

POLYCARBONATE

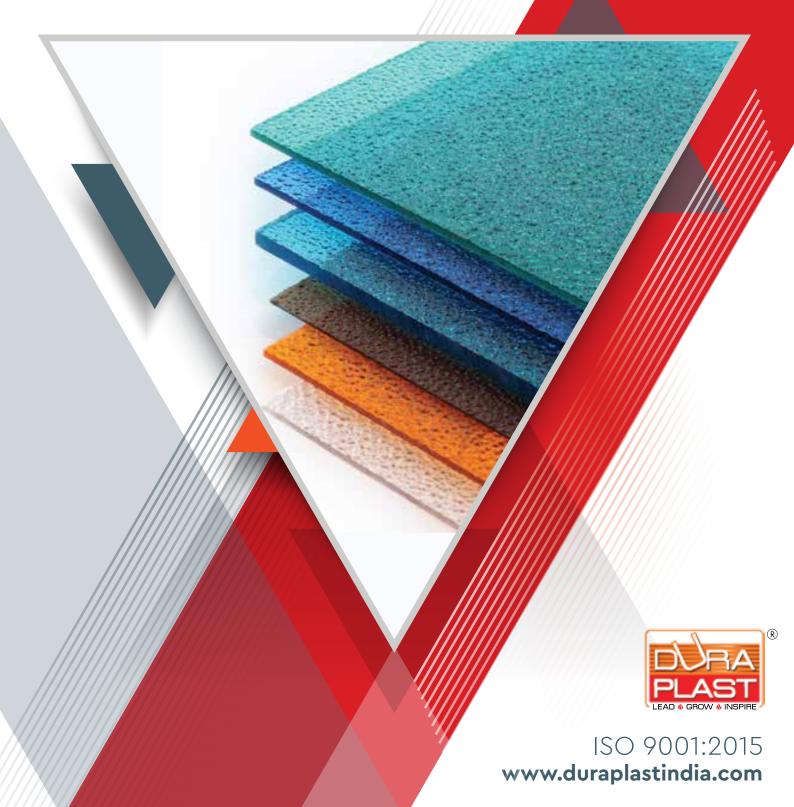
SOLID SHEETS













RHINGATUFF® POLYCARBONATE

SOLID SIGETS

Toughness Beyond Imagination

- 1. Strong And Tough
- 2. Unsurpassed Performance
- 3. Qualitative Superiority
- 4. Enduring Durability
- 5. Reliable
- 6. Value For Money

PROUDLY MANUFACTURED IN INDIA BY





The SUN, the hearth of affection and life, pours burning love over the delighted EARTH - Arthur Rimbaud

It takes about eight minutes for light emitted by the Sun to reach the Earth and it's well worth the wait! We take pride in harnessing Solar Power to bring cheer and warmth to your lives.

After delighting you with our Natural Turbo Roof Ventilation Systems for over a decade, we are elated to bring to you world class Polycarbonate Solid Sheets to naturally illuminate your commercial spaces and shop floors. Besides Glazing and Skylighting, RHINO TUFF Polycarbonate Sheets have wide ranging industrial and commercial uses.

Born in India, our RHINO TUFF Polycarbonate Solid Sheets are delivering tremendous value to their patrons the world over by seamlessly combining superlative performance, excellent finish and enduring durability at an affordable price.

RHINO TUFF PC Solid Sheets are extruded using the world's most advanced Sheet Extrusion Technology and using the best quality Polycarbonate Granules. Befitting their name, RHINO TUFF Polycarbonate Sheets are as strong and as tough as a Rhinoceros and exhibit the following superior design and performance features

