

Building Solutions for All Stages of Construction



BIRLA AEROCON
BUILDING A DREAM NATION WITH GREEN PRODUCTS



CK Birla Group: Introduction


The CK Birla Group is a growing US\$ 1.6 billion conglomerate that has a history of enduring relationships with renowned global companies.

With over 20,000 employees, 24 manufacturing facilities and numerous patents and awards, the Group's businesses are present across five continents. The companies of the group are strengthened by common ownership and share guiding principles that include a focus on long-term value, trust-based relationships and philanthropy.




Technology and Automotive

- AVTEC Limited
- Birlasoft Limited
- GMMCO Limited
- National Engineering Industries Limited (NBC Bearings)
- Neosym Limited



Home and Building

- HIL Limited
- Orient Cement
- Orient Electric
- Orient Paper & Industries



Healthcare and Education

- BM Birla Heart Research Centre
- The Calcutta Medical Research Institute
- Birla Institute of Technology, Mesra, Ranchi
- Modern High School for Girls
- Rukmani Birla Modern School

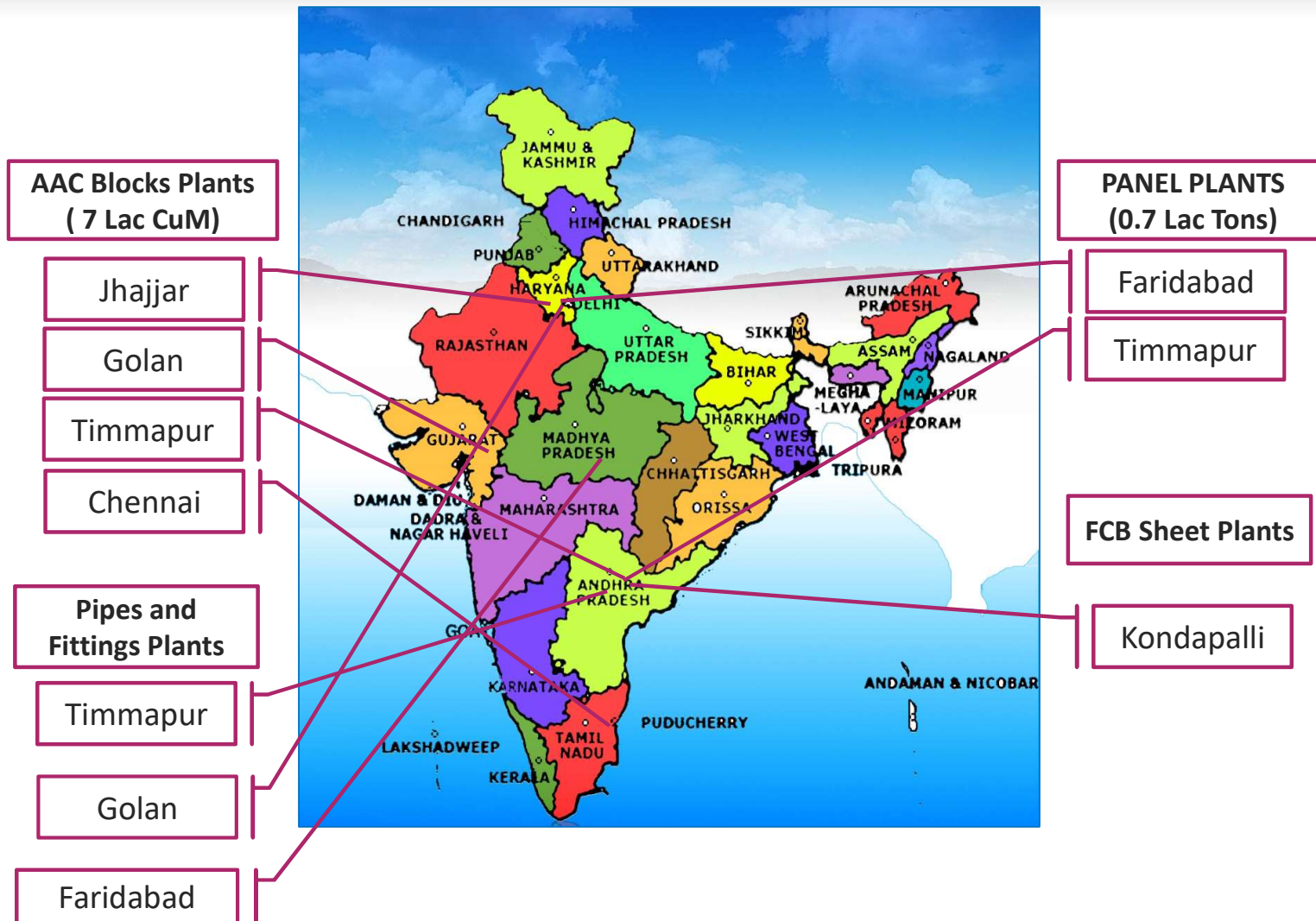


Ever since our inception in 1946, as a flagship company of the CK Birla Group of Companies, HIL Ltd is a established and one of the foremost leaders in the Building products industry both, domestically and internationally.

