



DION INCORPORATION

An ISO 9001:2008

Manufacturer: Building Materials

(uPVC Roofing Sheet, Metal Roofing Sheet, PVC Ply and Accessories)

Company Profile:



DION INCORPORATION (An ISO 9001:2008 Certified Company) is a professional new enterprise providing complete roofing system in India. The company has ventured into producing **uPVC (Unplasticized Polyvinyl chloride)** corrugated three layer Roofing sheets popularly known as Plastic Roofing Sheet under the brand name DION, in the year 2011.

DION uPVC sheets are optimum choice for **roofing and cladding**. uPVC roofing sheets is the best replacement to conventional asbestos, metal G.I. sheets, fiberglass sheets and ceramic tile sheets, considering its property of **heat insulation, sound insulation, water resistance, chemical and alkali resistance, corrosion proof, fire retardant, eco friendly**. They are easy to install and move, light weight as well as cost effective in installation. Not only that, but it can **save construction cost up to 70%**.

DION INCORPORATION is promoted by none other than **SAMAY Group**. The group that is better known as World's leading clock manufacturers. DION with the inceptions of the new brand, which follows quality standards and work ethics of "SAMAY" has a reputation of beating all competitive brands and emerging as a product leader in the manufacturing field.

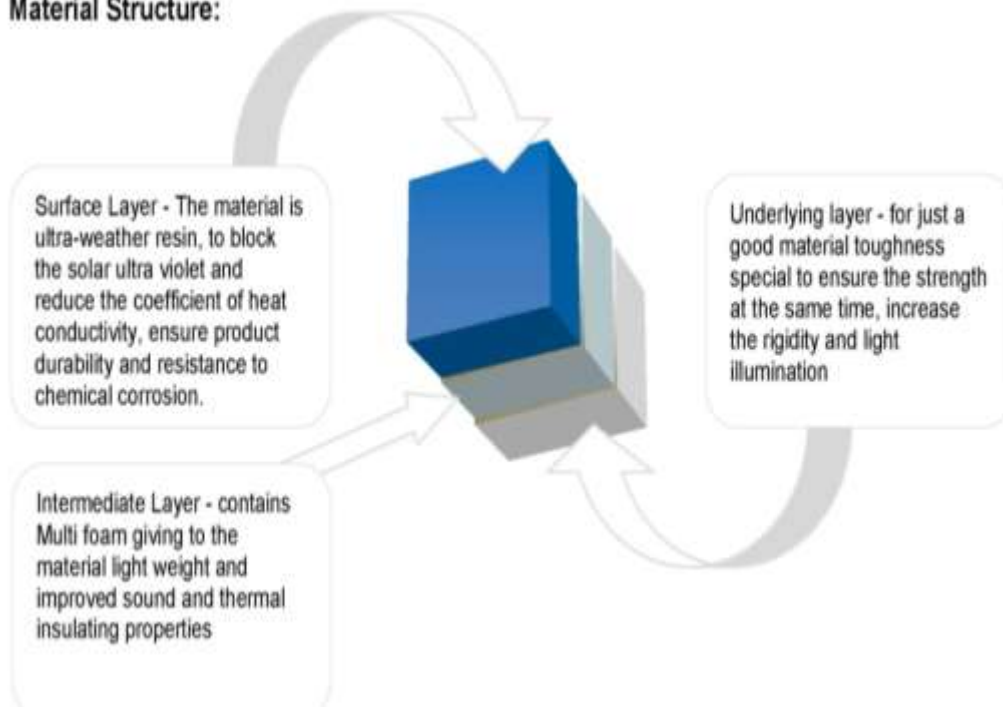
DION Quality & Aesthetics - A perfect combination to match your roofing needs.

Product Information:

DION is a modern rigid three layer **Un-plasticized polyvinylchloride** (uPVC) roofing sheets. The advanced technology of manufacturing ensures superior quality and performance of the roofing product.

DION is an optimum choice for roofing & cladding in civil and industrial construction. It can be used in many applications both exterior and interior i.e. Factory Building, Warehouses, Market, Vehicle Parking sheds, Farm House, Water Resorts, Cottages, Chemical Industries, Animal House, Construction House, School, Hotels etc.