- 1. Mechanically strong
- 2. Tough and impact resistant
- 3. Shatter proof and practically unbreakable
- 4. Light weight and easy to handle and install
- 5. U.V. Coated for exemplary resistance to U.V. Rays
- 6. Can easily be cut, cold bent or thermoformed
- 7. Can be made available in many profiles and corrugations
- 8. Available in a wide range of surface textures and colors
- 9. Transparency level ranging from as low as 35% to as high as 90%
- 10. Can be as transparent as clear glass.
- 11. Fire retardant and self extinguishing
- 12. Superior electrical and thermal insulation properties
- 13. Excellent optical properties
- 14. High service temperature range of -20°C to 140°C
- 15. Fairly good resistance to chemical corrosion
- 16. Recyclable and environment friendly
- 17. Guaranteed performance
- 18. High value for money

















COMMON APPLICATIONS















PROPERTIES

PROPERTY	TEST METHOD	TEST CONDITIONS	UNITS-SI	VALUE
	PHYS	SICAL		
Density	D-1505		g/cm3	1.2
Water Absorption	D-570	24 hr. @ 23°C	%	0.15
	MECH	ANICAL		
Tensile Strength at Yield	D-638	10 mm/min	MPa	62
Tensile Strength at Break	D-638	10 mm/min	MPa	65
Elongation at Yield	D-638	10 mm/min	%	7
Elongation at Break	D-638	10 mm/min	%	→80
Tensile Modulus of Elasticity	D-638	10 mm/min	MPa	2,300
Flexural Modulus	D-790	1.3 mm/min	MPa	1,890
Flexural Strength at Yield	D-790	1.3 mm/min	MРа	93
-	D-790 D-256	-		
Notched Impact Strength Izod		23°C (73°F)	J/m	800
Notched Impact Strength Charpy	D-256	23°C (73°F)	J/m	800
Impact Falling Weight	ISO-6603/1b		J	50
Rockwell Hardness	D-785		R Scale	118
	THE	RMAL		
Long Terms Service Temperature			°C	-50 - +100
Short Term Service Temperature			°C	-50 - + 120
Heat Deflection Temperature	D-648	Load: 1.82 MPa	°C	130
Vicat Softening Temperature	D-1525	Load: 1 Kg	°C	150
oefficient of Linear Thermal Expansion	D-696	j	cmcm C u2070	6.5 × 10^-
Thermal Conductivity	C-177		W/m K	0.21
Specific Heat Capacity	C-351		kJ/kg°K	1.30
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	OPT	ICAL		
Haze	D-1003		%	←0.5
Light Transmission	D-1003		%	90
Refractive Index	D-542			1.57
Yellowness Index	D-1925			←1
	ELEC1	RICAL		
Dielectric Constant	D-150	1KHz		2.6
	D-150	1MHz		2.4
	D-149	1KHz		0.005
Dissipation Factor		41411		
	D-257	1MHz	V/	0.02
Dissipation Factor Dielectric Strength Short Time Surface Resistance		1MHz 500 V/s Ketley	Kv/mm Ohm	0.02 20 4.1x10 15





