NATIONAL PIPE PRODUCTS

L-1 to L-4 & R-2 to R-4, Site No.15, (335/25/14)
Mahadeshwaranagar, Herohalli Village
Sunkadkatte, Bangalore-560091. India

Phone : +91 7846986160
E-mail : info@vippipe.com
Website : www.vippipe.com
GST # 29 AAJFN 4830 G1Z4

DATA SHEET

RIGID PVC ROUND CONDUIT

Make	:	VIP
Product	:	Rigid PVC Round Conduit
Specification	:	IS: 9537 Part - 3 - 1983
Dimension	:	19 mm to 50 mm

Dimensions of Round Conduits IS: 9537 Part 3 - 1983

Nominal Size	Outside Diameter	Tolerance on OD	Inside Diameter (Min) in mm		
mm	**mm**	**mm**	**Light**	**Medium**	**Heavy**
16	16	-0.3	13.7	13.0	12.2
19 (Non Std)	19	-0.3	16.4	15.9	**14.8**
20	20	-0.3	17.4	16.9	**15.8**
25	25	-0.4	22.1	21.4	**20.6**
32	32	-0.4	28.6	**27.8**	26.6
40	40	-0.4	35.8	**35.4**	34.4
50	50	-0.5	**45.1**	44.3	43.2

Wall Thickness in mm

Size	Light	Medium	Heavy
16	1.00 – 1.15	1.35 – 1.50	1.75 – 1.90
19	1.15 – 1.30	1.40 – 1.55	1.90 – 2.10
20	1.15 – 1.30	1.40 – 1.55	1.90 – 2.10
25	1.25 – 1.45	1.60 – 1.80	1.90 – 2.10
32	1.50 – 1.70	1.90 – 2.10	2.50 – 2.70
40	1.90 – 2.10	2.10 – 2.30	2.60 – 2.80
50	2.10 – 2.30	2.60 – 2.85	3.15 – 3.40



For NATIONAL PIPE PRODUCTS

PARTNER

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MATERIAL DATA

RIGID PVC ROUND CONDUIT

01.	Material	:	Polyvinylchloride (PVC) Conduit
02.	Impact Resistance	:	High Impact Resistance
03.	Tensile Strength of PVC	:	450/565Kg/cm²
04.	Chemical Resistance of PVC	:	Unaffected by Inorganic Acid, Alkalis & Salt, Crude & Petrochemicals
05.	Coefficient of linear Expansion of PVC	:	7x10/mm/°C
06.	Flammability of PVC	:	Fire Retardant
07.	Vicat Softening Point of PVC	:	80º C at 5 Kg load / 50 N
08.	Oxygen Index of PVC	:	<21%
09.	Electric Strength of Conduit	:	No breakdown at 2 KV
10.	Insulation Strength of Conduit	:	> 100MΩ
11.	Operative Temperature of Conduit	:	- 5º C + 60º C
12.	Length of Conduit	:	3 mtr

PVC and uPVC are both the same. The "**U"** in **u**PVC stands for **Unplasticized** Poly Vinyl Chloride meaning, NO Plasticizer / Oil has been used in the manufacturing of the Rigid PVC Conduit. PVC conduits manufactured without using a Plasticizer are Rigid in nature thereby terming them uPVC / PVC conduits. Plasticizer / Oil are used for manufacturing of Garden Hose Pipe used to water plants / lawn.

The use of Plasticizer / Oil results in softening of the conduit and also results in Sagging of the conduit depending on the weight of the wires running through it or when exposed to Heat / Sun.

We **do not use and kind of Plasticizer** during the manufacturing process of VIP Make Rigid uPVC / PVC conduits and hence they are Rigid in nature.

Manufacturers Test Certificate is issued for conduits manufactured as per IS:9537 specification and bearing the ISI Mark only.

