	7.8	0.338	8.6
2	2.366	60.1	2.386	60.6	0.209	5.3	0.228	5.8	0.299	7.6	0.331	8.4	-	-	-	-
3	3.488	88.6	3.516	89.3	0.307	7.8	0.339	8.6	0.441	11.2	0.484	12.3	-	-	-	-
4	4.484	113.9	4.516	114.7	0.394	10.0	0.433	11.0	-	-	-	-	-	-	-	-

# A Few Worldwide Projects

National Plastic products have been used in thousands of projects in four continents.

## AFGHANISTAN

- Water Distribution Network for relief project in Kabul
- uPVC well casing and screen for Aid Agency project
- Conduits for telecommunications

## ALGERIA

- Water well projects

## ANGOLA

- Rural water distribution

## AUSTRALIA

- Environmental Monitoring System

## AZERBAIJAN

- AGT Pipeline Facilities, Baku

## BAHRAIN

- Irrigation Network System
- Municipal Water Supply

## BANGLADESH

- Telecommunication Network Dhaka

## CAMBODIA

- Village Water Supply System in Phnom Penh

## CAPE VERDE

- Water Distribution Network

## CHAD

- Water well projects

## CHINA

- UN Funded Water well projects

## COMOROS

- Water Distribution System

## CONGO

- uPVC & CPVC Pipe System for 100 Villa Project, Kinshasa

## CYPRUS

- Water Supply Distribution Network

## DJIBOUTI

- Housing Drainage Network Djibouti

## EGYPT

- Water Supply Distribution System Cairo

## ERITREA

- Town Water Supply & Drainage Network, Asmara
- Drip Irrigation System Citrus Fruit Farm, Asmara
- UPVC Pipes & Fittings for Mealewya Water Development Project

## ETHIOPIA

- Town Water Distribution Network Addis Ababa
- Town Sewerage & Drainage Addis Ababa

## FRANCE

- Drip Irrigation System Paris

## GAMBIA

- Rural Water Distribution

## GEORGIA

- Water Supply Distribution Network

## GERMANY

- Environmental Monitoring System

## HONGKONG

- uPVC Pipe System for Government projects

## INDIA

- Pilot Drip Irrigation System for Horticultural Project in Central India
- UPVC Pipes for Champion Reef Golf Course Project
- Boulder Hills, India
- DLF Golf and Country Club, India

## IRAN

- Irrigation equipments for Tehran Municipality projects

## IRAQ

- uPVC Pipes and Fittings for UN funded water distribution projects

## ITALY

- Pipe & Irrigation System

## JAPAN

- Micro Irrigation System for Greenhouse Company

## JORDAN

- Casing & Screen for rural water well projects
- uPVC Pipe System for water supply network

## KENYA

- Water well projects
- Drip Irrigation System

## KUWAIT

- uPVC Pipes for Kuwait Oilfield installation
- LDPE pipes for Kuwait Oil Company

## KYRGHYZSTAN

- Housing complex Water Distribution Network, Bishkek

## LAOS

- Water Supply Distribution Network

## LEBANON

- Drainage Pipes for housing project in Beirut

## LIBYA

- Water well Projects
- Cathodic Protection System

## MAURITANIA

- Tasiast Gold Mine, Mauritania

## MAURITIUS

- uPVC Pipes for Water Supply & Irrigation, Port Louis

## MADAGASCAR

- Water well Projects

## MALAYSIA

- Water well Projects

## MALAWI

- UPVC Pipes Water Supply Projects in Mzuzu Phase 3 and Kasungu

## MOROCCO

- Water Distribution Network Rabat

## MYANMAR

- Community Water Supply System Yangon
- Royal Myanmar Golf Course

## NEPAL

- Water Distribution Networks Katmandu

## NEW ZEALAND

- Micro Irrigation equipment for irrigation company
- Irrigation PVC pipes, New Zealand

## NORTH KOREA

- Water Distribution Network

## OMAN

- uPVC Well Casing and Screens for various agriculture projects
- Waterproofing Roof coating Ministry of Agri., Inform & Health Muscat

## PAKISTAN

- Telecommunication Network Karachi
- uPVC Pipe / Well casing and screen for UN funded projects
- Bahria Golf City, Pakistan

## QATAR

- Central A/C Coating System, Sports Stadium, Doha
- uPVC Pipes for Ras Laffan Housing Project
- Casing and Screen project for Qatar International Airport

## RWANDA

- Village Water Supply Network Kigali

## SAUDI ARABIA

- Telephone duct for Saudi Arabia Telecom
- uPVC Pipes for various irrigation / landscape projects

## SENAGAL

- Water Supply Network

## SINGAPORE

- Water Supply System
- Laguna Golf Club, Singapore

## SOMALIA

- Rural Water Supply System

## SOUTH AFRICA

- uPVC Well Casing and Screens

## SPAIN

- Heavy duty casing & screen for Power Generating Authority in Northern Spain

## SRI LANKA

- Various Waterproofing Roof Coating projects

## SUDAN

- Waterproofing Roof Coating Rep Palace & Airprt, Khartoum
- Water well projects, Khartoum

