look inside

nikpol™

aquaplus

technical data sheet

Product Specifications
Aquaplus

Test sample 16mm x 0.6 density

Produced to the Ministry of Light Industry P.R.C.
Standard QB-T 2463.2.99

Inspection Items	Unit	Standard	Result	Evaluated
Apparent Density	kg/m³	≤800	580	Pass
Shore Hardness	D	≥55	78	Pass
Tensile Strength	Mpa	≥10	10.2	Pass
Elongation at Break	%	≥10	10.6	Pass
Charpy Impact Strength	KJ/m2	≥12	25	Pass
Vicat Softening Point	°C	≥70	74	Pass
Heat Deflection	%	±2.0	-1.0	Pass
Water Absorption	%	≤1.0	0.8	Pass
Bending Strength	Mpa	≥20	20.2	Pass
Modus of Elasticity in Static Bending	Mpa	≥600	1580	Pass
Screw Grip Force	N	≥800	870	Pass

LEAD AND ORGANOTIN FREE

Aquaplus supplied by Nikpol are the next generation of polymer board to NEMA. They have the same performance characteristics but contain NO LEAD and NO ORGANOTIN compounds in their formula.

The above standards form part of our quality control regime and all shipments are certified by our manufacturer to conform to these standards .

Explanations Of Test Information

The tests are based on a standard sheet of Aquaplus 16mm with 0.6Density.

Apparent Density:
Refers to the density of the material in the sheet. It is measured in kilograms per cubic meter. Our density is 580 to 620 kg per cubic meter (we generally refer to it as .06 density.

Shore Hardness:
Shore hardness is a scale used to measure the surface hardness of a product , the "D" scale of shore hardness is a scale used to measure hardness in rubber and rigid plastic type products , the higher the number the harder the surface hardness.

Tensile Strength:
This measures the force required to break the product. It is measured in MPa (Megapascals), the higher the number the stronger the product.

Elongation at Break:
This measure indicates how far a material can be stretched before breaking, it is represented by the % the material is able to stretch.

Shore Hardness:
Shore hardness is a scale used to measure the surface hardness of a product , the "D" scale of shore hardness is a scale used to measure hardness in rubber and rigid plastic type products , the higher the number the harder the surface hardness.

Charpy Impact Strength:
This measures the amount of energy absorbed by the product at its breaking point, and is calculated in Kilojoules per square meter. The higher the number the more capable a product is of withstanding force.

Vicat Softening Point:
This measures the softening point of a product subject to heat. It is calculated by calculating at what temperature a sample will be penetrated by a flat ended needle to the dept of 1 mm under 10 newtons of force. The result shown here is measured in °C and the higher the number the more resistant the product is to heat deformation.

Heat Deflection:
This is a measurement of product deformation under given loads and corresponding temperatures, the smaller the % the less sensitive the product is to changes in heat.

Water Absorbtion:
The amount of moisture a product absorbs when fully submersed, the result is given in % of total mass. The smaller the number the more waterproof the product is.

Bending Strength:
Is a measure of a products ability to bend without breaking, that is, bend and return to its original form. It is measured in Mpa, the higher the number the more flexible the product.

Modulus of Elasticity in Static Bending:
This measures the stiffness of material and measures the increase and decrease in length as forces are applied on it. (pulled or pushed) These results are measured in Mpa and the higher the number the stiffer the material.

Screw Grip Force:
This is a measurement of what force can be applied to a predetermined size of screw before it fails to grip the material, The results are measured in Newtons and a higher number indicates Better grip ability.

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UV Ratings

Test method: ASTM G154-06, ISO 105-A02: 1993 Cor2: 2005

Test conditions:
Exposure cycle: ASTM G154-06 cycle 1
Lamp type: UVA-340
8h UV at (60±3)°C BPT, 0.89W/(m²·nm)@340nm
4h condensation at (50±3) °C BPT

Exposure period:
300h

Test result(s):
Grey scale: 2

Acoustic Properties

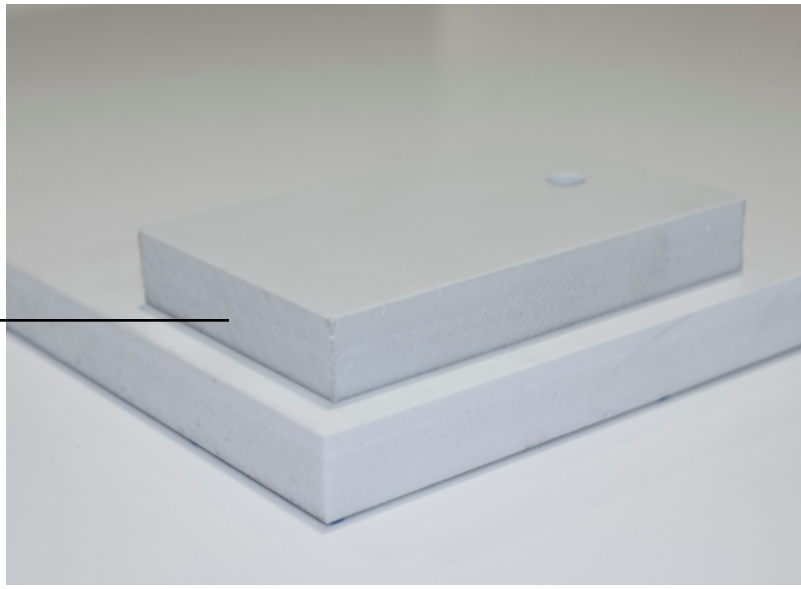
Sound attenuation-frequency range 100-3500Hz

Thickness	Attenuation
3mm	18dB
5mm	21dB
6mm	22dB
9mm	25dB
12mm	29dB
16mm	33dB
18mm	35dB

Thermal Properties

Thermal conductivity K: 0.06W/m°K

Thickness	Value (Thermal resistance R:)
3mm	0.20m²·K/W
5mm	0.23m²·K/W
6mm	0.24m²·K/W
9mm	0.26m²·K/W
12mm	0.30m²·K/W
16mm	0.34m²·K/W
18mm	0.36m²·K/W



Explanations Of Test Information

The tests are based on a standard sheet of Aquaplus 16mm with 0.6Density.

UV Ratings:
This is a test to indicate how a product will perform when subject to UV radiation; the result of 2 on the grey scale indicates that the product when exposed to the sun without any finish will over time develop a yellowing of the surface.

Acoustic Properties:
This is the measure of the product's ability to reduce the transmission of sound. Sound can either be reflected, or absorbed and turned into another form of energy; the result of these two properties is referred to as sound attenuation. These results show the amount of sound the product is able to reflect or absorb; the results are given in Decibels reduction per thickness of sheet at the prescribed frequency range.

Thermal Properties:
Thermal properties relate to a products ability to (1) Conduct heat, and it's reciprocal, (2) Resistant to heat.

(1) The Thermal conductivity of a product is the rate that heat is transferred through it , and is referred to as its K value , (Kelvin value)and is measured in watts per metre x K

(2) Thermal Resistance is the reciprocal of Conductivity; it is the ability of a product to resist the transmission of heat, referred to as its R value.

The lower the K value the better the heat insulation The Higher the R value the better the heat insulation. Aquaplus have similar Thermal Properties to wood fibre insulation.

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