POLYCARBONATE PLAIN SHEETS & ROLLS

RHINGATUFF



PC PLAIN SHEETS-STANDARD SIZES & WEIGHT

THICKNESS (In MM)	STD. LENGTH	STD. WIDTH	WT./SQ. MTR. (In Kilos)	PACKING
1.20	30.50 Mtr. (100 Ft.)	0.90 Mtr. (3.0 Ft.) / 1.22 Mtr. (4.0 Ft.) / 1.52 Mtr. (5.0 Ft.) / 1.83 Mtr. (6.0 Ft.) / 2.13 Mtr. (7.0 Ft.)	1.44	Flat Sheet or Roll
1.50	30.50 Mtr. (100 Ft.)	0.90 Mtr. (3.0 Ft.) / 1.22 Mtr. (4.0 Ft.) / 1.52 Mtr. (5.0 Ft.) / 1.83 Mtr. (6.0 Ft.) / 2.13 Mtr. (7.0 Ft.)	1.80	Flat Sheet or Roll
1.80	30.50 Mtr. (100 Ft.)	0.90 Mtr. (3.0 Ft.) / 1.22 Mtr. (4.0 Ft.) / 1.52 Mtr. (5.0 Ft.) / 1.83 Mtr. (6.0 Ft.) / 2.13 Mtr. (7.0 Ft.)	2.15	Flat Sheet or Roll
2.00	30.50 Mtr. (100 Ft.)	0.90 Mtr. (3.0 Ft.) / 1.22 Mtr. (4.0 Ft.) / 1.52 Mtr. (5.0 Ft.) / 1.83 Mtr. (6.0 Ft.) / 2.13 Mtr. (7.0 Ft.)	2.40	Flat Sheet or Roll
3.00	30.50 Mtr. (100 Ft.)	0.90 Mtr. (3.0 Ft.) / 1.22 Mtr. (4.0 Ft.) / 1.52 Mtr. (5.0 Ft.) / 1.83 Mtr. (6.0 Ft.) / 2.13 Mtr. (7.0 Ft.)	3.60	Flat Sheet or Roll
4.00	2.44 Mtr. (8 Ft.)	1.22 Mtr. (4.0 Ft.)	4.80	Flat Sheet
5.00	2.44 Mtr. (8 Ft.)	1.22 Mtr. (4.0 Ft.)	6.00	Flat Sheet
6.00	2.44 Mtr. (8 Ft.)	1.22 Mtr. (4.0 Ft.)	7.20	Flat Sheet
8.00	2.44 Mtr. (8 Ft.)	1.22 Mtr. (4.0 Ft.)	9.60	Flat Sheet
10.00	2.44 Mtr. (8 Ft.)	1.22 Mtr. (4.0 Ft.)	12.00	Flat Sheet
12.00	2.44 Mtr. (8 Ft.)	1.22 Mtr. (4.0 Ft.)	14.40	Flat Sheet

QUALITY SERIES

SERIES	QUALITY TYPE	MAKE OF PC GRANULES	UV COATING	WARRANTY*	REMARKS
RHINO SUPER STAR	Premium	Covestro	30 Microns - both sides	12 Years	
RHINO STAR	Commercial	SABIC	30 Microns - both sides	11 Years	
RHINO	Budget	Samsung/LG/ Mitsubishi/Lotte	30 Microns - both sides	10 Years	

^{*}Limited Warranty. Terms & conditions apply.





POLYCARBONATE COLD BENT PROFILED SHEETS

RHINGSTUFF



PC COLD BENT PROFILED SHEETS-STANDARD SIZES & WEIGHT

THICKNESS (In MM)	MAX. LENGTH	STD. WIDTH	APPX. WT. PER SQ. MTR. (In Kilos)	PROFILE	PACKING
1.20	7.50 Mtr.	1.06 Mtr. (3.50 Ft.) - 1.10 Mtr. (3.60 Ft.) or 1.29 Mtr. (4.25 Ft.)	1.65	4/5/6 crest	Sheet Form
1.50	7.50 Mtr.	1.06 Mtr. (3.50 Ft.) - 1.10 Mtr. (3.60 Ft.) or 1.29 Mtr. (4.25 Ft.)	2.07	4/5/6 crest	Sheet Form
1.80	7.50 Mtr.	1.06 Mtr. (3.50 Ft.) - 1.10 Mtr. (3.60 Ft.) or 1.29 Mtr. (4.25 Ft.)	2.48	4/5/6 crest	Sheet Form
2.00	7.50 Mtr.	1.06 Mtr. (3.50 Ft.) - 1.10 Mtr. (3.60 Ft.) or 1.29 Mtr. (4.25 Ft.)	2.76	4/5/6 crest	Sheet Form
3.00	7.50 Mtr.	1.06 Mtr. (3.50 Ft.) - 1.10 Mtr. (3.60 Ft.) or 1.29 Mtr. (4.25 Ft.)	4.15	4/5/6 crest	Sheet Form

QUALITY SERIES

SERIES	QUALITY TYPE	MAKE OF PC GRANULES	UV COATING	WARRANTY*	REMARKS
RHINO SUPER STAR	Premium	Covestro	30 Microns - both sides	12 Years	
RHINO STAR	Commercial	SABIC	30 Microns - both sides	11 Years	
RHINO	Budget	Samsung/LG/ Mitsubishi/Lotte	30 Microns - both sides	10 Years	

^{*}Limited Warranty. Terms & conditions apply.





