

Pressure Pipe System

Imperial & Metric Range



ASTM 1785 • ASTM 2241 • BS 3505
EN 1452-2:2009 • EN ISO 4422-2:1996
ISO 161/1 • DIN 8062:2009

Duct Pipe System
British Standard

British Standard Telephone Duct (B.P.O.)

Size (mm)	Minimum	
	OD (mm)	Wall (mm)
Duct 56	53.90	1.55
Duct 54D	96.50	3.25

Pipes can be supplied in 6.07 and 6.1m as per the standard or 6m length if required.

BS 3506

Nominal Size	Outside Diameter		Wall Thickness		
			Class O (non pressure)		
			Average Value	Individual Value	
Inch	Min. mm	Max. mm	mm	Min. mm	Max. mm
1 ¹ / ₂	48.1	48.4	2.2	1.8	2.2
2	60.2	60.5	2.2	1.8	2.2
3	88.7	89.1	2.2	1.8	2.2
4	114.1	114.5	2.8	2.3	2.8
6	168.0	168.5	3.7	3.1	3.7
8	218.8	219.4	3.7	3.1	3.7
10	272.6	273.4	3.7	3.1	3.7
12	323.4	324.3	3.7	3.1	3.7
16	405.9	406.9	4.8	4.1	4.8



Water Park Yas Island, Abu Dhabi

Duct and Conduit

For use in electrical, telephone, communication and other duct systems

Duct and Conduit

UL 651 Listed

Duct and Conduit UL 651 Listed

National Plastics produces a range of upvc schedule 40 ducts in sizes 1/2" to 6" that are in accordance with NEMA TC-2A standard and listed to UL 651.

The conduits are suitable for above or below ground installations and made from 100% virgin pvc resin. The ducts meet and exceed all the mechanical and performance requirement of both the NEMA TC2 and UL 651 standards.

General Properties

- Fully compliant to NEMA TC-2 and UL 651
- Rated for use with 90°C conductors
- Ultraviolet protected
- High impact and deformation properties
- Solvent cement joints with deep sockets
- Can be supplied in various lengths such as 3m, 6m, 2.9m, 5.8m (standard leg lengths 3m, 6m)
- Smooth solid wall
- Produced under an ISO 9001:2008 Quality Assurance System

MECHANICAL PROPERTIES

	ASTM	TYPICAL VALUE
Specific Gravity	D792	1.4 - 1.7
Tensile Strength (psi) @ 73.4 °F	D638	5,000
Izod Impact - ft lbs/in of notch	D256	0.65 - 1.50
Flexural Strength (psi)	D790	12,500
Comprehensive Strength (psi)	D695	9,000
Hardness (Durometer D)	D2240	95

THERMAL PROPERTIES

	ASTM	TYPICAL VALUE
Coefficient of Thermal Expansion - in/in/ °C	D696	5.13 x 10 ⁻⁵
Coefficient of Thermal Expansion - in/in/ °F	D696	3.0 x 10 ⁻⁵
Deflection Temp. °F Under Load @ 264 psi	D648	140 °F
Thermal Conductivity BTU (hr) (ft) (°F/in)	C177	1.3

ELECTRICAL PROPERTIES

	ASTM	TYPICAL VALUE
Dielectric Strength - volts/mil	D149	1,100
Dielectric Constant 60 CPS @ 30 °C	D150	4.00
Power Factor 60 CPS @ 30 °C	D150	1.93

FIRE RESISTANCE PROPERTIES

	ASTM	TYPICAL VALUE
Fire Resistance	-	Self Extinguishing
Flame Spread	E162	10
Smoke Development	E84	330

Duct and Conduit

For use in electrical, telephone, communication and other duct systems

Duct and Conduit
UL 651 Listed

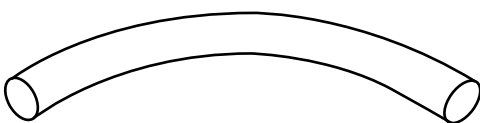
NEMA TC-2 AND ANSI / UL651 Sizes and Dimensions of PVC Conduit

U.S. Customary Units				
Nominal Size Inches	Outside Diameter, In. Average	Wall Thickness, Inches EPC-40-PVC		Socket Insertion Depth Inches
		Maximum	Minimum	
1 1/4	1.660±0.005	0.160	0.140	15/16 - 2
1 1/2	1.900±0.006	0.165	0.145	1 1/6 - 2
2	2.375±0.006	0.174	0.154	1 1/8 - 2
2 1/2	2.875±0.007	0.227	0.203	1 1/2 - 3
3	3.500±0.008	0.242	0.216	1 5/8 - 3 1/8
3 1/2	4.000±0.008	0.253	0.226	1 11/16 - 3 1/4
4	4.500±0.009	0.265	0.237	1 3/4 - 3 3/8
5	5.563±0.010	0.289	0.258	1 15/16 - 3 5/8
6	6.625±0.011	0.314	0.280	2 1/8 - 3 3/4

Metric Units				
Nominal Size Inches	Outside Diameter, mm Average	Wall Thickness, Millimeters EPC-40-PVC		Socket Insertion Depth mm
		Maximum	Minimum	
1 1/4	42.15±0.13	4.06	3.56	23.8 - 50.8
1 1/2	48.26±0.15	4.19	3.68	27.0 - 50.8
2	60.32±0.15	4.42	3.91	28.6 - 50.8
2 1/2	73.02±0.18	5.77	5.16	38.1 - 76.2
3	88.90±0.20	6.15	5.49	41.3 - 79.4
3 1/2	101.60±0.20	6.43	5.74	42.9 - 82.6
4	114.30±0.23	6.73	6.02	44.5 - 85.7
5	141.30±0.25	7.34	6.55	49.2 - 92.1
6	168.28±0.28	7.98	7.11	54.0 - 95.3

UL 651 LISTED PVC CONDUIT Bends SCH 40 Sizes 1 1/4" - 6"

- Available in 22 1/2°, 30°, 45° and 90° angles
- Available in different radius length (R)



Radius Length (R)

18"	48"
24"	60"
36"	

* 18" radius not available on 4" and above

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, Pencoed Industrial Estate,
Pencoed, Cardiff CF11 3EQ, UK.
Tel: 01495 246114. Fax: 01495 230095.
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, Pencoed Industrial Estate,
Pencoed, Cardiff CF11 3EQ, UK.
Tel: 01495 246114. Fax: 01495 230095.
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



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
Maple Road, Ayleston, 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 W4 4AL, UK Tel: +44 (0)20 8996 9000

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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