



INDIAN GREENHOUSES PVT. LTD.

Constructing Greenhouses since 1993.....



Greenhouses with difference.....



Formerly





INDIAN GREENHOUSES PVT. LTD. The pioneer leader in Greenhouse industry; IGPL is one of the India's major Greenhouse construction company incorporated in 1993. From the outset, our focus has been on recognizing problems and developing solutions. This commitment has led us in an unceasing incessant drive to raise the quantity and quality of our Greenhouses.

IGPL have installed more than 1000 acres of greenhouses in almost every climatic conditions & geographical orientation in India. We take every Greenhouse as a challenge to provide best product & services through our innovation to our valuable customer.



Mr. Vishwas Jogdand

Since 1993, we are working in this industry; we are continuously developing our skills & infrastructure to achieve optimum results in big volume projects. This innovation gives our customer the assurance of timely delivery with high quality end product.

The Chairman & Managing Director of the company, Mr. Vishwas Jogdand is master in civil engineering firmly assisted by another Director Mr. Rajkumar Deodhare who is also a civil engineer.



Rajkumar Deodhare

Our Chairman is honorable member of Technical committee, NATIONAL HORTICULTURE BOARD, Gurgaon (NHB) for firming up Technical standards of Polyhouse & Shadehouse for all over India.

The dedication and research of IGPL team resulted into successful design & implementation of various types of Greenhouses as well as shadehouses, Controlled Greenhouses and a new design called Shadow Halls.

We feel proud to see the progress of Indian farmers in terms of economy and quality produce, after the revolution of the concept of greenhouse farming over traditional farming.

Our vast experience and practical knowledge is mainly focused to provide complete engineering solutions of greenhouses & its environment control systems, Application of modern technology, Continuous R & D in manufacturing process and allied Services is prime reason for the exceptional performance of IGPL.



Types of Greenhouses We Construct...

- A. Natural ventilated Greenhouse with 10 % top ventilation.
- B. Natural ventilated Greenhouse with 17% top ventilation.
- C. Fan & Pad Greenhouse / Greenhouse with Evaporative cooling system.
- D. Shadow Hall & Single / Multispan Tunnel Type Greenhouses.
- E. Shade houses

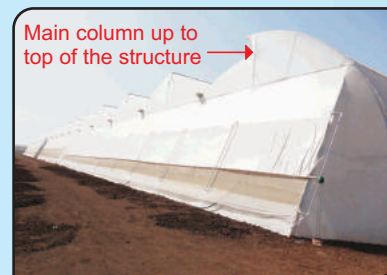
A. Natural ventilated Greenhouse with 10 % top ventilation

Features of this structure :-



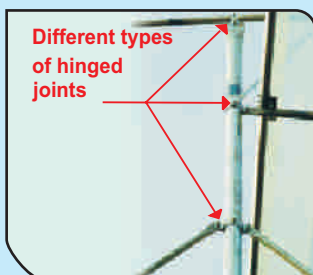
1) Tropical Design :

Column runs up to top of the Greenhouse to ensure maximum strength to the structure.



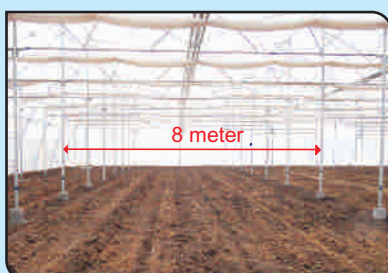
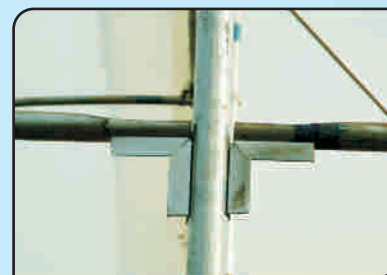
2) Anchoring Foundation Column:

Formation level of Greenhouse are perfectly maintained in concrete ensures resting of main column on concrete.



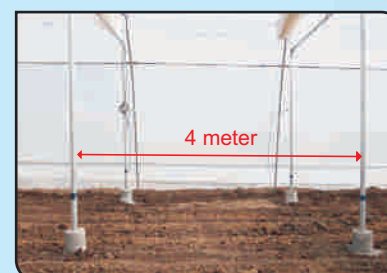
3) G.I. Pipes structure with Hinge Joint:

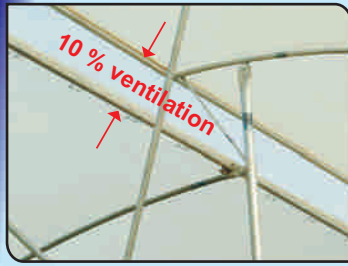
G.I. Pipe members are joined to each others by means of clamps, angle brackets & nut bolts which ensures more strength against the vibrations caused by wind.