RHINO TUFF POLYCARBONATE ONLINE PROFILED SHEETS

RHINGSTUFF



RHINO TUFF Polycarbonate Online Profiled Sheets are unique in more than one way.

They are directly extruded online and are not cold bent over a sheet press brake unlike conventional Polycarbonate Profiled Sheets.

They are superior in terms of design features, strength, dimensional accuracy, UV Coating intactness, performance and longevity.

- 1. Directly extruded and not cold bent
- 2. Mechanically stronger when compared with cold bent PC Sheets
- 3. Impact resistant and un-breakable
- 4. Can be provided with mini (baby) ribs for extra strength and stiffness and an anti-capillary groove for leakage protection
- 5. Uniform and accurate profile dimensions
- 6. Available in any length of up to 25.0 Ft. and in any profile
- 7. Can be up to 90% transparent like glass
- 8. Can be Glass Like Compact or textured Embossed or Diamond
- 9. No damage to the U.V. Coating during manufacturing
- 10. Fire retardant and self-extinguishing
- 11. Up to 12 year limited warranty
- 12. Surface engraved product information like warranty and date of manufacture

PC PROFILED ONLINE SHEETS - STANDARD SIZES & WEIGHT

THICKNESS (In MM)	MAX. LENGTH	STD. WIDTH	APPX. WT. PER SQ. MTR. (In Kilos)	PROFILE	PACKING
1.20	7.50 Mtr.	1.06 Mtr. (3.50 Ft.) - 1.10 Mtr. (3.60 Ft.) or 1.29 Mtr. (4.25 Ft.)	1.65	4/5/6 crest	Sheet Form
1.50	7.50 Mtr.	1.06 Mtr. (3.50 Ft.) - 1.10 Mtr. (3.60 Ft.) or 1.29 Mtr. (4.25 Ft.)	2.07	4/5/6 crest	Sheet Form
1.80	7.50 Mtr.	1.06 Mtr. (3.50 Ft.) - 1.10 Mtr. (3.60 Ft.) or 1.29 Mtr. (4.25 Ft.)	2.48	4/5/6 crest	Sheet Form
2.00	7.50 Mtr.	1.06 Mtr. (3.50 Ft.) - 1.10 Mtr. (3.60 Ft.) or 1.29 Mtr. (4.25 Ft.)	2.76	4/5/6 crest	Sheet Form
3.00	7.50 Mtr.	1.06 Mtr. (3.50 Ft.) - 1.10 Mtr. (3.60 Ft.) or 1.29 Mtr. (4.25 Ft.)	4.15	4/5/6 crest	Sheet Form

QUALITY SERIES

SERIES	QUALITY TYPE	MAKE OF PC GRANULES	UV COATING	WARRANTY*	REMARKS
RHINO SUPER STAR	Premium	Covestro	30 Microns - both sides	12 Years	
RHINO STAR	Commercial	SABIC	30 Microns - both sides	11 Years	
RHINO	Budget	Samsung/LG/ Mitsubishi/Lotte	30 Microns - both sides	10 Years	

^{*}Limited Warranty. Terms & conditions apply.