## SYRIA

- Micro Irrigation System for various agricultural projects

## TANZANIA

- Village Water Supply System Dar Es Salaam

## THAILAND

- UPVC Well Casing & Screen Pipes
- Golf Course Irrigation Systems

## TURKMENISTAN

- Residential Water Supply System, Ashgabat

## UNITED ARAB EMIRATES

- International City, Dubai
- Festival City, Dubai
- International Airport Expansion, Dubai
- Burj Khalifa, Dubai
- Jumeirah Lake Towers, Dubai
- Madinat Jumeirah, Dubai
- Green Community, Dubai
- Palm Islands, Dubai
- Jumeirah Beach Residence, Dubai
- Arabian Ranches, Dubai
- Al Ruwaya Tiger Woods Golf Course, Dubai
- Conference Palace Hotel, Abu Dhabi
- Presidential Palace, Abu Dhabi
- Al Sowwah Island, Abu Dhabi
- City of Lights, Abu Dhabi
- Water Park Yas Island, Abu Dhabi
- Saadiyat Beach Apartment, Abu Dhabi
- Shams Al Reem Island, Abu Dhabi
- Khalifa Park, Abu Dhabi
- Rosewood Hotel, Abu Dhabi
- Mafraq Hospital, Abu Dhabi
- Al Raha Beach Resort
- Medical College, Al-Ain
- Marjan Island, Ras Al Khaimah

## UGANDA

- Water Supply Distribution Network Kampala

## UNITED KINGDOM

- uPVC & PE Casing/Screen pipes
- PVC pipes for water supply distribution

## UZBEKISTAN

- Golf Course Irrigation Network System, Tashkent

## VIETNAM

- uPVC Well Casing & Screen for Aid project
- uPVC pipes & fittings for town water supply
- uPVC Pipes for Long Bien Development
- Twin Doves Golf Course, Vietnam
- Ho Tram Golf Course, Vietnam

## YEMEN

- uPVC pipes & fittings & irrigation System for World Bank funded projects

## ZAMBIA

- Water well Projects

# INTERNATIONAL CERTIFICATIONS

Our Ref: HU/M110101  
Test Report: MAT/LAB 545C



11<sup>th</sup> April 2011

National Plastic & Building Material Industries LLC,  
PO Box 1943,  
Sharjah,  
UAE

**WATER REGULATIONS ADVISORY SCHEME (WRAS)  
MATERIAL APPROVAL**

The material referred to in this letter is suitable for contact with wholesome water for domestic purposes having met the requirements of BS 6920-1:2000 'Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water'.

The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its mechanical or physical properties for any use.

**POLYVINYLCHLORIDE (PVC, PVC-U & CPVC) 5300**

National Plastic Sharjah blue coloured, extruded PVC-U pipe. For use with water up to 23°C.

**APPROVAL NUMBER: 1011525  
APPROVAL HOLDER: NATIONAL PLASTIC & BUILDING MATERIAL INDUSTRIES LLC.**

The Scheme reserves the right to review approval. This approval is valid between November 2010 and November 2015.

An entry, as above, will accordingly be included in the Water Fittings Directory on-line under the section headed, "Materials which have passed full tests of effect on water quality".

The Directory may be found at: [www.wras.co.uk/directory](http://www.wras.co.uk/directory)

Yours faithfully

Jason Furnival  
Approvals & Enquiries Manager  
Water Regulations Advisory Scheme

Water Regulations Advisory Scheme Ltd.  
20 West Close, Pencoed Industrial Estate,  
Pencoed, Cardiff CF11 3EQ, UK.  
Tel: 01495 246114. Fax: 01495 230095.  
E-mail: [info@wras.co.uk](mailto:info@wras.co.uk). Website: [www.wras.co.uk](http://www.wras.co.uk)

Our Ref: HU/M120421  
Test Report: M105169



18<sup>th</sup> January 2012

National Plastic &  
Building Materials Industries LLC,  
PO Box 1943,  
Sharjah,  
UAE

**WATER REGULATIONS ADVISORY SCHEME (WRAS)  
MATERIAL APPROVAL**

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The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its mechanical or physical properties for any use.

**POLYVINYLCHLORIDE (PVC, PVC-U AND CPVC) - COMPONENTS 5300**

"NATIONAL PLASTIC SHARJAH-LF". Grey coloured, extruded PVC-U pipe. For use with water up to 60°C.

**APPROVAL NUMBER: 1201510  
APPROVAL HOLDER: NATIONAL PLASTIC & BUILDING MATERIALS INDUSTRIES LLC**

The Scheme reserves the right to review approval. This approval is valid between January 2012 and January 2017.

An entry, as above, will accordingly be included in the Water Fittings Directory on-line under the section headed, "Materials which have passed full tests of effect on water quality".