Aerocon is the Green Building products division of HIL Ltd. Our identity stands for innovation in thought and values in action. Values that have come to define us as a pioneer in the industry



Aerocon Building Solutions: Manufacturing Footprints



- Commenced Production in 1999
- Production Capacity 0.54 Lac Tons



Kondapalli (Vijayawada) FC Sheets Manufacturing Plant



Production Capacity
0.54 Lac Tons





- HIL has 2 in-house R&D centers, in Hyderabad and Faridabad set up as early as 1964
- Recognized by DSIR – Government of India
- Design formulation, new product & process development, critical material testing are some of the key functions
- Today, HIL holds 22 patents in over 7 countries.



ONE-STOP SOLUTION FOR ALL YOUR BUILDING NEEDS



AEROCON
PIPES & FITTINGS

AEROCON
Smartputty
FINE WALL PUTTY

AEROCON
Smartfix
FINEST BLOCK JOINTING MORTAR

AEROCON
BLOCKS

AEROCON
FIBRE CEMENT BOARD

AEROCON
PANELS

Aerocon Product Range

Dry Walling System

Aerocon Smartbond
Jointing Compound



Aerocon
Cement Board

Aerocon
Solid Cement Panels



Aerocon
Ceiling Tiles

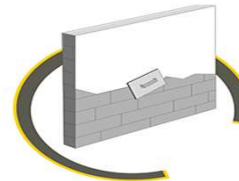
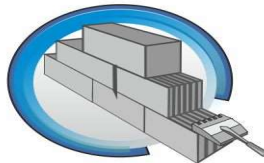
Complete Building
Products Solutions from
Aerocon

Aerocon
AAC Blocks



Aerocon Tiles
Premium Flooring

Aerocon Smart Fix
Block Jointing Mortar



Aerocon Smartputty
Premium Quality Wallputty

Wet Walling Solutions

Aerocon Readyplast
Ready Mix Plaster

CK BIRLA GROUP

AEROCON
PANELS

More space.
Less effort.
Aerocon
Drywall Panels.