POLYCARBONATE CORRUGATED SHEETS

RHINGSTUFF



POLYCARBONATE CORRUGATED SHEETS - STANDARD SIZES & WEIGHT

THICKNESS (In MM)	MAX. LENGTH	STD. WIDTH	APPX. WT. PER SQ. MTR. (In Kilos)	CORRUGATION	PACKING
1.20	7.50 Mtr.	1.06 – 1.30 Mtr.	1.42	GC, ACC, Other	Sheet Form
1.50	7.50 Mtr.	1.06 – 1.30 Mtr.	1.76	GC, ACC, Other	Sheet Form
1.80	7.50 Mtr.	1.06 - 1.30 Mtr.	2.11	GC, ACC, Other	Sheet Form
2.00	7.50 Mtr.	1.06 – 1.30 Mtr.	2.34	GC, ACC, Other	Sheet Form
3.00	7.50 Mtr.	1.06 - 1.30 Mtr.	3.52	GC, ACC, Other	Sheet Form

QUALITY SERIES

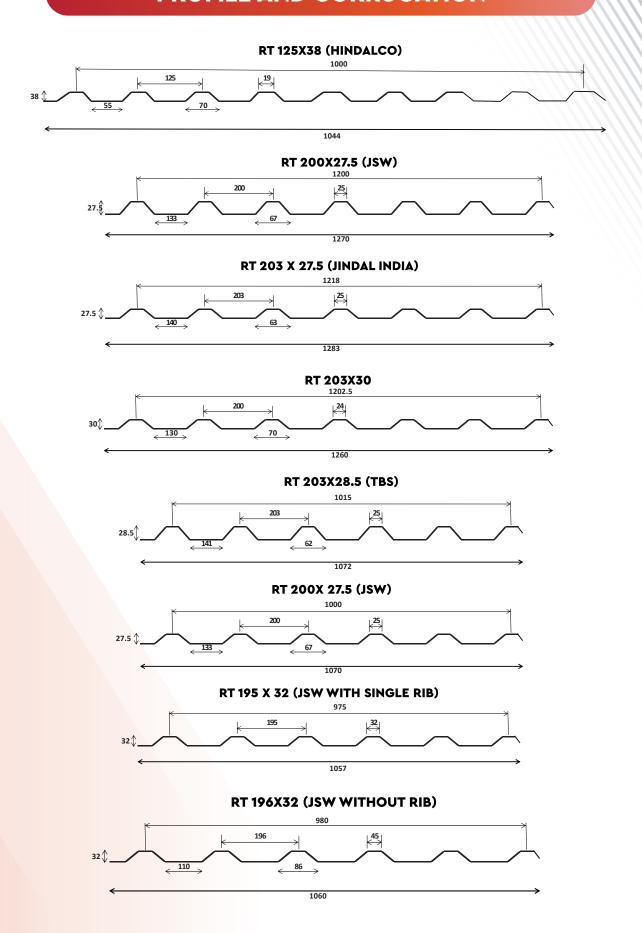
SERIES	QUALITY TYPE	MAKE OF PC GRANULES	UV COATING	WARRANTY*	REMARKS
RHINO SUPER STAR	Premium	Covestro	30 Microns - both sides	12 Years	
RHINO STAR	Commercial	SABIC	30 Microns - both sides	11 Years	
RHINO	Budget	Samsung/LG/ Mitsubishi/Lotte	30 Microns - both sides	10 Years	

^{*}Limited Warranty. Terms & conditions apply.