4) 8 mtr. X 4 mtr. Structure Grid:

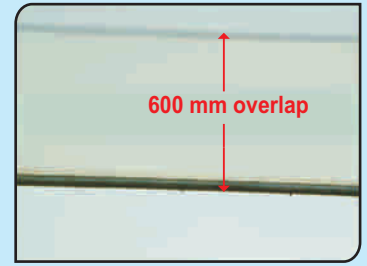
Multispan structure having 8 mtr. truss span and 4 mtr. distance between two trusses.





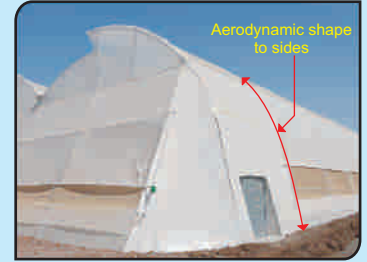
5) 10% Top Ventilation:

800 mm clear opening placed at top to ensure better ventilation and 600 mm overlap to avoid direct entry of sunlight into Greenhouse.



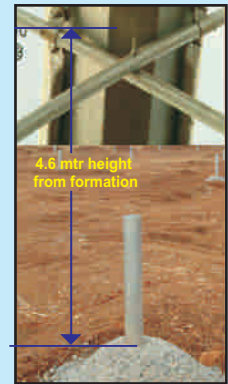
6) Aerodynamic Shape along Periphery :

This shape is given to drift away wind flow and minimize the wind impact on the sides of Greenhouse to ensure maximum strength of structure against wind.



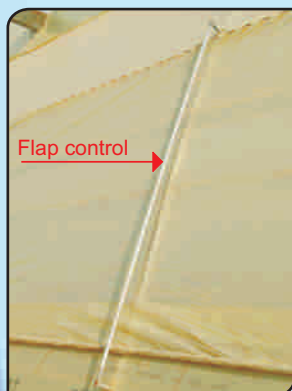
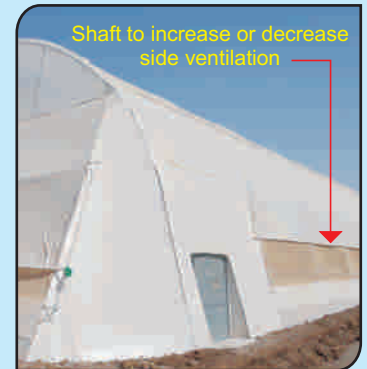
7) 4.6 mtr. Gutter Height :

This height is from foundation formation Level to bottom of Gutter . Total height of the structure is 6.5mtr.



8) Curtain opening along periphery :

This system allows to minimize or maximize side ventilation as per the requirement and ensures outside cold air to flow inside and push inside hot air to outside from top ventilation. Also by closing side ventilation one can block Co2 exhausted by plant inside the the Greenhouse during night & use the same in morning to increase photosynthesis of the plant.



9) Curtain Flap Controls :

Avoids the outside flapping of polythene curtain ensures more life of the side polythene.



Sizes for 10 % top ventilated Greenhouse



Length	Width	Area	Length	Width	Area	Length	Width	Area	Length	Width	Area
20	20	400	44	20	880	68	20	1360	92	20	1840
	24	480		24	1056		24	1632		24	2208
	28	560		28	1232		28	1904		28	2576
	32	640		32	1408		32	2176		32	2944
	36	720		36	1584		36	2448		36	3312
	40	800		40	1760		40	2720		40	3680
	44	880		44	1936		44	2992		44	4048
	48	960		48	2112		48	3264		48	4416
	52	1040		52	2288		52	3536		52	4784
28	20	560	52	20	1040	76	20	1520	100	20	2000
	24	672		24	1248		24	1824		24	2400
	28	784		28	1456		28	2128		28	2800
	32	896		32	1664		32	2432		32	3200
	36	1008		36	1872		36	2736		36	3600
	40	1120		40	2080		40	3040		40	4000
	44	1232		44	2288		44	3344		44	4400
	48	1344		48	2496		48	3648		48	4800
	52	1456		52	2704		52	3952		52	5200
36	20	720	60	20	1200	84	20	1680	108	20	2160
	28	1008		24	1440		24	2016		24	2592
	32	1152		28	1680		28	2352		28	3024
	36	1296		32	1920		32	2688		32	3456
	40	1440		36	2160		36	3024		36	3888
	44	1584		40	2400		40	3360		40	4320
	48	1728		44	2640		44	3696		44	4752
	56	2016		48	2880		48	4032		48	5184
	84	3024		52	3120		52	4368		52	5616

Formula to select Greenhouse Size :

- Length = Multiples of 8 mtrs. + 4 mtrs.
- Width = Multiples of 4 mtrs. - Gutter length in North - South direction.