 Toll Free: 180042542599
Email: aeroconpanels@hil.in

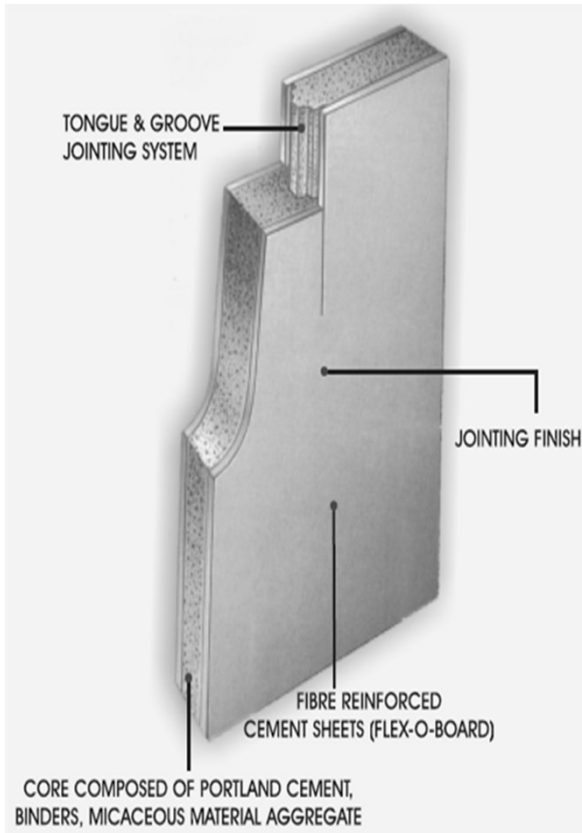
CK BIRLA GROUP

AEROCON
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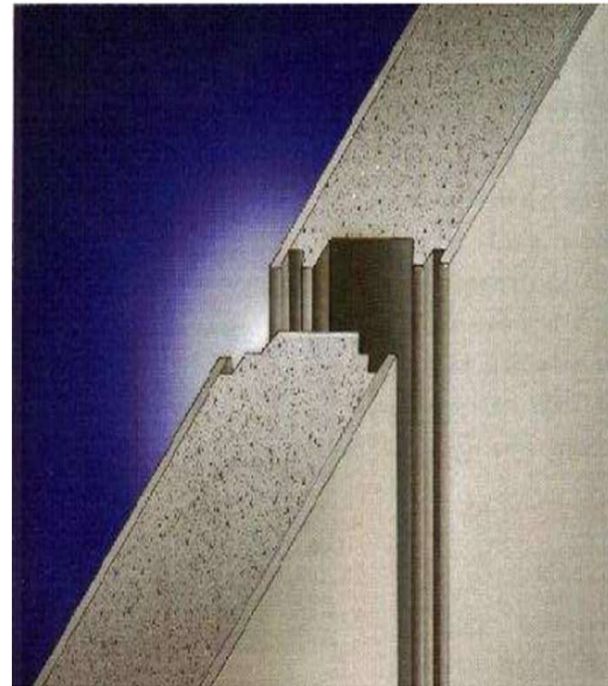
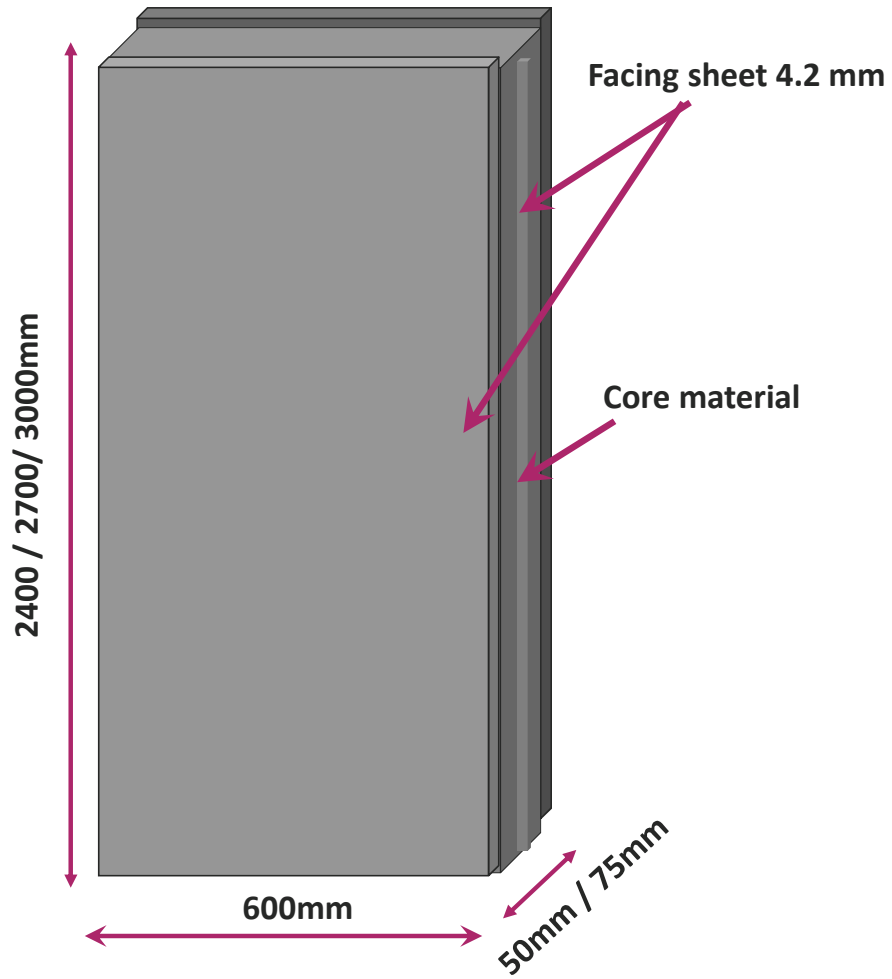
Dream projects
in record time.
Aerocon
Drywall Panels.



 Toll Free: 180042542599
Email: aeroconpanels@hil.in



- A sandwich panel of two fiber-reinforced cement sheets enclosing a light weight concrete core composed of Portland cement and Fly-ash
- Fully cured at factory, they are ready for installation right away
- Unique “Tongue and Groove” jointing system facilitates rapid construction with minimum effort



Tongue and groove joint

Properties	Thickness		Remarks
	50 mm	75 mm	
Weight (dry) per sq.m. (kgs)	39	54	
Axial load / meter width (KN/m)	53	83	Factor of safety - 2.5 (Sample size: 1500 x 300 mm)
Bending test (4 point UDL) Uniform distributed load (Kg/m ²) 1.5 m Span	198	265	Factor of Safety - 2.5
Flexural Strength (Kg/cm ²)	67	58	Typical Test results
Thermal Conductivity (W/m deg. K)	0.22	0.21	BS 4370 - Part 2
Sound Transmission Coefficient (db) (Typical Test Results of Prasar Bharati and NPL)	34	37	IS: 9901 (Part III) - 1981 IS: 11050 (Part I) - 1981
Fire rating (minutes) [As per test results of CBRI]	60	120	BS 476 Part 20 - 22
Surface spread of flame Ignitability	CLASS I CLASS P (not easily ignitable)		BS 476 Part 7 - 1971 BS 476 Part 5 - 1968



निर्माण सामग्री एवं प्रौद्योगिकी संवर्धन परिषद्
आन्ध्र प्रदेश शासकीय अध्यापन समिति, मद्रास संकल्प
Building Materials & Technology Promotion Council
Secretary BMTPC/PMT/PTC/PPRSP/2016
Dated: 13th January, 2017

Sh. N. K. Jayakrishnan
Associate Vice President – Aerocon Sales
M/s HIL Ltd.
SLN Terminus, 7th Floor,
Near Botanical Gardens, Gachibowli,
Hyderabad – 500032 (Telangana)

Subject: Performance Appraisal Certificate (PAC) for Prefabricated Fibre Reinforced Sandwich Panels – reg.