Material Structure:



Properties of uPVC Material:

Property	Test Method	Value
Density	ASTM D 792	1.47 gm/cc
Softening Temp. at 10 N	ASTM D 1525	90.6 °C
HDT 66 PSI	ASTM D 648	71.9 °C
HDT 264 PSI	ASTM D 648	66.2 °C
Rate of Burning	---	<5 mm
Tensile Strength at break	ASTM D 638	410 Kg/cm ²
Elongation at break	ASTM D 638	32 %
Oxygen Index	ASTM D2863	38 %
Flammability	UL94	Match with V ₀
Water Absorption	ASTM D 570	0.07 %

Product Specifications:

DION uPVC Roofing Sheet



Trapezoidal Profile

Thickness (mm): 1.5, 2.0, 2.5, 3.0, & 3.5
 Width (mm): 1130, Cover Width (mm): 1050
 Length : Standard (ft.) 8', 10', 12' & Customizable up to 20'
 Color: White, Off white, Blue, Green, Gray & Terracotta



Round Profile



ASA Tile Sheet -Royal

Thickness (mm): 2.5
 Width (mm): 1050,
 Cover Width (mm): 960
 Length (mm): 2410, 3070, 3730
 Color: Gray & Terracotta



ASA Tile Sheet -Classic

Thickness (mm): 2.5
 Width (mm): 1080,
 Cover Width (mm): 960
 Length (mm): 2500, 3000, 3750
 Color: Gray & Terracotta



Metal Roofing Sheet



Polycarbonate Sheet



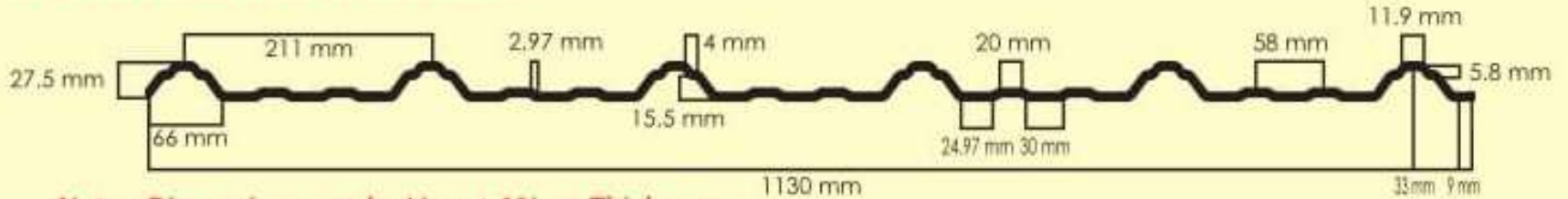
WPC Foam Board



PVC Foam Board

Profile Drawing:

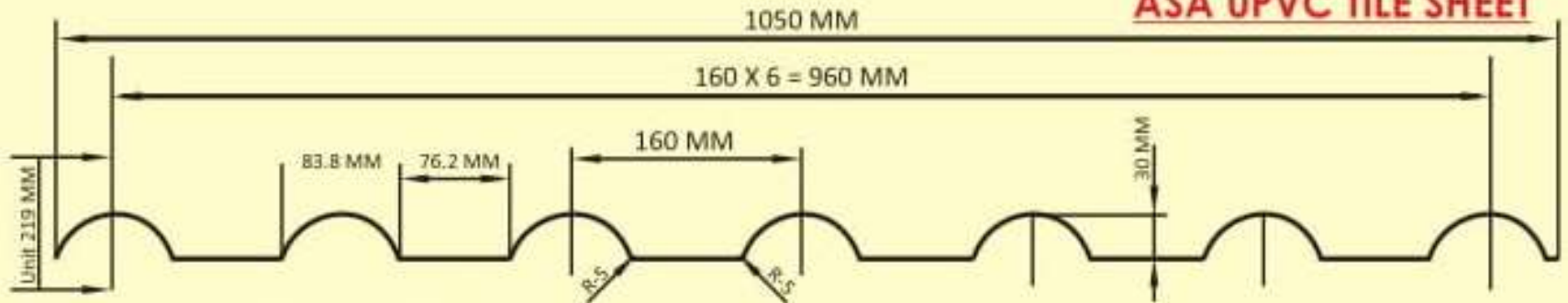
TRAPEZOIDAL WAVE PROFILE



Note : Dimensions can be Vary $\pm 1\%$ on Thickness

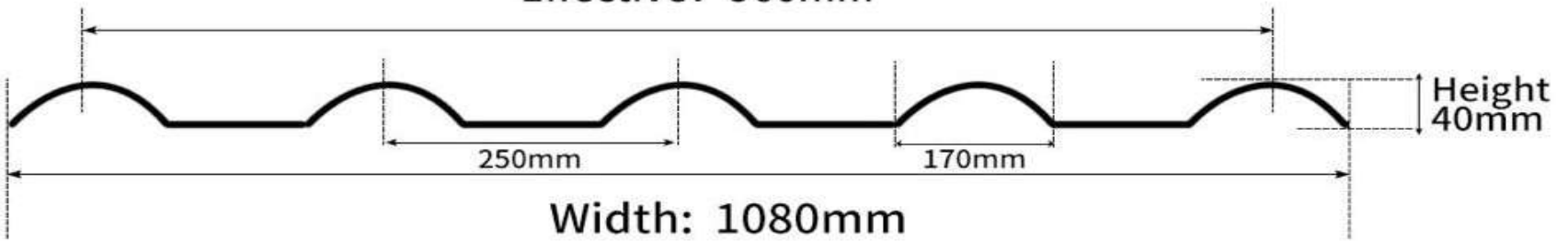
Trapezoidal Profile

ASA UPVC TILE SHEET



ASA Tile Sheet -Royal

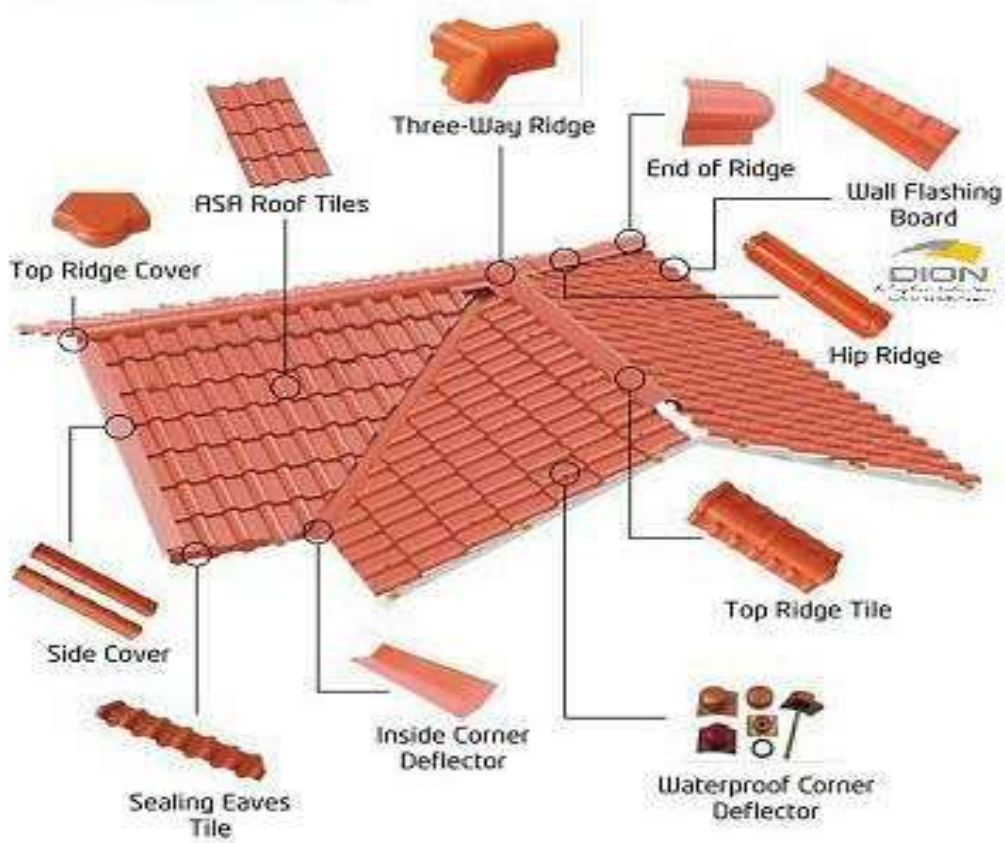
Effective: 960mm



Width: 1080mm

ASA Tile Sheet -Classic

DION Roofing Sheet Accessories:



uPVC Fixer Set & uPVC Ridge (1130mm X 275mm X 275mm)



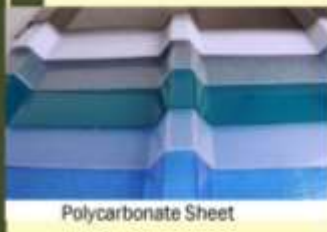
Base Dia: 21"
Top Plate Size: 13.8"
Thickness of Wings: 2.0mm
Height: 13.8"
Weight: 4.150 kg
Exhaust Capacity: 900-1000 C.F.M.
Coverage Area: 350-400 Sq. ft.
Wind Speed: 5-8 K.M.H.



