

CERTIFICATE

NELTEX Development Co., Inc. is producing Nexpipe uPVC sanitary pipes with sizes ranging from 63 to 110 mm intended for sewer and drainage applications outside the building. Below are the dimensional specifications:

Nominal Outside Diameter	Mean Outside Diameter (mm)	Wall Thickness (mm)	Effective Length (Meter)
63mm	57.00 – 57.30	2.540 – 2.994	3M
90mm	82.35 – 82.75	3.700 – 4.270	3M
110mm	106.84 – 107.28	3.810 – 4.391	3M

Neltex UPVC sanitary pipes are inspected and tested in conformance to ASTM D2729 Standard Specification for Polyvinyl Chloride Sewer Pipe and Fittings. Below is the summary of the Physical and Mechanical Properties that is complied by Neltex UPVC sanitary pipes:

Properties	Standard Requirement	Test Method
Heat Reversion	5% max	ISO 2505
Resistance to Acetone	No sign of delamination or disintegration	ISO 3472
Resistance to External Blows	True impact rate shall not exceed 10%	ISO 3127
Flattening	No evidence of splitting, cracking or breaking when flattened to 40% of the outside diameter	ASTM D2241
Pipe Stiffness	Shall conform to the requirements of ASTM D2729	ASTM D2412

Prepared by:


M. R. Mercado
 QA Officer

LABORATORY TEST RESULT

PRODUCT: Nexpipe Sanitary uPVC Pipes

A. Dimension - Reference Standard ASTM D2729

Pipe Size	Outside Diameter		Wall thickness		Remarks
	Standard	Result	Standard	Result	
63mm	57.00 - 57.30mm	57.00 - 57.22mm	2.540 - 2.994mm	2.60 - 2.74mm	Passed
90mm	82.35 - 82.75mm	82.40 - 82.50mm	3.700 - 4.270mm	3.75 - 3.85mm	Passed
110mm	106.84-107.28mm	106.9 - 107.1mm	3.810 - 4.391mm	3.84 - 4.05mm	Passed

B. Resistance to External Blows (Impact Test) - Reference Standard ISO 3127

Pipe Size	Standard Requirement	Result	Remarks
63 - 110mm	True Impact Rate (TIR) shall not exceed 10% where TIR = total no. of breaks / total no. of blows	0%	Passed

C. Flattening Test - Reference Standard ASTM D2241

Pipe Size	Standard Requirement	Result	Remarks
63 - 110mm	No evidence of splitting, cracking or breaking when flattened to 40% of the outside diameter	No sign of splitting or cracking	Passed

D. Heat Reversion Test - Reference Standard ISO 2505-1

Pipe Size	Standard Requirement	Result	Remarks
63 - 110mm	5% maximum after 1 hr at 150°C	2.1 - 3.4%	Passed

E. Resistance to Acetone - Reference Standard ISO 3472

Pipe Size	Standard Requirement	Result	Remarks
63 - 110mm	No sign of delamination or disintegration after 2 hrs.	No delamination or disintegration	Passed

F. Pipe Stiffness - Reference Standard ASTM D2412


Pipe Size	Standard Requirement	Result	Remarks
63mm	407 kPa	1,000 kPa	Passed

G. Tensile Strength - Reference Standard ISO 527-1

Pipe Size	Standard Requirement	Result	Remarks
63 - 110mm	28 MPa minimum	46.5 MPa	Passed

We hereby certify that the above physical and mechanical laboratory test results are true and correct as contained in the quality records of the company.

Test Verified by:


Marjorie R. Mercado
 QA Officer