Sir,

It is to inform that the Technical Assessment Committee (TAC) in its Meeting held on 28th December, 2016 has approved the Performance Appraisal Certificate (PAC) for Prefabricated Fibre Reinforced Sandwich Panels for a period of two years as per the details given below:

S.No.	PAC No.	Name of System	Date of Issue	Valid Upto
1.	1030-S/2017	Prefabricated Fibre Reinforced Sandwich Panels	13-01-2017	12-01-2019

The said PAC is enclosed herewith. Please acknowledge receipt of the same.

Thanking you,

Yours faithfully,

(Signature)
(A. K. Tiwari)
Chief (PMT)

Encl: As above

इस दस्तावेज़ में किये गये पत्राचार का स्वागत करते हैं।
कोटा रोड, प्रथम मंज, मदन मोहन मालवीय स्मृति, लोदी रोड, नई दिल्ली - 110003; दूरभाष: 91-11-24636705; फैक्स: 91-11-24642848
Circle SA, 7th Floor, India Habitat Centre, Lodi Road, New Delhi - 110 003; Tel: 91-11-24636705; Fax: 91-11-2464 2849



Directorate, CPWD
DG/DAR/12

NIRMAN BHAWAN, NEW DELHI - 110011.

This issue with the approval of DG, CPWD.

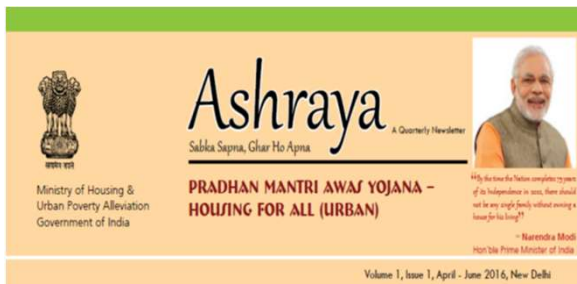
NIRMAN BHAWAN NEW DELHI DATED: 02 /01/2018

OFFICE MEMORANDUM

Sub:- Correction slip no.10 Delhi Analysis of Rates 2016.

The following new item of Non asbestos fibre reinforced aerated cement sandwich wall/roof/floor light weight solid core panels to be included in DAR-2016 after item No 26.49 of SH: 26 (New Technology & Materials).

26.50	Providing and fixing in position factory made non asbestos fibre reinforced aerated cement sandwich wall/roof/floor light weight solid core panels made of light weight cement concrete core composed of OPC cement, pulverized flyash, quick lime, cotton pulp & Gypsum in mortar state mixed with aeration agent in a preset mould. The outer face on both sides of the panels will be non asbestos fibre cement board conforming to IS 14862:2000. These solid wall panels are installed using Galvanized iron steel tracks/C channel of 1mm thick of required sizes as recommended by manufacturer's and fixed to floor and RCC soffit in plumb to each other with steel screw/fasteners. The panel shall be fixed vertically with tongue & groove joint with cement based polymer modified jointing compound. The exposed surface finished with fibre mesh/glass fibre tape with polymer based jointing compound having superior flexibility. Panels should be used as floor & roofing with additional structural support, steel or RCC depending upon the design. All the operation shall be completed in all respect as per drawings, Manufacturers specifications and under the overall direction of Engineer-in-Charge (Cost of all the material is included except "tracks/C channel" which will be paid separately).
26.50.1	Non load bearing panels 50mm thick of required size (minimum 4mm thick fibre cement board)

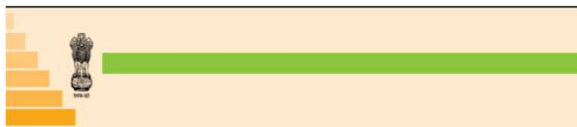


Ashraya
A Quarterly Newsletter
Sabka Sapna, Ghar Ho Apna

Ministry of Housing & Urban Poverty Alleviation
Government of India

PRADHAN MANTRI AWAS YOJANA – HOUSING FOR ALL (URBAN)

Volume 1, Issue 1, April - June 2016, New Delhi



Interventions of Government of Andhra Pradesh

- After detailed deliberations finalized (7) Technologies for implementation:
 - Glass Fibre Reinforced Gypsum Panels for Walls & Roof slabs.
 - Expandable Polystyrene Panels for Walling and Roofing
 - Light gauge Steel structures
 - Pre-cast Concrete System (3-S Pre-Fab Technology)
 - Monolithic Concrete Walls (Shear Wall Technology) with Plastic/Aluminium form work
 - Steel frame with Aerocon Panels/PUF panels
 - Waffle Crete Pre-cast Concrete Panels
- EPPS Panels for Walling and Roofing. (in Srikakulam district – 480 houses)
- Steel frame with AAC Blocks. (in Visakhapatnam district – 2336 houses)
- Steel frame with AAC Blocks. (in Vizianagaram district – 396 houses)
- A model colony also taken up in Nellore district (40 houses) along with BMPTC with GFRG Panels for Wall and Roof slabs.

Management Information System (MIS)

A centralized web enabled Management Information System (MIS) has been developed for PMAY which can be reached at www.pmaymis.gov.in The system serves as a bridge between the Ministry, State Government, SLNA, ULBs and other stake holders and acts as a source of structured information of approved projects, survey details, beneficiary information etc.