Base Plate Thickness: 2.0mm
Length: 1700mm
Width: 1130mm & 1060mm



Thickness: 2.0mm
Length: 1750mm
Width: 1130mm & 1060mm
No. of Louvers Opening: 8nos.
Louvers Length: 730mm
Louvers Width: 110mm
Louvers Height: 55mm
Louvers Top Flat: 25mm
Distance between Two Louvers: 45mm
Open cut Height of Louvers: 35mm
Matching Profile Length both side: 250mm



Thickness: 1.5mm & 2.0mm
Length: Customizable
Width: 1130mm & 1060mm
Color: Clear

Product Features:



Environmental protection and energy conservation: It is a kind of environmental-friendly, energy conservation and recycling building material popular in developed and developing countries.



Light Weight: The weight is 3.5 kg per square meters (2mm). Belonging to light structural material, it can effectively reduce the load of the building and save the assumption of building framework materials. In the mean time, it is easy to be handled and lifted, which reduces the construction cost.



Pressure Prevention: DION sheets has very good load bearing performance. No damaged when 150kg is evenly loaded with the support distance being 750mm.



Sound & Heat Insulation: The coefficient of heat conductivity is 0.104 W/m.0 C, which is about 1/3 of clay tile, 1/5 of 10-mm-thick cement tile, and 1/2000 of 0.5-mm-thick color-coated steel tile. It can well absorb the noise when influenced by storm, hail and windstorm etc..



Corrosion Resistance: DION sheets can resist the chemical corrosion of acid, alkali, salt etc. for a long time. The test proves that there is no chemical reaction when dipped in the salt, alkali etc.



Good water resistance: The surface material of DION is compact and doesn't absorb water without the problem of water penetration by micro pores. The single sheet is big and there is very few joint on the roof. The connecting point is tightly connected; therefore the sheet has the outstanding water resistance performance.



Flame Retardant: Self extinguishing, the main body material polyvinyl chloride resin and its chemical performance determine that it is difficult to be burned.



Cost effective & Non-Carcinogenic: Cost effective in installation and save construction up to 70%, overlapping waste doesn't exceed 8%. High utilization efficiency up to 95% and its good for life fully protected from health hazards.

Features	(Comparative Analysis Between Roofing Sheet) Material			
	Metal Sheet	Asbestos Sheet	Ceramic Tile Sheet	DION uPVC Sheet (2mm)
Tensile Strength	550 MP a	20 MP a	23 MP a	38 MP a
Flexural Strength	15 MP a	16 MP a	10 MP a	45-55 MP a
Thermal Conductivity	15 W/m. C°	0.46 W/m. C°	0.27 W/m. C°	0.104 W/m. C°
Pressure Prevention	Sheets will become flat & damage	Sheets will become fully breakage	Sheets will become fully breakage	Sheets will rebounded to its original shape
Weight of 1m² (kg)	4.20 kg	13.40 kg	55 kg	3.5 kg
Health Hazards	Insecure	Lung Cancer	Insecure	Nil
Energy Efficient	No	No	No	Excellent
Sound Insulation	Very Poor	Poor	Good	Good absorbing effect
Corrosive Resistance	Very Poor	Poor	Good	Excellent
Moisture Resistance	No	No	No	Excellent
UV Resistance	No	No	No	Excellent
Economical Installation	High	Very High	Very High	Very Low
Need for Insulation Materials	Involve more labor and effort	Highly brittle, can crack while working	Involves more labor and effort, Highly breakage while working	Easily cut, drilled or worked with standard carpentry tools

Benefits of DION uPVC Sheets:

- Heat insulation up to 40% & Excellent sound insulating properties.
- Fire retardant - Non-combustible material conforms to international fire safety standards. Self-extinguishing does not propagate fire.
- High Impact Strength & Light weight: 3.5Kg/m² (2mm).
- Chemical Resistance: Resistance to acids, alkalis, salts and solvents, corrosion.
- 100% protection against harmful U.V. radiations. (Resistance to the influence of ultra-violet rays & Highly UV protected)
- Excellent Non Corrosive.
- Climate Resistance - DION sheets can be use in any different climate.
- Hail Resistance with stable volume.
- Excellent Water Proof properties.
- Excellent thermal insulation.
- Highly flexible - can be bent perpendicular or parallel to the corrugation.
- High Strength Characteristic: Tensile strength 38 Mpa, Flexural strength 45-55MPa, Impact Resistance 50-60kj/m².
- Temperature Resistance: Temperature usage Range: from -40 °C to +75 °C. Material withstands over 100 cycles of freezing and thawing.
- Corrosive Resistance: Ideal use for corrosive industrial environments
- Moisture Resistance: Excellent use for some industries i.e. chemical, pharmacy, fertilizer, leather, process etc.
- Non-conductor of electricity.
- Resistance to the extreme weather conditions: snow, hail & high wind pressure.
- Self-cleaning system.
- Eco friendly & energy efficient green product.
- Rust proof - ideal for use in coastal regions.
- Ability to withstand wind load, better usable in earthquake zones & coastal areas.
- Non-Carcinogenic: It's good for life, fully protected from health hazards.
- Hygienic - Suitable for contact with food stuffs, DION sheets can be used in the food industry.
- Easiness of installation : Easy to cut, sawed & nailed
- Virtually maintenance free.
- Economical Installation: save construction up to 70% and overlapping waste doesn't exceed 8%. High utilization efficiency up to 95%.
- Increase labor productivity and machinery efficiency.
- DION transparent sheets better for creation of sky-lights.
- Wide variety of available colors. Good aesthetic appeal.
- Wide Applications: DION sheets uses in Industrial, Commercial, domestic & Agricultural.
- Customizable: DION sheets can ne use in Interior and Exterior as per customer's requirements.
- Good Re-sale value: best usable for temporarily construction house or any project purpose.

Applications:

DION is an optimum choice for roofing, walling & cladding in civil and industrial constructions as per the efficiency and benefits it provides. It can be used in many applications both exterior and interior. i.e. Industrial Places, Commercial Places, Residential Places & Agricultural firms etc. like Factory Building, Warehouses, Market, Vehicle Parking sheds, Farm House, Water Resorts, Cottages, Chemical Industries, Animal House, Construction House, Schools, Colleges, Hotels, Sheltered Walkways, Security Guard Shelters, Roof Extensions, Summer Huts Cycles etc.



Installation Procedure:

INSTALLATION PROCEDURE

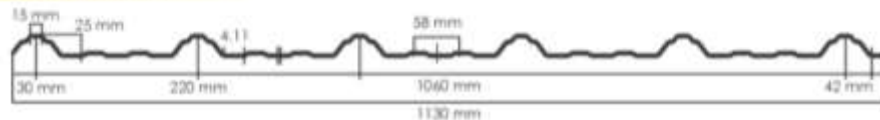


Procedure (uPVC Multilayer Roofing Sheets)

The fixing methods of DION roofing are very much similar to those for other conventional roofing. Besides saving man hours, its light weight nature enables easy and efficient construction.

While one of the most important roles of roofing is to fight the weather, they also have significant effects on the aesthetic, cost and durability of a building. In Roof Cladding, factors such as rainfall, wind speed, height of building and walking weight on roofs (arising out of maintenance) have considerable effect on design of roof slope, supporting structures and spacing between Purlins. When install, must be use the waterproof fixing accessory and always recommend to experienced fabricator/worker to install DION Roofing sheets.

