

Drainage Pipe System

British Standard



FITTINGS RANGE : Hunter, Ezyflo, Redi
BS EN 1329 • BS EN 1401 • BS 5255 • BS 4514
BS 4660 • BS 5481

UPVC Drainage Pipe System

UPVC Drainage Pipe System
British Standard

Drainage Pipe Systems

National Plastics produces a range of UPVC pipes for above and below ground use made from 100% virgin UPVC. It has full range of fittings in both solvent weld and rubber ring joint for all sizes.

The pipes are produced in all the major international standards ie: European Standards BS EN 1401, BS EN 1329, as well as the previous standards such as BS 5255, BS 4514, BS 4660, BS 5481. A range complying to ASTM D2655 Sch 40/80 is also available on request.

National Plastic also has Kitemark licences from BSI for the EN range from 1 1/4" to 16" and can supply Kitemark certified pipes where required.

National Plastic can provide a range of fittings from its own Ezyflo brand or from Redi and Hunter.

General Properties of National Plastic Drain Pipes

- Fully compliant to the main International Standards
- Kitemark certified range
- Tough, impact resistant
- EPDM rubber rings following EW681 Standard
- Can be supplied in Solvent Weld or Rubber Ring Joint (from 3" and above)
- Different lengths available 3m, 2.9m, 6m, 5.8m. Other lengths on request.
- Distinctive colour coded system (ie Light Grey, Brown, White, etc.) with full printing at 1m intervals
- Superior chemical and acid resistance
- Outstanding mechanical properties of tensile strength and resistance to pressure.

BS 5255, BS 4514, BS 4660, BS 5481

Code	Nominal OD mm(inch)	Minimum OD mm	Minimum Wall Thickness mm	Colour
BS 5255 WASTE				
DR-125	36(1 ¹ / ₄ "	36.15	1.8	WH/LG
DR-15	43(1 ¹ / ₂ "	42.75	1.9	"
DR-2(50)*	50(2")	50.00	2.0	"
DR-2(55)	55(2")	55.75	2.0	"
BS 4514 SOIL				
DR-3/LG	82(3")	82.40	3.0	LG
DR-4/LG	110(4")	110.00	3.2	"
DR-6/LG	160(6")	160.00	3.2	"
BS 4660 UNDERGROUND				
DR-4/BR	110(4")	110.00	3.2	BR
DR-6/BR	160(6")	160.00	4.1	"
BS 5481 GRAVITY SEWER				
DR-8/BR	200(8")	200.00	4.9	BR
DR-10/BR	250(10")	250.00	6.1	"
DR-12/BR	315(12")	315.00	7.7	"
DR-16/BR	400(16")	400.00	9.8	"

* Not part of BS 5255. Metric only.

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The main features of Ezyflo drainage fittings are:

- Strong and resistant to impact
- Easy to install and compatible with National Plastic drainage pipe.
- Fully compliant to the BS standards.
- Resistant to a wide range of chemicals / fluids.
- Smooth bore to give excellent flow characteristics.



Raw Material

The raw material is 100% virgin PVC-U

Colour

BS EN 1329-1:2000 v Light Grey
BS EN 1401-1:1998 v Orange Brown

Chamfering

A 15° chamfer is applied to all spigot ends for rubber ring pipe.

Length

Pipes are normally supplied in 6m overall length.

Pipes can also be supplied in 5.8m overall length to fit inside containers.

Sizes 36, 43 and 56mm are supplied in 4m overall length with plain ends.

Specifications:

Standards	:	BS 5255 - Light Grey; BS 4514 - Light Grey; BS 4660 - Brown
Material	:	100% uPVC
Joints	:	Female solvent weld sockets
Temp Range	:	0°C - 80°C (for intermittent discharge)
Tensile Strength	:	Min. 45 N/mm ²

Characteristics of Pipes BS EN1329, BS EN1401

Compound Characteristics

The compounds used in National Plastic pipes conforming to the standards have the following characteristics.