Dr Prem C Jain
Chairman

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **M/s HIL Ltd.** is one of the Members of Indian Green Building Council (IGBC) under the category: **Mfg. / Product Suppliers** for the period **1 January 2015 - 31 December 2015.**

M/s HIL Ltd. membership number is "IGBC - MP - 1116".



Prem C Jain

Headquarters: The Manish Sankh Centre, 23, Institutional Area, Lod Road New Delhi 110 003
www.igbc.in



GRIHA Council

This is to certify that the products

“Hyderabad Industries Aerocon Blocks & Panels”

have been included in the GRIHA Product Catalogue under the following categories:

Aerocon Blocks - GRIHA Criteria - 14,15,16 & 29 and SVAGRIHA Criteria - 5 & 11
Aerocon Panels - GRIHA Criteria - 15, 16, 17 & 29 and SVAGRIHA Criteria - 5 & 12

These products can be used in GRIHA and SVAGRIHA registered projects to meet the GRIHA and SVAGRIHA norms, respectively. This is valid only for the products which have been mentioned above.

This certificate for the above mentioned products is valid from **8th October 2014 - 7th October 2016**



Mili Majumdar
Secretary cum Treasurer

Note: This evaluation has been done based on the documentation - in the form of 3rd party test results and/or declarations - submitted by the manufacturer to GRIHA Council.

GRIHA Council is a joint initiative of Ministry of New and Renewable Energy, Government of India and The Energy and Resources Institute (TERI) to implement GRIHA (Green Rating for Integrated Habitat Assessment), India's National Rating System for Sustainable Habitats.

www.grihindia.org





Full Height Partitions

15.07.2009 16:15



Mezzanine Flooring



Half Height Partitions



Prefab structure



Mezzanine Floors



Industrial Cladding



Industrial Partitions



Fins



1 - Fix Floor Channel & Ceiling Channel



2 - Cut the panel to required size

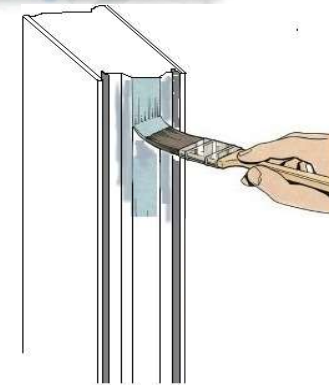


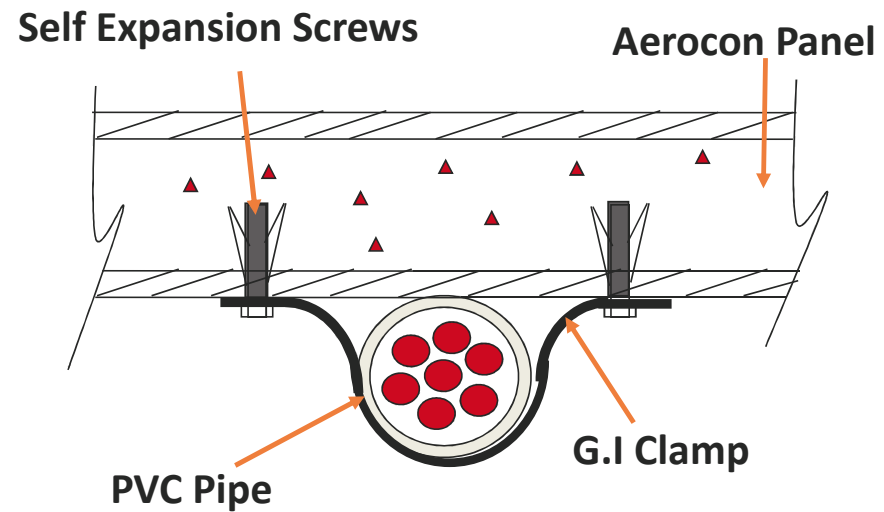
3 - Erect the Panel



4 - Apply Smartglue & Paste

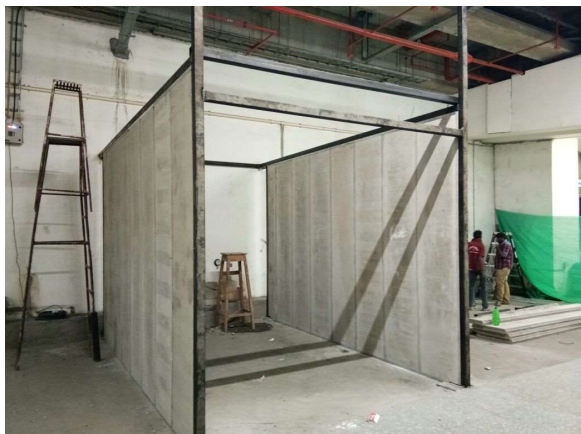
5 - Finish with Smartpoly Tape and Smartflux





Surface mounting

Concealed wiring & Switch Box













Prefab Structure L& T Metro Rail Project







MES Guest House, Patnitop (Jammu)



HOUSING MODELS FOR COLONIES





BEFORE CYCLONE





Aerocon C-Board is manufactured as per IS 14862- 2000, Type B category '3' The uniqueness of these boards lie in the versatility of being a composite material to be used for both interiors and Semi covered exteriors