National Pipe Products
 # 14 & 15(335/25-14)
Magadi Road, Herohalli,
YeshwantpurHobli, Sunkadakatte,
Bangalore - 560091

VIP ISI MARKED PVC CONDUIT

TECHNICAL DATA SHEET

<table>
<tr><th>SL No</th><th>PROPERTY</th><th>DATA</th></tr>
<tr><td>1</td><td>Make</td><td>VIP ISI MARKED RIGID PVC CONDUITS</td></tr>
<tr><td>2</td><td>Applied Standard</td><td>IS:9537 (Part III) 1983</td></tr>
<tr><td>3</td><td>B I S Licence #</td><td>CM/L - 6200014982</td></tr>
<tr><td>4</td><td>Dimensions</td><td>
<table>
<tr><td>Nominal Size</td><td>Outside Diameter</td><td>Tolerance on OD</td><td colspan="3">Inside Diameter (Min) in mm</td></tr>
<tr><td>mm</td><td>mm</td><td>mm</td><td>LIGHT</td><td>MEDIUM</td><td>HEAVY</td></tr>
<tr><td>16</td><td>16</td><td>-0.30</td><td>13.70</td><td>13.00</td><td>12.20</td></tr>
<tr><td>19 (Non Std)</td><td>19</td><td>-0.30</td><td>16.40</td><td>15.90</td><td>14.80</td></tr>
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<tr><td>40</td><td>40</td><td>-0.40</td><td>35.80</td><td>35.40</td><td>34.40</td></tr>
<tr><td>50</td><td>50</td><td>-0.50</td><td>45.10</td><td>44.30</td><td>43.20</td></tr>
</table>
</td></tr>
<tr><td>5</td><td>Length</td><td>Standard length of the conduit is 3 Meters.</td></tr>
<tr><td>6</td><td>Bending Test</td><td>After the test on samples at room temperature, the samples shall show no cracks visible to normal vision without magnification. Bending Test is applicable for 16mm, 20mm and 25 mm.</td></tr>
<tr><td>7</td><td>Compression Test</td><td>25% of compression allowed under load of 1250N for Heavy and Medium Conduits and 10% allowed after releasing the load.</td></tr>
<tr><td>8</td><td>Impact Test</td><td>After the test on Samples at specified temp, there shall be on sign of disintegration and crack visible to naked eye in at least nine out of twelve Samples.</td></tr>
<tr><td>9</td><td>Collapse Test</td><td>After the test on the conditioned samples, it shall be possible to pass gauge of specified diameter for conduits of 16 mm to 25 mm diameter in Light, Medium and Heavy Mechanical stresses.</td></tr>
<tr><td>10</td><td>Resistance to Heat</td><td>After the test, Ball diameter of impression on the sample shall not exceed 2mm.</td></tr>
<tr><td>11</td><td>Resistance to burning</td><td>Flame shall die out in less than 30 seconds after removal of burner.</td></tr>
</table>

National Pipe Products
 # 14 & 15(335/25-14)
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12	Electrical Characteristics	**(a) Di-electric strength** No breakdown of conditioned sample shall occur at the voltage of 2000v &50Hz frequency for 15 minutes. **(b) Insulation Resistance** The insulation Resistance on conditioned Samples shall not be less than 100MΩ.
13	Colours	**VIP ISI MARKED PVC CONDUITS** are available in Seven Colours. Namely, Black, White, Grey, Red, Blue, Green and Orange. Special colours against requirements can also be produced.
	F R L S TESTS:	**ALL OUR CONDUITS ARE FRLS BY DEFAULT.** **FRLS IS AS PER ASTM STANDARD** **OUR CLAIM OF FRLS IS NOT APPROVED BY BIS** **THE BUREAU OF INDIAN STANDARDS DOES NOT ALLOW FRLS TO BE MARKED ON ISI MARKED CONDUITS SINCE THE SAME IS NOT COVERED UNDER IS: 9537**
1	Oxygen Index Test (ASTM – D 2863 – 1987)	The minimum concentration of oxygen flowing upward in test column under equilibrium conditions should be minimum 21%, expressed as volume percent. **Result Obtained – 30%.**
2	Temperature Index Test (ASTM – D 2863 – 1987)	The specific requirement under this test is minimum 250 ˚C. **Result Obtained – 262 ˚C.**
3	Smoke Density Test (ASTM – E – 662 – 1983)	Clear Beam Reading should range from a minimum of 0% to a maximum of 100%. **Result Obtained – 96% Clear Beam.**
4	Flammability Test (ASTM – D – 635 – 1981)	**(i) Average Extent of Burning:** The specific requirement on the average extent of Burning is < 25 mm. **Result Obtained – 18 mm** (ii)**Average Time of Burning:** The specific requirement on the average time of Burning is < 10 Sec. **Result Obtained – 4 mm**
5	Halogen Acid Generation Test (IEC – 754 – Part 1, 1994)	The maximum Halogen Acid Generation allowed under this test is 200 mg/gm **Result Obtained – 181 mg/gm**