► Sizes in bold figures are standard models



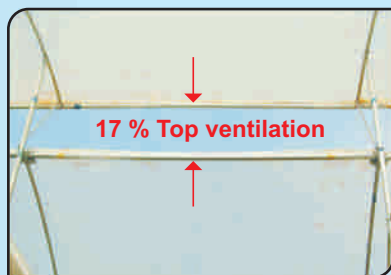
B. Natural Ventilated Greenhouse with 17 % top ventilation :



Features :

All the features are same like 10 % top ventilated Greenhouse except :

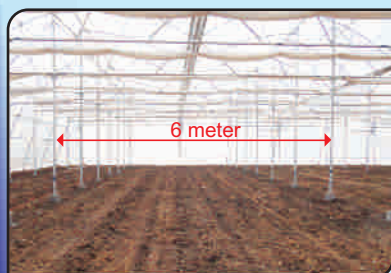
1) 17 % Top Ventilation :



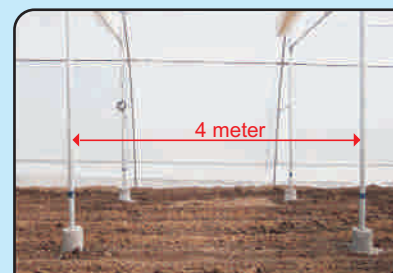
More ventilation means better control over temperature. This design is suitable for those crops which needs more ventilation like Anthurium, Carnation etc. or those areas where temperature in summer is too high like Central Gujarat, Rajasthan etc.

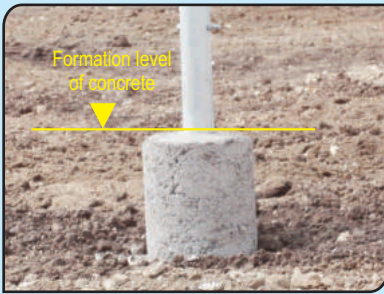


2) Structure Grid 6 Mtr. x 4 mtr.



Multi span structure having 6 meter span and 4 meter distance between two trusses.





1) Foundations :

Foundations are aligned by theodolite and dumpy level. Level of concrete are maintained as per the slope required resulting proper resting of main column on the concrete.

2) Bottom Chords :

Straightness of the bottom chord is maintained for any length of the Greenhouse by means of perfect mathematical calculations, resulting more strength & good aesthetical appearance to the structure.



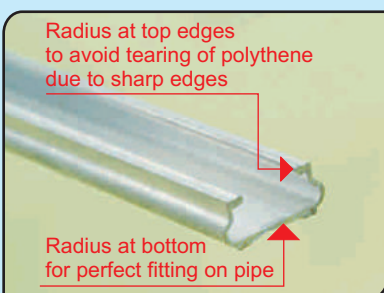
3) Ideal selection of Radius for Top Arches :

IGPL has selected optimum radius for top chords which results in to less wind pressure through vents and avoid lifting of top polythene and also reduces wind pressure due to aerodynamic design.



4) Flap Control & Curtain Runners :

IGPL provides flap control pipe that avoids the flapping of curtain paper & reduces maintenance due to wind pressure. Extra purlin is provided along periphery with aluminum gripper which increases strength of structure and also **increases life of side polythene.**



5) Aluminum Gripper :

Curvature at the bottom surface for perfect fitting on the pipes and radius is given to the edges where polythene under stress.



6) Gutter :

Trapezoidal shaped gutter in single piece made from G.P. sheet coil and are placed on the structure by means of modern technology.

