



THE ADORNER



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CMD's message

Dear Friends,

Even during tough times fuelled by rupee devaluation and price rise, we at Aludecor haven't lost sight of our goal of taking our Company to the next level. One among the many prerequisites for that is being sensitive about the society at large. Thus, we have introduced Firewall, our Fire Retardant ACP.

Firewall which withstands fire beyond 2 hours has cleared the rigorous test at Exova Warringtonfire labs, which stands out as a 'globally respected mark of quality assurance'. We have also given our country the first Cu⁺ marked antimicrobial Copper ACP. We are coming up with Timber Series with a wide variety of shades admired internationally.

It has all been your support, your feedback that gives us the strength and direction to keep on innovating, and give the market an enriching experience of elegance, quality and safety. So thank you once again.



Here's wishing you all a much better, newer and bigger 2014. And it would be our privilege to play a pivotal role in that.

Let's Talk!!

Ashok Kumar Bhaiya,
CMD
Aludecor Lamination Pvt. Ltd.



Cu⁺ the world's most effective antimicrobial touch surface material

One of the primary reasons why copper and copper alloy products are gaining prominence in diversified applications is because of its antimicrobial quality, durability and beauty. This unique combination provides users with exceptional hygiene and enriched satisfaction. Recently, a top South Korean restaurant chain, Tosilae, embraced 'Antimicrobial Copper' material. The table tops of the restaurant are coated with antimicrobial copper, which provide the customers with a clean, hygienic and enjoyable experience.

The first Cu⁺ marked ACP in India

Aludecor's antimicrobial Copper ACP has received Cu⁺ certification of the International Copper Promotion Council, thus being a one of its kind in India. A product known for its hygienic as well as aesthetic qualities, Copper ACP is a unique product innovation by Aludecor in the field of Aluminium Composite Panel industry.

CMO's talk



Subir Palit

Chief Marketing Officer

Dear Readers,

Last year has been an eventful year for us. Our consistent growth in market share across all categories has made us one of the fastest growing ACP Companies in India.

We feel this is just the beginning. We understand how vital your association is with us to make all of this possible. With more and more consumers making our brand as their choice, our association is bound to be strengthened. This year too is filled with marketing programmes in terms of new product launches and customer relationship initiatives which we will be keeping you informed of. So, let's get together and put our best foot forward towards success and prosperity in 2014.

Wishing you and your family a wonderful 2014!

Market insights

Aludecor launches Embossed Aluminium Composite Panel

The Stucco, Pinhole and Diamond Series of Aludecor constitutes its embossed series.

The textures of stucco and pinhole and the form of diamond are embossed on the ACPs.

The Stucco series is available in AL 45, 43, 33 and, 32 grades; the Pinhole Series in AL33 and 32 grades; and the Diamond series in AL32 grade only.

The embossed series comes in a wide variety of shades, and gives a ravishing look to buildings. Copper and Zinc panels can also come as embossed.

Timber ACP set to become all the rage

Aludecor is about to come up with a much wider variety of internationally sought after shades in its Timber Series. The Timber Series replicates natural wood texture and feel, thus being a direct competition to wood used for exteriors and interiors. Contrary to wood, using an ACP has its advantage of not requiring painting or polishing. Moreover, owing to its exact wooden finish, the Timber Series contributes directly to saving of trees. The series is available in AL 45, AL 43 and AL 33 grades.

Firewall gets Class B rating from Exova

Firewall, Aludecor's Fire Rated ACP has passed the rigorous class B - s1,d0 of EN 13501 part 1, conducted at Exova Warringtonfire (UKAS TESTING) to test REACTION TO FIRE, in addition to clearing the stringent ASTM E119 test for 2-hour fire resistance. It has thus become a pioneer in the segment.

The composite panel that withstands fire beyond 2 hours, has a mineral core, and conforms to the National Building Code. As fire safety of buildings keep gaining prominence among the architects and the facade consultants in the country, Firewall stands out as a welcome product in the real estate industry.

Aludecor's loyalty programme – a success

Aludecor's loyalty programme, 'Uphaar ka Waada' ended its six-month duration on 30 June, 2013. The programme was a major success with participation of 622 fabricators from the states of Rajasthan and Uttar Pradesh. While the Company strengthened its relationship with fabricators, the fabricators redeemed the loyalty points for exciting gifts during the six-month period of the programme. Of the 622 fabricators enrolled in the programme, 122 of them got qualified to redeem gifts. The gifts included Samsung Guru, Intex home theatres, Electrolux washing machines and refrigerators and Asus laptops. Among them one 'star fabricator' won a trip to Bangkok for outstanding performance.