National Pipe Products BANGALORE

NATIONAL PIPE PRODUCTS

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Website : www.vippipe.com
GST # 29 AAJFN 4830 G1Z4

22.03.2021

Whom So Ever It May Concern

This is to inform you that we are **no longer** marking **FRLS** on **Make ISI** Marked PVC Conduits as the same is objected by the Bureau of Indian Standards (BIS circular attached).

However, we assure you that **ALL OUR CONDUITS ARE FRLS** and 3rd Party Test Reports for FRLS Conformity is obtained from Central Institute of Petrochemical Engineering & Technology (CIPET) Laboratory and uploaded on our website www.vippipe.com.

Make FRLS PVC Conduits are available in 19 mm and 25 mm HMS (Heavy), in Black and White Colours only and that these conduits **will not bear the ISI Mark**. However, we assure you that the quality is the same as that of an ISI marked PVC Conduits.

Above is for your information.

Thanking You,

Yours Faithfully,

For NATIONAL PIPE PRODUCTS

PARTNER

VIP EXTRUSIONS
268/269/2B, Pipe Line Road, Mahadeshwara Nagar, Sunkadakatte, Bangalore-560 091.
Phone :080 - 23281338 Email : info@vipextrusions.com Website : www.vipextrusions.com
PH: +91 9343526661 Mfrs. of "2LUL" Brand PVC FRLS Conduits with ISI Mark. Since 1982
GSTIN # 29 AALFV 3998 H1Z9

22.03.2021

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FOR VIP EXTRUSIONS

PARTNER

भारतीय मानक ब्यूरो
Bureau of Indian Standards
The National Standards Body of India

Address: Kochi Branch Office,
II Floor, CWC Office Complex,
Maveli Road, Gandhi Nagar,
Kadavanthara, Kochi, Kerala - 682020
Phones: 0484-2207174,2207175
E-Mail: kobo@bis.gov.in
Web: www.bis.gov.in

SPEED POST / EMAIL

संदर्भ/Our Ref: KOBO/5:1

दिनांक:/ Date: 22 Mar 2021

विषय/Subject: Misleading claims made by conduit manufacturers on insulating conduits

To,
Shankar S Kumar

महोदय / Sir,

This has reference to your mail dated 02 March 2021, seeking clarification regarding printing of misleading claims like "FRLS" on Conduits of Insulating Materials.

It may kindly be noted that marking of claims like "FRLS" on Conduits of Insulating Materials, which are not verifiable in accordance with the relevant Indian Standard is not permitted. Such additional claims which are over and above the aspects/ characteristics prescribed in the ISS, mislead the users as it may be construed that such markings are approved by BIS.

An advisory has already been issued to all manufacturers of Conduits of Insulating Materials (IS 9537 (Part 3)) to refrain from marking such claims on conduits.

भवदीय/Yours faithfully,

(Sreejith Mohan J)
Scientist-C

श्रीजित जे /SREEJITH MOHAN J
वैज्ञानिक सी / Scientist C
भारतीय मानक ब्यूरो / Bureau of Indian Standards
दूसरा तल / IInd Floor
सीडब्ल्यूसी ऑफिस कॉम्प्लेक्स / CWC Office Complex
मावली रोड, गांधी नगर / Maveli Road, Gandhi Nagar
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कोच्ची-682 020 / Kochi-682 020