Modulus of Elasticity	=	E (1 min) ≥ 3000 mPa
Average Density	=	1.4 g/cm ³
Average Coefficient of Linear Thermal Expansion	=	0.8mm/mK
Thermal Conductivity	=	0.16 WK ⁻¹ m ⁻¹
Surface Resistance	=	> 10 ¹² Ω



Dubai International Airport, Dubai

Mechanical and Physical Characteristics

Characteristics	Requirement	Test Method
Impact Resistance	TIR ≤ 10%	EN 744
Vicat Softening	≥ 79°C	EN 727
Longitudinal Reversion	≤ 5%	EN 743
Dichloromethane Acid Resistance	No attack	EN 580
Water Tightness of Rubber Ring Joint	No leakage	EN 1277
Elevated Temp. Cycling	No leakage	EN 1055
Long Term Performance of TPE Seals	1. 90 days ≥ 1.3 bar 2. 100 years ≥ 0.6 bar	prEN 1989
Resistance to Internal Pressure	No failure during the test 10.0MPa for 1000 hours, at 60°C	EN 921

BS EN 1329-1:2000

Dimensions in millimeters

Nominal Size DN/OD	Nominal OD	Mean Outside Diameter		Wall Thickness Application Area "B"	
		(dem, min)	(dem, max)	(e, min)	(e, max)
36 (1 1/4")	36	36.2	36.5	3.0	3.5
43 (1 1/2")	43	42.8	43.1	3.0	3.5
56 (2")	56	55.8	56.1	3.0	3.5
82 (3")	82	82.0	82.3	3.0	3.5
110 (4")	110	110.0	110.30	3.2	3.8
160 (6")	160	160.0	160.40	3.2	3.8
200 (8")	200	200.0	200.5	3.9	4.5
250 (10")	250	250.0	250.5	4.9	5.6
315 (12")	315	315.0	315.6	6.2	7.1

N.B. Application area "B" for components intended to be used above ground inside the building or outside building fixed to a wall.

BS EN 1401-1:1998

Dimensions in millimeters

Nominal Size DN/OD	Nominal OD	Mean Outside Diameter		Wall Thickness SN2, SDR 51		Wall Thickness SN4, SDR 41		Wall Thickness SN8, SDR 34	
		(dem, min)	(dem, max)	(e, min)	(e, max)	(e, min)	(e, max)	(e, min)	(e, max)
110 (4")	110	110.0	110.3	-	-	3.2	3.8	3.2	3.8
160 (6")	160	160.0	160.4	3.2	3.8	4.0	4.6	4.7	5.4
200 (8")	200	200.0	200.5	3.9	4.5	4.9	5.6	5.9	6.7
250 (10")	250	250.0	250.5	4.9	5.6	6.2	7.1	7.3	8.3
315 (12")	315	315.0	315.6	6.2	7.1	7.7	8.7	9.2	10.4
400 (16")	400	400.0	400.7	7.9	8.9	9.8	11.0	11.7	13.1

N.B. For Outside the building structure application area "U" SN2 = Ring stiffness of 2 KN/m² SN4 = Ring stiffness of 4 KN/m²

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



11th 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

Yours faithfully

Jason Furnival
Approvals & Enquiries Manager
Water Regulations Advisory Scheme

Water Regulations Advisory Scheme Ltd,
20 West Close, River Vale Industrial Estate,
Huddersfield, G13 7JG, UK.
Tel: 01484 246114. Fax: 01484 213095.
E-mail: info@wras.co.uk. Website: www.wras.co.uk

Our Ref: HU/M120421
Test Report: M105169



18th January 2012

National Plastic &
Building Materials 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 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

Yours faithfully

Jason Furnival
Approvals & Enquiries Manager
Water Regulations Advisory Scheme

Water Regulations Advisory Scheme Ltd,
20 West Close, River Vale Industrial Estate,
Huddersfield, G13 7JG, UK.
Tel: 01484 246114. Fax: 01484 213095.
E-mail: info@wras.co.uk. Website: 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 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



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BSI Group Headquarters: 389 Chiswick High Road, London W4 4AL, UK Tel: +44 (0)20 891 6100

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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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.

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Product Services

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



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