FITTINGS RANGE: Hunter, Ezyflo, Redi

BS EN 1329 • BS EN 1401 • BS 5255 • BS 4514
BS 4660 • BS 5481
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

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

*Not part of BS 5255. Metric only.*
UPVC Drainage Pipe System

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.

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/mm²

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.

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/cm³
- Average Coefficient of Linear Thermal Expansion = 0.8mm/mK
- Thermal Conductivity = 0.16 W/K·m⁻¹
- Surface Resistance = > 10¹² Ω

Dubai International Airport, Dubai
UPVC Drainage Pipe System

**British Standard**

### Mechanical and Physical Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Requirement</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact Resistance</td>
<td>TIR ≤ 10%</td>
<td>EN 744</td>
</tr>
<tr>
<td>Vicat Softening</td>
<td>≥ 79°C</td>
<td>EN 727</td>
</tr>
<tr>
<td>Longitudinal Reversion</td>
<td>≤ 5%</td>
<td>EN 743</td>
</tr>
<tr>
<td>Dichloromethane Acid Resistance</td>
<td>No attack</td>
<td>EN 580</td>
</tr>
<tr>
<td>Water Tightness of Rubber Ring Joint</td>
<td>No leakage</td>
<td>EN 1277</td>
</tr>
<tr>
<td>Elevated Temp. Cycling</td>
<td>No leakage</td>
<td>EN 1055</td>
</tr>
<tr>
<td>Long Term Performance of TPE Seals</td>
<td>1.90 days ≥ 1.3 bar</td>
<td>prEN 1989</td>
</tr>
<tr>
<td></td>
<td>2.100 years ≥ 0.6 bar</td>
<td></td>
</tr>
<tr>
<td>Resistance to Internal Pressure</td>
<td>No failure during the test</td>
<td>EN 921</td>
</tr>
<tr>
<td></td>
<td>10.0MPA for 1000 hours, at 60°C</td>
<td></td>
</tr>
</tbody>
</table>

### BS EN 1329-1:2000

**Dimensions in millimeters**

<table>
<thead>
<tr>
<th>Nominal Size</th>
<th>Nominal OD</th>
<th>Mean Outside Diameter (dem. min)</th>
<th>(dem. max)</th>
<th>Wall Thickness Application Area “B” (e, min)</th>
<th>(e, max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN/OD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36 (1 1/4&quot;)</td>
<td>36</td>
<td>36.2</td>
<td>36.5</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>43 (1 1/2&quot;)</td>
<td>43</td>
<td>42.8</td>
<td>43.1</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>56 (2&quot;)</td>
<td>56</td>
<td>55.8</td>
<td>56.1</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>82 (3&quot;)</td>
<td>82</td>
<td>82.0</td>
<td>82.3</td>
<td>3.0</td>
<td>3.5</td>
</tr>
<tr>
<td>110 (4&quot;)</td>
<td>110</td>
<td>110.0</td>
<td>110.3</td>
<td>3.2</td>
<td>3.8</td>
</tr>
<tr>
<td>160 (6&quot;)</td>
<td>160</td>
<td>160.0</td>
<td>160.4</td>
<td>3.2</td>
<td>3.8</td>
</tr>
<tr>
<td>200 (8&quot;)</td>
<td>200</td>
<td>200.0</td>
<td>200.5</td>
<td>3.9</td>
<td>4.5</td>
</tr>
<tr>
<td>250 (10&quot;)</td>
<td>250</td>
<td>250.0</td>
<td>250.5</td>
<td>4.9</td>
<td>5.6</td>
</tr>
<tr>
<td>315 (12&quot;)</td>
<td>315</td>
<td>315.0</td>
<td>315.6</td>
<td>6.2</td>
<td>7.1</td>
</tr>
</tbody>
</table>

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**

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

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 UN funded Aid Agency project
- Conduits for telecommunications

**ALGERIA**
- Water well projects

**ANGOLA**
- Rural water distribution

**AUSTRALIA**
- Environmental Monitoring System

**AZERBAIJAN**
- uPVC 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 Village Project, Kinshasa

**CYPRUS**
- Water Supply Distribution Network

**DJIBOUTI**
- Housing Drainage Network Djibouti

**EGYPT**
- Water Supply Distribution System Cairo
- Town Water Supply & Drainage Network, 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
- Irrigation equipments for Tehran Municipality projects
- 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
- Radial Sand Filter System

**MAURITIUS**
- Tasiati Gold Mine, Mauritania

**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 Yangoon
- Royal Myanmair Golf Course

**NEPAL**
- Water Distribution Networks Kathmandu

**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 irrigation projects
- Waterproofing Rood coating Ministry of Agril., Inform & Health Muscat

**PAKISTAN**
- Telecommunication Network Karachi
- uPVC Pipe / Well casing and screen for UN funded projects
- Bahria Golf City, Pakistan
- uPVC Pipes for Champion Reef Golf Course Project
- Central A/C Coating System, Sports Stadium, Doha
- uPVC Pipes for Ras Laffan Housing Project
- Casing and Screen project for Qatar International Airport

**QATAR**
- Village Water Supply Network Kigali

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

**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 & Airpt, 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 and 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

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

**UYERBANISTAN**
- Golf Course Irrigation Network System, Tashkent

**VIETNAM**
- uPVC Well Casing and Screen for Aid project
- uPVC pipes & fittings for town water supply
- uPVC Pipes for Long Bien Development

**ZAMBIA**
- Water Supply System

**ZIMBABWE**
- Water well Projects
INTERNATIONAL CERTIFICATIONS

WRAS
Water Regulations Advisory Scheme

Certificate Number: 21/RPS10182022
Report Reference: EBR442-2012002
Issue Date: 2012-AUGUST-10

Issued to:
NATIONAL PLASTIC & BUILDING MATERIAL INDUSTRIES LLC
INDUSTRIAL AREA NO. 1
DEIRA NO. 32
P.O. BOX 1663
SHARJAH, UNITED ARAB EMIRATES

This is to certify that the products listed below have been investigated by UL in accordance with the standards indicated on the Certificate:

PRODUCTS LISTED:
1. PVC NONMETALLIC PVC CONDUIT

Additional Information:
See the UL Online Certifications Directory at www.ul.com/databank for additional information.

This statement must be signed by the representative of the company whose name appears above.

UL

Page 1 of 1