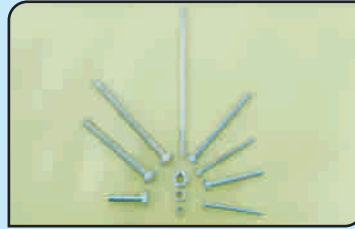




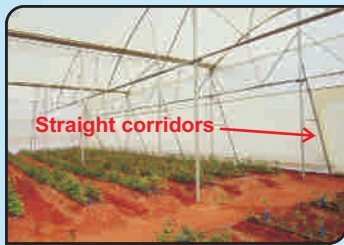
IGPL has developed new kind of prefabricated gutters which are 2.0 mm thick & increasing the strength of structure tremendously. These gutters are 4 mtr. long & connected to each other with the help of best quality Silicon material which is leak proof.



7) Fixtures : All the Fixtures are made from hot deep galvanized sheets.



8) Corridors : **IGPL** is using two types of corridors in greenhouse.



1. Bended Corridor: These corridors are used along width of greenhouse. (parallel to Gutter direction).

2. Straight Corridor: These corridors are used along length of greenhouse which means opposite to Gutter direction.

These straight corridors are used to stop displacement of main column due to heavy wind velocity.



9) IGPL erects the structure by its own developed technology and not by conventional method using scaffolding etc. No pressure/ pre-stress remains in the member after erection. Experienced team of engineers from IGPL selects the orientation of the Greenhouse by studying the local topography & Metrology.



10) Production Unit : IGPL is having most modernized manufacturing unit which is having capacity of producing 1.0 Hectre structural material per day.



C. Fan & Pad Greenhouse :

These greenhouses are most suitable for Tissue culture plant hardening, Hi-Tech Nursery, Medicinal plants, High Value ornamental plants production etc.

Features -

- ❖ Stub type anchoring foundation.
- ❖ Total nut-bolted & galvanized pipe structure.
- ❖ Structure is designed for 120 km/hr wind velocity.
- ❖ Fans: Louvered fans of size 1250 x 1250 mm having 21000 CFM air exhaust capacity.
- ❖ Pads: 100 - 150 mm thick Cellulose cooling pads are used along with complete Aluminium top bottom assembly.
- ❖ One air exchange is made within 60 seconds & inside air velocity is maintained upto 0.9 mtr/sec.
- ❖ Double door entry chamber is provided by default.



D. Shadow Hall :



Features :

- ❖ Anchoring foundation with 4 mtr x 4 mtr Grid. Structure made of G.I. pipes.
- ❖ 33% top ventilation, which can reduce temperature up to 5 degree celcius.
- ❖ 50-65% Shading Net coverage at Top & below 200 micron UV clear Polyethylene.
- ❖ Sides covered by 35-50% shading net along with openable 200 micron UV clear Polyethylene.
- ❖ Facility of 100% sides opening & closing with chain pulley system.
- ❖ Height of Shadow hall is 6 meter & gutter height 4 meter.
- ❖ Can withstand to wind velocity upto 125 Km/hour.
- ❖ Single piece gutter of 1 mm thickness & 500 mm development width.
- ❖ Sizes of Shadow hall are available as per customer's requirement.



E. Shade house:

Shadehouses are mainly used to produce Capsicum, Tomatoes, Cucumber, Corriander and various vegetables with good quality. They are also used to produce Ornamental Plants in Nurseries as well as Hardening of Tissue culture plants.

IGPL is having all designs of Shade houses which are manufactured & installed at site as per the guidelines of National Horticulture Mission (NHM) & National Horticulture Board (NHB).

The most popular models are as follows.

1. Flat type Shadehouse: Model-1:

Features -

- ❖ Total galvanised & Nut bolted structure.
- ❖ Structure Grid : 6 mtr x 6 mtr.
- ❖ Total Height : 4 mtr.
- ❖ Shadenet Fitting System : Aluminium Profile with Zig Zag spring.
- ❖ Covering : Shadenet or Insect net with various options.
- ❖ Extra bracings for more strength



2. Flat type Shadehouse: Model-2:

Features -

- ❖ Total galvanised & Nut bolted structure.
- ❖ Structure Grid : 6 mtr x 4 mtr.
- ❖ Total Height : 4 mtr.
- ❖ Shadenet Fitting System : Aluminium Profile with Zig Zag spring.
- ❖ Covering : Shadenet or Insect net with various options.
- ❖ Extra bracings for more strength



3. Round Top type Shadehouse :

Features -

- ❖ Total galvanised & Nut bolted structure.
- ❖ Structure Grid : 6 mtr x 4 mtr.
- ❖ Ridge Height : 4 mtr. and side height 3 mtr.
- ❖ Shadenet Fitting System : Aluminium Profile with Zig Zag spring.
- ❖ Covering : Shadenet or Insect net with various options.
- ❖ Extra bracings for more strength



How to select proper film for Greenhouse

Why choose poly film for cladding of Greenhouse ?