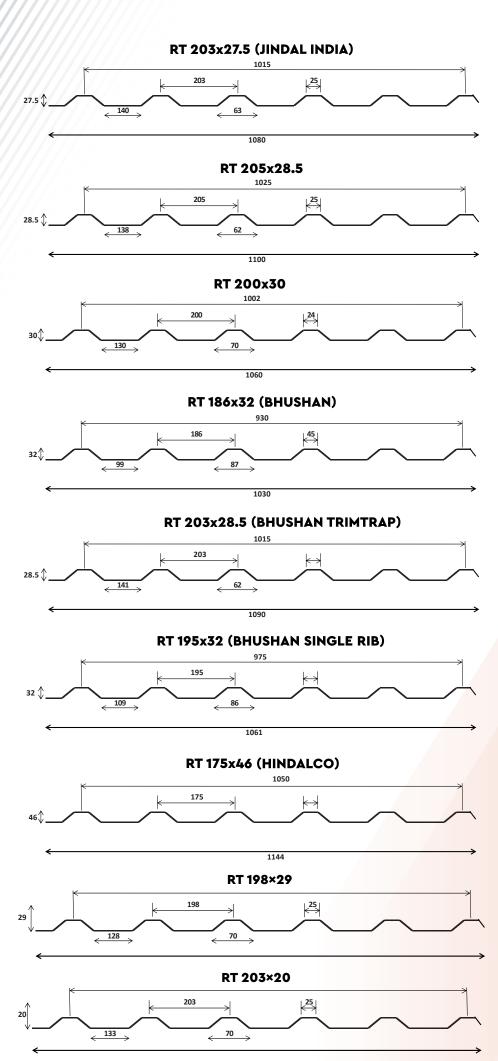




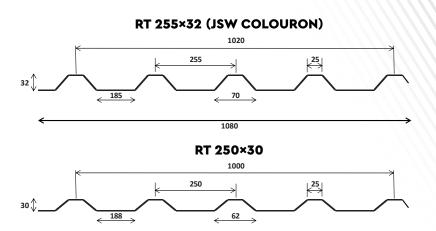
PROFILE AND CORRUGATION



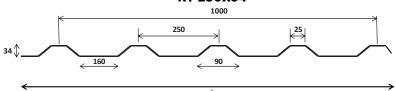




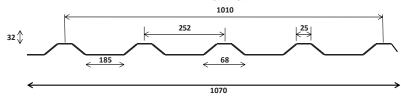




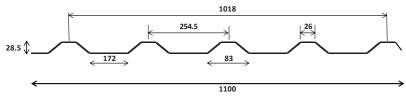
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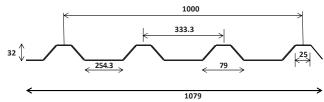
RT 252X32



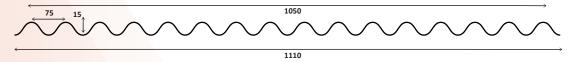
RT 254.5X8.5 (BHUSHAN WITH DOUBLE RIB)



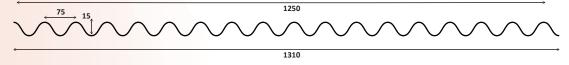
RT 333.3X32 (KIRBY)



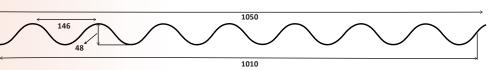
GC - I



GC - II



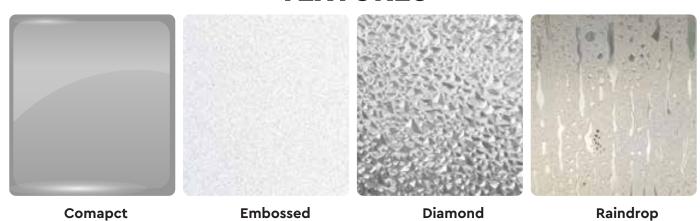
ACC (ASBESTOS)





TEXTURES AND COLORS

TEXTURES



COLORS







- 1. Store over a flat surface
- 2. Keep away from moisture, direct sunlight and corrosive gases and substances

CLEANING INSTRUCTIONS

- 1. Clean easily with warm water and soap
- 2. Avoid use of thinners, solvents or chemicals
- 3. Do not use abrasives or sharp or pointed objects