- **Durable & High Impact resistance**
- **Resistance to fire, termite & moisture**
- **Dimensionally stable**
- **Low shrinkage – Minimizes thermal cracks**
- **Good sound and thermal insulation**



Technical Specification

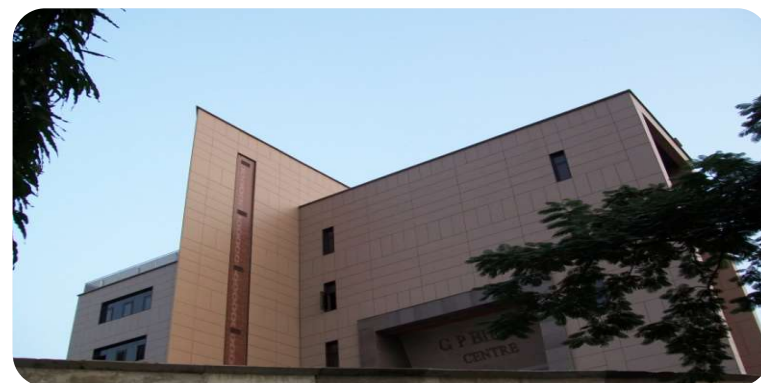
Standard weight for 6 mm	8.25 kg/m ²
Free moisture at equilibrium (at 24 C & 50% RH)	5-11%
Dry shrinkage (moisture movement)	<2.5 mm/mtr
Water absorption	<40 %
Thermal conductivity ****	0.2 w/mk
Ignitability (BS -476, Part -5) (not easy ignitable)	Class P
Fire Propagation index(BS-476, Part-6)	3.7
Surface spread of flame (BS-476, Part-7)	Class 1 (Best)
Screw holding capacity on face	220 kg
Nail holding capacity on face	180 kg
Bending strength (modulus of rupture/min)at Equilibrium condition	10 Mpa
Heat/Rain test	Pass
Warm water test	Pass
Termite test	Pass
Fire resistance (non load bearing)** (BS-476,part-20,22)	120 mins

Thickness (in mm)	Length * Width (in feet)	Length * Width (in Meter)
4	2' * 2'	0.61 * 0.61
	4' * 2'	1.22 * 0.61
6, 8, 10, 12	4' * 2'	1.22 * 0.61
14,16 & 18	4' * 4'	1.22 * 1.22
	6' * 4'	1.83 * 1.22
	8' * 4'	2.44 * 1.22

ATTRIBUTES	BENEFITS
<ul style="list-style-type: none"> Asbestos free 	<ul style="list-style-type: none"> Safe & healthy interiors
<ul style="list-style-type: none"> Moisture resistant 	<ul style="list-style-type: none"> Lasts long
<ul style="list-style-type: none"> Sound insulation 	<ul style="list-style-type: none"> Improved interiors with reduced noise pollution
<ul style="list-style-type: none"> Thermal insulation 	<ul style="list-style-type: none"> Comfortable interiors & improved energy efficiency
<ul style="list-style-type: none"> Termite resistance 	<ul style="list-style-type: none"> No threat from any microbes.
<ul style="list-style-type: none"> Dimensional stability 	<ul style="list-style-type: none"> Withstands all climatic conditions
<ul style="list-style-type: none"> Fire resistance 	<ul style="list-style-type: none"> Ensures safe interior space
<ul style="list-style-type: none"> Easy workability 	<ul style="list-style-type: none"> Very easy to work with the carpenter tools
<ul style="list-style-type: none"> Good adhesion 	<ul style="list-style-type: none"> Can take all type of finishes



FAÇADE



CLADDING



PARTITIONS & CEILINGS

CK BIRLA GROUP

 **AEROCON**
BUILDING SOLUTIONS



AEROCON PIPES & FITTINGS

Most Trusted Plumbing Solution



IS 15778:2007

CM/L-2699584



TrueFIT™ Technology
for Leakproof Joints

✉ aerocon@hil.in

☎ 1800 42542599

AEROCON PIPES & FITTINGS

CPVC PIPES:

- Unique TrueFiT technology ensures 100% leak proof joints
- UV-resistant and Corrosion resistant
- Fire resistant



UPVC PIPES:

- Anti-microbial makes it safe for drinking purpose
- Easy to install and cost –effective
- Mostly industrial application





- The '+++! sign to enable quick measurement and easy cutting.
- The arrow mark on the fittings serves as an alignment tool with the pipe.
- Aerocon's fittings sized 2½" or more, have a special design element that helps in providing a better grip for the pipes, ensuring a leakproof and TrueFIT® joint.
- No electric/heat source is required for installation.
- A simple cutter, chamfering tool and CPVC solvent are the only requirements for 100% leakproof jointing.
- Antimicrobial and also suitable for aggressive water with pH levels of less than 6.5.
- UV resistant and fire resistant.
- Non-corrosive and no scaling.
- Cost saving & eco-friendly.