Bedroom gets embellished with ACP

Ahmedabad resident, Mr. Bhupesh Nar Singhani has decorated his bedroom with Aludecor's Exclusive Series. 'I needed a quick and hassle free solution for decorating my bedroom' said a visibly elated Mr. Singhani. He has used the SP series for cladding the wall and the doors of the room. The showcase and the wardrobe too have been built with this ACP series.

Asked how it occurred to him to use ACP instead of plywood, Mr. Singhani said, 'ACP is much more durable compared to wood.' He added, 'It's (ACP) not going to have the problem of termites, and then there is no need to paint or polish it either.'



The bedroom of Mr. Bhupesh Nar Singhani embellished with the Exclusive Series of Aludecor. (Inset: Mr. Bhupesh Nar Singhani with his son Manav. Team Adorner salutes Mr. Singhani's innovative spirit.)

Compelling variety

Aludecor ACP has wide applications. It is used for signage and interior decoration.

1. Fiat Showroom, Ahmedabad (Dhruvil Automart) - Signage
[Installed by fabricator Ankit Patel]
2. SUBWAY - Signage
[Installed by fabricator Bhargav Bhai]



ArchiSpeak

Mr. TM Thomas, the principal architect of Thomas Associates in Bangalore, is one of the most respected architects of the country. He has over four decades of experience in traditional and specialised architectural services. The firm has delivered some of the country's greatest landmarks like the UB City Bangalore, Titanium Bangalore, Raheja Towers Chennai and the Bagmane Tech Park, among others.

Mr. TM Thomas shared some of his rich insights with us. Following are excerpts.



WE RUN OUR OFFICE LIKE A PROFESSIONAL OFFICE, NOT LIKE AN OFFICE WHICH FINDS ITSELF IN THE BUSINESS OF ARCHITECTURE. WE ARE INTO THE PROFESSION OF ARCHITECTURE.

Q: You have always insisted on a fine line between a profession and a business. Could you please elaborate?

We run our office like a professional office, not like an office which finds itself in the business of architecture. We are into the profession of architecture. As a result, we cannot physically endorse projects or products. We can endorse characters of products, a type of product or the generic product.

Q: How would you define ethics in architecture?

There are several aspects of ethics. One would be design ethics, which is a primary concern to us. You need to stick to design principles, design honesty and design truthfulness. Then there are professional ethics, where you don't get involved with the marketing or manufacturing of products. There is also the ethics of being responsible towards the client. You are expected to deliver what the customer expects, which among other things, include cost rationalisation as well. You should do justice to the trust he/she reposes in you. These are the three crucial ethics, apart from the ethics of abiding by the prevailing laws made by organisations like the NBO, the NBC, and so on.

Q: In France or maybe in other parts of Europe as well, architecture is aligned with the philosophy of conserving the countryside. What is the scenario in our country?

That philosophy is again one of the ethics, the fifth principle of ethics, which is about being responsible and sensitive towards the environment and

the society at large. Now, comparing our country with France and other parts of Europe is also not correct, as they are not densely populated. The per-acre population there is nothing when compared to our country. In a country of say 100 million, the pressure will naturally be less on the environment. However, even with a population of over 1.2 billion in our country, we should never lose sight of the importance of environmental sustainability.

A lot of that responsibility also lies with the government, in terms of how the roads are laid, how the countryside is preserved and all. Reuse of water etc. is going to have more and more impact in future for our kids. These have all come into construction now, and we are finding it a very nice stage to be in. Even our clients have become pretty aware of this, so our task has become that much easier.

Q: Do you think the government in our country leaves enough scope for creativity in architecture, although it follows a conventional approach in most cases.

The government adopts a new technology, only if it is tried and

tested and mentioned in the Bureau of Standards. You have to remember that government has to deal with a whole range of buildings from the bottom of the market as well. Therefore, it has got to be careful and may be conservative in some cases. If you deal with a lot of high-end stuff, you may also end up with a lot of accidents at the lower end, which is not covered adequately by laws. So I would say the government is right in being conservative to an extent. But there is also a considerable amount of research done by IISC and other people on composite structures, composite buildings, and so on. The implementation of research ideas will take time depending on affordability and evolving economic realities.

Q: Indian metros are starting to look the same, having the same kinds of shopping malls, commercial complexes and apartments. Do you think the characters of Indian cities are being challenged in a way?

What is architecture? It is the response to needs and aspirations of the people. The needs and aspirations in any city is the same. You will find the same sort of aspirations in any growing economy; not in India alone. All of us want to go to movies, shop well and stay at decent hotels. However, it is also important to maintain the heritage of a city.