Poly film is popular with commercial growers because of its low cost and simplicity in maintenance. It lasts two to five years depending on the thickness and UV treatment used, and also can be easily replaced .



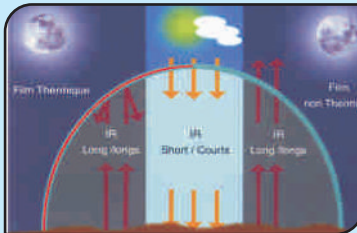
POLYWHITE-3D : 200µm UV Stabilized, Colourless and Diffused.

CLIMAWHITE-3D : 200 µm UV Stabilized, Diffused with Cooling Effect, Thermal Effect.



POLYANE -3F HD + : 200 µm UV Stabilized, Yellow Diffused, Sulphur Resistant, UV Blocking for anti blackening.

CLIMAROSE- 3 TH : 200 µm UV Stabilized, Yellow Diffused, Sulphur Resistant, UV Blocking for anti blackening including Cooling Effect, Thermal Effect.

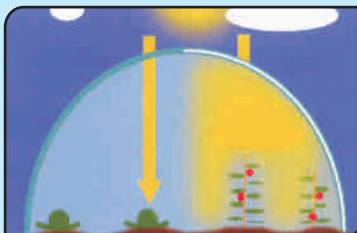


Cooling Effect :

The cooling effect is achieved by the combination of three effects

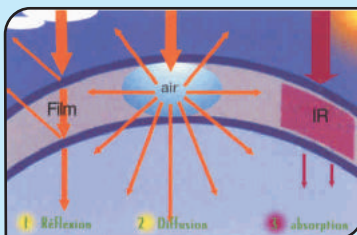
- The reflection of light on the surface of the film
- The diffusion of light through the film
- The absorption of short IR rays by the film.

Our cooling films combine these 3 effects ideally in order to allow the optimum photosynthesis of the protected crop.



Thermal Effect :

During the day, the solar rays (short IR) enter and warm the greenhouse air and soil. During the night, the greenhouse cools and the soil releases the heat stored (long IR). Our thermal films better retain the long IR to improve the protection of the crops from the frost, and ensure a better and earlier yield.

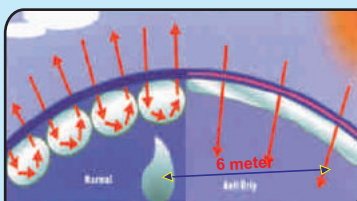


Direct or diffusing light Effect :

As opposed to diffusing films with dispersed scatter rays, crystal films allow rays of light to penetrate directly to the plant.

Our range offers a wide choice of crystal & diffusing films adapted to each crop.

- Diffusing films specifically for high crops, which optimize photosynthesis, reduce burns, and allow early harvest.
- Crystal films in order to capture the maximum of light for low crops, and then improve the yield.



Anti Drip Effect :

The condensation of water droplets on the film has an important influence on the crop :

- Reduction of light transmission due to refraction of light by the droplets.
- Plant burning due to the magnifying glass effect
- Weakening of certain crops from dripping.
- We propose a range of Anti Drip films which prevent the formation of droplets, by creating a continuous layer of water which simply flows down the side walls of the greenhouse.

Anti Dust :

Poly film have a tendency to attract dust particles. Over a longer period of exposure, considerable dust particles accumulate on poly film. It leads to reduction in light transmission . This effect has a negative impact on growth of plants resulting to lower yield and slower growth. Special additives in the film, prevents permanent accumulation of dust particles.



Why Greenhouse ???

Major advantages of Greenhouses are as below.

- ❖ Partial protection of plant from high and low temperature.
- ❖ Production of quality flowers, vegetable and ornamental plants.
- ❖ Protection of shade loving plants from sun injury.
- ❖ Protection of plant from pest and diseases.
- ❖ Protection of plant from winds and hailstorm.
- ❖ Less mortality & intensive cultivation through out the year.
- ❖ Efficient use of water, fertilizers, insecticide and pesticides etc.
- ❖ Production schedule can be planned as per market need.
- ❖ Higher yield compare to traditional farming.
- ❖ Less water consumption and less labour requirement.



Commercial Cultivation under Greenhouse



Gerbera



Dutch Rose



Carnation



Anthurium



Orchid



Lilium



Chrysanthum



Nursery



Colour Capsicum



Cherry Tomato



Cucumber



Seedlings

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