Product	Size	Class/Type	Standard	Licence
CPVC Pipe (Ivory Color)	1/2" to 2"	SDR 11 (Class-1)	IS 15778:2007	ISI Licence CM/L- 2699584
		SDR 13.5 (Class-2)		
UPVC Pipe (White Color)	1/2" to 6"	SCH 40	ASTM F 441	N/A
		SCH 80		
UPVC Pipe (White Color)	1/2" to 6"	SCH 40	ASTM D 1785	N/A
		SCH 80		
Column Pipe (white color)	1" and 1 1/4"	V4 Type	N/A	N/A
	1" to 4"	Medium		
	1" to 4"	Standard		
	1" to 4"	Heavy		
CPVC Fittings (Ivory Color)	1/2" to 2"	SDR 11	ASTM D 2846	N/A
	2 1/2" to 4"	SCH 80	ASTM F439	N/A
UPVC Fittings (White Color)	1/2" to 4"	SCH 80	ASTM D 2467	N/A
UPVC Ball Valve	1/2" to 2"	Compact Type	ASTM F 1970 & ASTM D 2846	N/A
UPVC Union Ball Valve	2 1/2", 3" & 4"	Union Type	ASTM F 1970 & ASTM D 2846	N/A
CPVC Ball Valve	1/2" to 2"	Union Type	ASTM F 1970 & ASTM D 2467	N/A
CPVC Concealed Ball Valve	1/2" ,3/4" & 1"	Concealed	ASTM F 1970 & ASTM D 2467	N/A
UPVC SOLVENT	1/2" to 2"	One step solvent (For Interference joint)	ASTM D 2564	UPVC Medium Bodied Cement (Blue Color)
	2 1/2" to 6"	Two step solvent (for Non interference Joint)	ASTM D 2564	Primer (Purple)
ASTM F 493			Heavy duty solvent (Dark Grey)	
CPVC SOLVENT	1/2" to 2"	One step solvent (For Interference joint)	ASTM D 2846 & ASTM F 493	CPVC Medium Bodied Cement (yellow Color)
	2 1/2" to 6"	Two step solvent (for Non interference Joint)	ASTM D 2564	Primer (Purple)
ASTM F 493			Heavy duty solvent (Dark Grey)	

1. ROHS Certificate - TUV Rhineland:



Certificate	Certification Lab/ Agency	Significance
ROHS (Restriction of Hazardous Substances) certificates of UPVC,CPVC pipes and fitting	TUV Rheinland (India) Pvt. Ltd., Bangalore	Our Product does not have any hazardous substances which can effect human body.

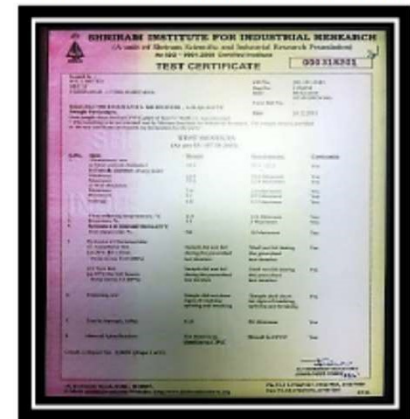
2. EPDM food Grade Certificate – TUV Rhineland:



Certificate	Certification Lab/ Agency	Significance
Migration test certificate of EPDM washer and O ring	TUV Rheinland (India) Pvt. Ltd., Bangalore	EPDM O ring and washers used in Pipe and fittings have no migration in water.

BIRLA AEROCON: Only brand who is more conscious about Human Health

3. Shriram Certificate:



Certificate	Certification Lab/ Agency	Significance
Shriram Test Certificate	Shriram Institute for Industrial Research	Perform all 42 standard tests prescribed by BIS (Bureau of Indian Standards) Withstand Temp. upto 115 ^o Celsius

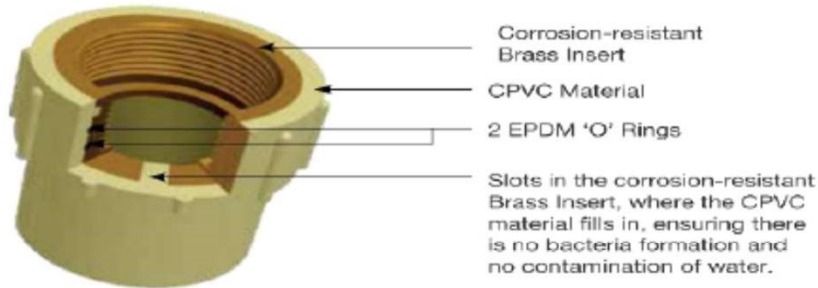
4. Backward Integration:




Capability	Process	Output
Backward Integration	Produce our own compound so that we can control or alter the properties of compound	Much cleaner & Green raw material with better properties

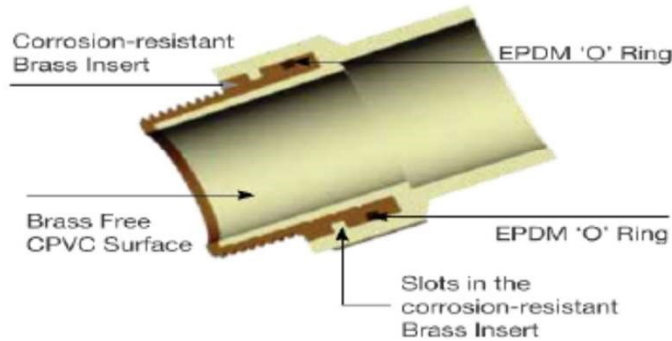
Stringent Quality checks with NABL accredited lab along with in-house R&D on raw material