INSTALLATION GUIDELINES

- 1. Provide proper roof ventilation
- 2. Roof slope and purlin distance should be as per industry standards and as advised by experts
- 3. RHINO TUFF PC Sheets should be installed by trained technicians and under expert supervision and guidance
- 4. Lower rug of roof sheets including PC Sheets should be laid first and roof sheet overhangs should be limited to 100 MM
- 5. Use a pair of shear, fine toothed hand saw or a circular saw to cut RHINO TUFF PC Sheets. A drill machine can be used to drill holes
- 6. RHINO TUFF PC Sheets can be fastened using self-tapping screws of an appropriate size
- 7. The dia of holes should be marginally more than the fasteners to allow thermal movements
- 8. Avoid use of sealants such as silicone over sheet joints. Use a butyl tape instead
- 9. Peel off PE Film from the edges while installing. Remove PE Film completely after installation

SAFETY INSTRUCTIONS

- 1. Installation should be carried out by trained technicians under expert supervision and guidance
- 2. Always use safety equipment such as fully body harness, helmets, life ropes and safety nets while carrying on work over roofs
- 3. Avoid roofing work during wet weather
- 4. Walk carefully over roofs. Walk over purlins to mitigate the possibility of accidents





RHINO QUALITY ASSURANCE

RHINO TUFF epitomizes excellent quality at fair price. Quality and consistency are built into RHINO TUFF Polycarbonate Sheets to attain a high level of customer satisfaction.

RHINO TUFF PC Sheets are manufactured using the most advanced plastic extrusion technology, using the best quality Polycarbonate Granules and are rigorously tested at various stages. They are renowned for their exemplary strength, superlative performance, pleasing aesthetics and enduring durability.

RHINO TUFF Polycarbonate Sheets come with a Limited Warranty of up to 12 years, a first of its kind in the Polycarbonate Sheet Extrusion Industry and testiment to its qualitative superiority.

We offer multiple price – quality options for the customer to choose from. The RHINO (budget) Series of PC Sheets comes with a 10 year limited warranty, the RHINO STAR (commercial) Series of PC Sheets are warranted for a period of 11 years, whereas the RHINO SUPER STAR (Premium) Series comes with a 12 year limited warranty.

RHINO TUFF continues to set a new bench mark in the Indian and Global Plastic Extrusion (PC) Industry for others to follow and emulate.





THE RHINO FACTORY

Our state of the art Production Facility is located at Faridabad in Haryana. Our Factory which is spread over an area of 10000 Sq. Yards has an annual installed production capacity of 3600 MT of Polycarbonate Solid Sheets and 1,20,000 units of Turbo Ventilator Fans.

Our Production Facility boasts of the most technologically advanced production machinery. Our major Machinery includes a Polycarbonate Solid Sheet Extrusion Line, a Thermoforming Machine and a Sheet Press Brake. Our Plant also houses a large Press Shop and a fully automatic assembly line for manufacturing Turbo Ventilators. We also have an Injection Moulding Machine for manufacturing Plastic Components used to manufacture Turbo Fans.

We are the proud owners of one of the largest & most technologically advanced Thermoforming Machines in India with a bed size of almost 3.35 Mtr. x 1.5 Mtr. We also have the unique and much sought after capability of extruding PC Online Profiled Sheets

We are ISO 9001:2015 certified. We have adopted the best management practices to better customer experience and for maximizing cost efficiency. It is our endeavor to keep abreast with the latest technological developments in the field of Thermoplastics.

Our manufacturing processes are robust and fungible to adopt to our customers bespoke requirements. We have the capability to engage with our customers at various stages of product development and delivery. We benefit from a large and reliable supplier base for our raw materials and special processes.

Our advanced manufacturing capability coupled with our technological and engineering expertise has enabled us to stay ahead of our competition.





RHINO DIGITAL

We strive to enhance customer experience by developing and adopting the latest and the most advanced digital technology.

We are proud to introduce for the first time in India and around the world – THE RHINO TUFF APP for buying RHINO TUFF Polycarbonate Sheets and other RHINO TUFF Products.

The RHINO TUFF APP allows you to buy RHINO TUFF Products easily and quickly using your Smart Phone and is safe to use and easy to operate.