Profile Specification



Thickness (mm): 1.0, 1.5, 2.0, 2.5, 3.0, **Weight (Kg.):** 1.0mm-1.8, 1.5mm-2.6, 2.0mm-3.4, 2.5mm-4.0, 3.0mm-5 Approx. **Length (Mtr.):** 2.0, 2.5, 3.0, 3.66 and can be customized up to 6.0 Mtr. **Color:** White, Blue, Green, Terracotta, Ivory & Gray

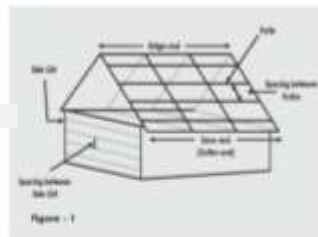
Roof & Wall Cladding

Laying of Purlins

Fix the bottom purlin first. The roof truss structure adopts sectional steel or wood as purlin, the purlin is required to be flat without deformation, and two purlins must be in parallel with uniform span. For DION sheet with thickness of

Purlin Span : 1.5 mm < 1.5 Feet, 2 mm < 2 Feet, 2.5 mm < 2.5 Feet, 3 mm < 3 Feet

For Wall cladding thickness of onwards 2.0mm the purlin span of <3.3feet is recommended.



Wind Load

DION Sheets (2mm) can withstand a load intensity of 220kg/sq.mtr without showing any structural distress or failure, prevailing winds.

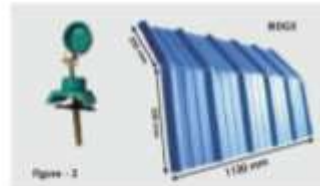
Curved Roofs (Figure-2)

When the frame design is established, continuously setup the lines courses to get the right positions of purlins. DION sheets (2mm) are recommended for curved structures with minimum radius of 3mtr. on 12 feet.



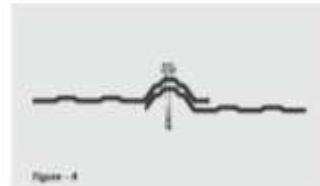
DION Fixing Accessory (Figure-3)

The special waterproof accessory is very important for installation. We need to use the special waterproof accessory to fix the roofing sheet properly. To avoid the roof sheet have unusual circumstance (such as water-leakage, distortion etc.), then effect the lifespan of products. With the special accessories can be waterproof, strong wind withstand and corrosion resistance.



Fixing of Sheet (Figure-4)

Start fixing sheets at the opposite end of the roof from prevailing winds. Walking over sheets must be done only at supported locations. To walk across, walking boards must be used. Overhang is not meant for foot traffic.



The structured of accessory fully sealed with screw lead, screw head so as to solve the corrosion, waterproof apron aging and screw holes of the leakage problem, pressed with a waterproof apron below, to prevent infiltration of surface water watt screw hole, screw fixed of the increase, also plays against typhoon function.

The accessory must be installed in the top of wave. We request to use the accessory screw minimum 5 set/sq.mtr and over lap 60mm is recommended, minimum recommended end lap for roof sheet is 150 mm and for wall is 100 mm. The transverse lap joint must be a complete lap jointed slope, the longitudinal lap joint length >1feet. End overhang <1feet and Side overhang <0.3feet. In the case of fixing by tapping screw, drill a hole in advance, the aperture must be 50% larger then the screw diameter, fixing by DION hook is recommended. Screw and DION hook can be used together, the screw must not be over-tightened, and otherwise stress will occur, resulting in local crack on tile surface.

Drilling and Cutting

DION sheets are easiness for installation easy to cut & drill. For cutting, recommended plastic sharp cutter machine for avoid damage or crack on the sheet.

General Care & Maintenance : Handling & Storage

To preserve the surface ensure that the sheets are handled using clean, dry gloves, and do not slide sheets over rough surfaces, or against each other. Store DION sheets neatly stacked, a little above ground level. The sheets should be fully supported on a firm base, of the same dimension as the sheet and at a slight slope. Keep the panels ventilated. Do not leave, transport or store DION uPVC sheets in direct sunlight before or during the installation process. If outdoor storage cannot be avoided, cover the sheets with a color tarpaulin to avoid solar heat gain between the panels.

Note

Each user of the material should make his own tests to determine the materials suitability for his own particular use. Statements concerning possible or suggested uses of the materials described herein are not to be construed as assurances by the company of the suitability. Each user will have to assess the suitability which differs from case to case.

DION or its Distributor / Stockists / Dealers cannot be held responsible for any losses incurred through incorrect installation/use of the material. In accordance with our company policy of continual product development you are advised to check with your local DION supplier to ensure that you have obtained the most up-to-date information.

All information given herein is in good faith. DION shall not be liable for any damages arising out of incorrect use or interpretation. The Company reserves the right to change any of the above specifications without any prior notice.