5. Quality of brass:



Certificate	Significance	Pain Point solved
IS-319	Brass Composition Compliance (Cu & Zn)	
IS-554	Deep Knurling / Groves / Thickness of Brass material	

6. Migration of Water in fittings:

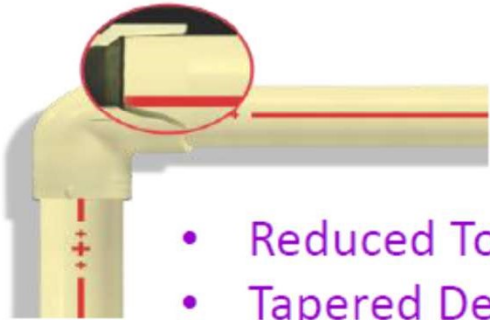


Cross section view of Aerocon's CPVC Trans MTA

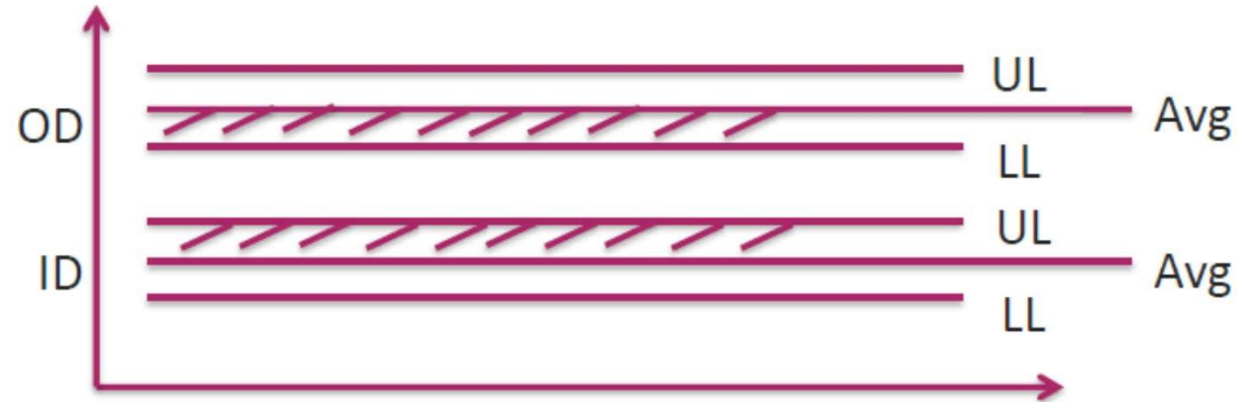
Significance
No contact of water with Brass due to thin layer of CPVC so no lead impurities due to Leeching.
Better torque bearing Capability. Everything is FOOD GRADE which involves solvent as well apart from Pipes & Fittings

Compliance to standards & Safeguarding by making completely FOOD GRADE

7. True-Fit Technology:



- Reduced Tolerances
- Tapered Design



8. Enhanced Technical Properties than competitors: CPVC (SDR 11)

- a. • Tensile strength of at normal temperature of ~27 degree Celsius is 61 MPA.
- b. • Burst Pressure of pipes and fittings is 141 & 110 Kg/cm² respectively.
- c. • Impact strength is tested at 1.8 meter without any cracks and deformations.
- IMP. d. • At elevated temp. of 82^o Celsius, highest burst pressure among competitors which is 77 kg/cm²

Robust manufacturing process with lower tolerance levels & with design improvements

Certifications – Aerocon Pipes and Fittings



CFTRI Certificate
 The Central Food Technology Research Institute has certified that Aerocon CPVC & UPVC Pipes and Fittings are of Food Grade – hygienic and safe, and can be used for transportation, filling and storing of drinking water at room temperature.



RoHS Certificate
 TÜV has certified that Aerocon Pipes and Fittings have passed RoHS test and are devoid of harmful and toxic substances. They are hygienic and safe, and in compliance with international standards.



CIPET Certificate
 The Central Institute of Plastics Engineering and Technology has certified that Aerocon Pipes and Fittings have successfully passed all tests recommended, and are of premium quality.



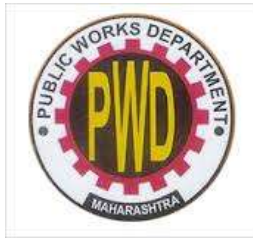
Shriram Certificate
 The Shriram Institute of Industrial Research has certified that Aerocon Pipes and Fittings have passed all the tests recommended.

Approved by



ISO 9001:2008
 CERTIFIED

Some of our Prestigious Clients



Some of our Prestigious Clients



**Thank You very much for
opportunity & time.....**

**T.Murali,
Technical Solutions
9490164725
murali.t@hil.in**