The RHINO APP is easy to install and operate and allows you to check latest prices, stock availability, place orders, make payments and track shipments.

You can also now buy RHINO TUFF Products online by logging on to our E-Commerce Website www.rhinotuff.in.

Privileged customers and distributors can avail credit facilities by logging on to the RHINO TUFF APP or buy logging online.

So, what are you waiting for? Join the digital revolution by downloading the RHINO TUFF APP or logging on to www.rhinotuff.co.in

For any assistance, please feel free to call +91 8010920393







RHINO ALLIANCE - DISTRIBUTER PROGRAM

We believe in growing together with our partners and for our partners. It is this belief that has inspired us to create RHINO Alliance – a global forum of RHINO TUFF Distributors

Under the RHINO Alliance Enrollment Program, we are looking to appoint and partner distributors in India and around the world to promote and sell our RHINO TUFF Polycarbonate Sheets and our other RHINO TUFF Products.

The benefits of being a RHINO TUFF Distributor are numerous. A few of them are as under

- 1. Tremendous market potential
- 2. Ownership of a strong & emerging PC Sheet and Turbo Ventilator Brand
- 3. Opportunity to cater to different market segments by offering multiple price-product quality options
- 4. Exclusive territorial rights for marketing and distribution
- 5. Access to high-end digital technology
- 6. Preferential rights for promoting other innovative RHINO TUFF Products
- 7. High distributor margins, sales commission, incentives and rewards
- 8. Extensive marketing and technical support
- 9. Transparency in business dealings
- 10. High distributor margins, performance linked incentives and attractive rewards
- 11. Recognition & acclamation

Under the RHINO REWARDS Program, Distribuors are entitled to attractive performance linked rewards ranging from high end luxury cars to 5 Star luxury holidays in India. For more information, please request a copy of our RHINO REWARDS VOUCHERS.





RHINO CARE

As a proud and emerging Indian Business Enterprise, we take the pledge to serve our great Nation and to contribute to its economic growth and development and to help it achieve its rightful place in the world.

We also believe that the best way to serve our motherland is to serve its people especially the needy and the under privileged.

It is for this reason that we have decided to contribute a rupee for every kilo of Polycarbonate Sheet extruded by us at our Plants to charitable causes especially the education and upliftment of poor children.

For this purpose, we have decided to partner charitable organizations that are doing tremendous work in the field of education and poverty alleviation in India.

We look forward to your whole hearted support & cooperation in making this initiative a resounding success.







RHINO GREEN

By reducing the dependence on coal based sources of power for light, RHINO TUFF Polycarbonate Sheets when used as Sky Lights help curtail greenhouse gas emissions and thereby help mitigate global warming.

In a very small way, RHINO TUFF is contributing to global efforts towards energy conversation and climate control. RHINO TUFF is also doing its bit to help India become selfreliant when it comes to fulfilling its enormous and ever growing energy needs.

Under the RHINO GREEN Initiative, we are committed towards promoting clean energy and to create a bright and sustainable future for all.











OTHER RHINO TUFF PRODUCTS



Stainless Steel (S.S.)
Turbo Ventilator Fans



PP-SS Turbo Ventilator Fans



Aluminium Turbo (AL.)
Ventilator Fans



7 & 11 Ft. Long PC Base Plates



5.5 Ft. Long PC Base Plates



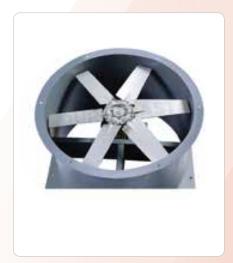
PC Louvers



Skylight Domes



Skylight Tubes



Roof Extractors





OUR CUSTOMERS

















































Plot No. 84, Sector- 46, (near Kapil Vihar), Faridabad, Haryana- 121001

Plant Address

Plot No. 732, Sector- 69, I.M.T., Faridabad, Haryana- 121004

Q 9350803033, 8010920393

■ marketing@dura-plast.com

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