Our Prestigious Clients:



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DION uPVC Roofing Sheet Test report:

DION INCORPORATION

Manufacturer: uPVC MULTILAYER ROOFING SHEETS
Office: 402, Raju, A, Laxmi, Chok, Nager, 301 011, Gurgaon, India
Ph: +91 9912455555 e-mail: info@dioninc.com website: www.dioninc.com



DION uPVC Multilayer Sheet Test Value

Properties	Test Value	Test Method
Visit Softening Temperature	90.6 °C	ASTM D 1525
HDT at 1.8 MPa	66.2 °C	ASTM D 648
Flexural Strength	336.2 Kg/cm ²	ASTM D 790
Flammability	Match with V ₀	UL 94
Tensile Strength	410 Kg/cm ²	ASTM D 638
Elongation At Break	32%	ASTM D 638
Oxygen Index	38%	ASTM D 2863
Chemical Resistance	0.22%	ASTM D 542
Apparent Density	1.47 gm/cc	ASTM D 792
Determination of water absorption	0.07%	ASTM D 570
Charpy impact strength	40.2 J/m	ASTM D 256
HDT 66 psi	71.9 °C	ASTM D 648
HDT 264 psi	66.2 °C	ASTM D 648
Rate of burning	<5 mm	ASTM D 635

Material Composition Details:

- PVC Resin Made of Balance or LG: 66 % of 1kg.
- Fillers (calcium)- 25 % of 1kg.
- Additives (Impact modifier, processing aid, one tack stabilizer, wax, UV stabilizer, Stannous dioxide)- 9% of 1kg.
- Thickness of sheet, Top/Bottom Layer 30% of the total thickness.
- Thickness of sheet, Middle Layer 40% of the total thickness.

This is for your reference.

DION INCORPORATION

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Alekh PLASTICS TESTING CENTRE

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VATVA, AHMEDABAD-382448. TEL-FAX : 25800446
E-mail : alekh_plastics@yahoo.com

TEST REPORT

No: TR/15-14/318

Date: 15/12/2014

Issued to: M/s Dion Incorporation
Location: Vatva - Gujarat

Sample Details: UPVC multilayer roofing sheet-2mm (as stated by the party)
Your reference: Received by courier on: 18/12/2014

Test Results

Sample	Test property	Unit	Test value	Remarks
UPVC sheet 2mm	Chemical resistance	---	No visual effect	Ref: ASTM D 542 (in 18% HCl for 24 hrs at ambient condition)
	Chemical resistance	---	No visual effect	Ref: ASTM D 542 (in 20% NaOH for 24 hrs at ambient condition)
	Chemical resistance	---	No visual effect	Ref: ASTM D 542 (in saturated solution of NaCl for 24 hrs at ambient condition)



[Signature]
Authorized Signatory

N.B. No liability, whatsoever is accepted for this report. Valid only for the sample given for testing. Not for publication.

...towards making quality feasible!

CIPA / QF / 5.10.1

सेन्ट्रल इंस्टिट्यूट ऑफ प्लास्टिक्स
इंजीनियरिंग एण्ड टेक्नोलॉजी
(एस्टब्लिशमेंट ऑफ टेक्नोलॉजी)
एन. पी. ए. डी.सी. बिल्डिंग, नगर, अहमदाबाद- 382 448
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PLASTICS TESTING CENTRE

UPVC Multilayer Roofing Sheet Test Report No. 4264

PART C TEST RESULTS

Sr. No.	Property	Test Method	Unit	Test Value
1	Density	ASTM D 792	gm/cc	1.47
2	Visit Softening Temp. at 10 N	ASTM D 1525	°C	90.6
3	HDT 66 PSI	ASTM D 648	°C	71.9
4	HDT 264 PSI		°C	66.2
5	Rate of Burning	---	mm	<5
6	Tensile Strength at break	ASTM D 638	Kg/cm ²	410
7	Elongation at break		%	32
8	Oxygen Index	ASTM D 2863	%	38
9	Flammability	UL 94	---	Match with V ₀
10	Water Absorption	ASTM D 570	%	0.07

PART D

REMARKS : Nil

- NOTE
- The results related only to the items tested
 - The report shall not be reproduced in full/part without written approval of the laboratory

[Signature]
Authorized Signatory
Manager (Testing)

[Signature]
Authorized Signatory
Deputy Director
2 of 2

5001-1000954.11R.G.

Corporate Office: CPET, Gandhi, Chennai - 600 032



Thank You ...



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