The Directory may be found at: [www.wras.co.uk/directory](http://www.wras.co.uk/directory)

Yours faithfully

Jason Furnival  
Approvals & Enquiries Manager  
Water Regulations Advisory Scheme

Water Regulations Advisory Scheme Ltd.  
20 West Close, Pencoed Industrial Estate,  
Pencoed, Cardiff CF11 3EQ, UK.  
Tel: 01495 246114. Fax: 01495 230095.  
E-mail: [info@wras.co.uk](mailto:info@wras.co.uk). Website: [www.wras.co.uk](http://www.wras.co.uk)

## CERTIFICATE OF COMPLIANCE

Certificate Number: 20120810-E354422  
Report Reference: E354422-20120802  
Issue Date: 2012-AUGUST-10

Issued to: NATIONAL PLASTIC & BUILDING MATERIAL  
INDUSTRIES LLC  
INDUSTRIAL AREA NO. 1  
STREET NO. 23  
P.O. BOX 1943  
SHARJAH, UNITED ARAB EMIRATES

This is to certify that representative samples of RIGID NONMETALLIC PVC CONDUIT  
Schedule 40 rigid nonmetallic PVC conduits in the 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5 and 6 trade sizes with integral couplings.

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate

Standard(s) for Safety: Standard for Schedule 40 and 80 type EB and a Rigid PVC Conduit and fittings, UL661

Additional Information: See the UL Online Certifications Directory at [www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Listing Mark should be considered as being covered by UL's Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle with the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.

William R. King, Director, North American Technical Programs  
UL LLC





# Kitemark® Licence



No. KM 509597

BSI hereby grants to:

National Plastic & Building  
Material Industries LLC  
P O Box 1943  
Sharjah  
UAE

In respect of:  
BS EN 1452-2

Plastic Piping Systems for Water Supply -  
Unplasticized Poly (Vinyl Chloride) (PVC-U)  
Part 2: Pipes

The right and Licence to use the Kitemark in accordance with the Kitemark Licence Conditions of Contract governing the use of the Kitemark, as may be updated from time to time by BSI, and as approved by the Registrar under the Trade Marks Act 1994 (the "Conditions"). All defined terms in this Licence shall have the same meaning as in the Conditions.

The use of the Kitemark is authorized in respect of the Product(s) detailed on this Licence provided at or from the above address.

For and on behalf of BSI:

Alastair Trivett, Managing Director, BSI Product Services - Qatara

First granted: 13 Feb 2008

Date: 19 Feb 2008

Page: 1 of 2



The licence carries the property of BSI and shall be treated as a loan. It is not to be used for any other purpose. The licence does not confer any right to use the Kitemark in any other way. It is not to be used in any way that is likely to cause confusion or to be misleading. BSI is not responsible for third parties.



BSI Product Services  
Madenpit Avenue, Hemel Hempstead, Hertfordshire HP2 4SD United Kingdom  
Tel: +44 (0)1462 20442 Website: www.bsi-global.com  
BSI Group Headquarters: 389 Chiswick High Road, London W6 7EQ, UK +44 (0)20 899 6900

Product Services

# KITEMARK LICENCE



No. KM 79152

BSI hereby grants to:

National Plastic & Building  
Material Industries L L C  
P O Box 1943  
Sharjah  
UAE

In respect of:

Plastic piping systems for soil and waste discharge (low and high temperature)  
within the building structure - unplasticized poly(vinyl chloride) (PVC-U)

The right and Licence to use the Kitemark in accordance with the Kitemark Licence Conditions of Contract governing the use of the Kitemark, as may be updated from time to time by BSI, and as approved by the Registrar under the Trade Marks Act 1994 (the "Conditions"). All defined terms in this Licence shall have the same meaning as in the Conditions.

The use of the Kitemark is authorized in respect of the Product(s), manufactured at, or provided from, the address above and in conformity with the standard(s) detailed on the following pages.

For and on behalf of BSI:

Anne Boyd, Divisional Director, Product Services Operations

First granted: 12 May 2004

Date: 12 May 2004

Page: 1 of 2



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BSI Product Services  
Madenpit Avenue, Hemel Hempstead, Hertfordshire HP2 4SD United Kingdom  
Tel: +44 (0)1462 20442 Website: www.bsi-global.com  
BSI Group Headquarters: 389 Chiswick High Road, London W6 7EQ, UK +44 (0)20 899 6900

Product Services

# KITEMARK LICENCE



No. KM 79153

BSI hereby grants to:

National Plastic & Building  
Material Industries L L C  
P O Box 1943  
Sharjah  
UAE

In respect of:

Plastics piping systems for non-pressure underground drainage and sewerage  
- Unplasticized poly(vinyl chloride)(PVC-U)

The right and Licence to use the Kitemark in accordance with the Kitemark Licence Conditions of Contract governing the use of the Kitemark, as may be updated from time to time by BSI, and as approved by the Registrar under the Trade Marks Act 1994 (the "Conditions"). All defined terms in this Licence shall have the same meaning as in the Conditions.

The use of the Kitemark is authorized in respect of the Product(s), manufactured at, or provided from, the address above and in conformity with the standard(s) detailed on the following pages.

For and on behalf of BSI:

Anne Boyd, Divisional Director, Product Services Operations

First granted: 12 May 2004

Date: 12 May 2004

Page: 1 of 2



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Product Services

**Worldwide Supplier of  
Quality Piping Solutions  
Since 1975**



**National Plastic & Building Material Industries L.L.C.**

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