Q: How difficult it is to embrace something new, materials for instance, for someone belonging to the old school of architecture?

I still cope with that every day (Laughs). But that's the fun of it also. Every day you are learning. New materials keep getting introduced every time. It is a challenge, but to me that's the exciting part of the whole thing also. In India, you know budget rules. The most elaborate building here may be \$100 per sq ft, whereas if you consider such a building in foreign locations which

you so admire, it will easily cost \$500 or even more.

Q: How would you rate aluminium composite panels from the point of view of affordability?

It is an exciting product. However, people have to be made aware that it is not a maintenance free product. It is a very desirable product, and it solves a whole multitude of problems for you. But if you see, many buildings with ACP claddings built 10-15 years back look very shabby today. That's no fault of the panels; but purely because they have not been maintained properly. Also, the fire issue has to be looked into. The FR ACP is the only material that has to be pushed in the market now. The other day I was in Dubai, and a building caught fire. The ACP went up like a candle. It was very scary.

Q: There's one memorable building designed by you in the structure of a ship. How do you decide on a structure like that?

I respond to the demands of the site. When I go to a site, the site speaks to me. I have a conversation with the site. I am going to put something on it, which may stay there for may be 50 years. When I go to a site, I hang around there, and that location responds. If it tells me to design something special, I will do it. And luckily, I have clients to foot the bill too (Laughs). I serve the purpose at a fixed point in time, and if that purpose continues to be useful 10 years or 20 years later, I am quite happy with the solution we have found.

Q: What is the end result you seek as an architect, while designing something?

The only thing that makes me happy is when the occupants are happy. To me, that's the be-all and end-all of architecture. It's not to please myself

that I make buildings. It's to please the people who live there, work there, eat there and play there. This is more important to me. When I go to a shopping mall or something built by me 10 years ago, and I see the light in the eyes of the people - to me that is architecture.

Q: Your take on our Copper and Zinc products

Wow! It is good to hear about these new products, because even 10 years ago when I travelled abroad, and looked at buildings there, I would wonder when I would get a chance to do things like that (using copper and zinc composites among others). But now that it's all here, I would look forward to explore the opportunities of using them.



The UB City, Bengaluru designed by Thomas Associates

Facade matters



Axis Facades is a global façade consulting giant credited with imprinting its signature on innumerable iconic buildings around the globe.

Mr. KR Suresh, Director of Axis Façade Consulting Pvt. Ltd., talked to Team Adorner, sharing invaluable inputs on the vast subject of façade consultancy. Following are excerpts:

Q: What is the awareness level for Fire Retardant ACPs in India?

In India except for the metro cities like Mumbai, NCR, Bangalore and Chennai where at least 30% of the projects consider FR Grade ACPs, awareness level is low. Considering the high-rise projects in the metro cities, developers are encouraged to use materials which mitigate the potential risk of deaths due to the disengagement of panels from the higher floors. In India, 90% of the projects do not even consider FR Grade ACPs due to cost implications and availability constraints.

Q: Do you feel that usage of Fire Retardant ACPs for all facades should be made mandatory?

I would advise the ACP manufacturers to stop the production of non-FR rated ACPs and shift gradually towards FR Rated ACPs only. We need to create a benchmark for the common man to follow instead of providing options of thickness, recyclable and virgin core etc. For example, a foreign brand took a conscious call to manufacture only FR Rated ACPs and suffered initially by losing orders. Over a period of time they built up awareness for their products and are successful in the market today.

What should an FR grade ACP comply with?

It should comply with two very important factors:

- Bond integrity: In accordance with ASTM D1781 (Resistance to panel de-lamination)
- Fire performance: In accordance with ASTM E84 – Passed Class A

Q: In which ways is a traditional architect not a facade engineer? How do their roles differ from one another?

The architect is an artist who visualises the building shape, its performance and optimises the utility scope. An architect's role is to design the façade skin and the façade engineer's role is to find ways and means to engineer and install the metal on the building. The facade engineer needs to ensure that the façade is installed correctly.

Q: Why does facade pose the highest risk in any project?

Façade being the exterior skin of the building is a high-risk component. Any degradation of the material may affect the pedestrian traffic and only proper engineering and execution can prevent danger to life.

I WOULD ADVISE THE ACP MANUFACTURERS TO STOP THE PRODUCTION OF NON-FR RATED ACPs AND SHIFT GRADUALLY TOWARDS FR RATED ACPs ONLY. WE NEED TO CREATE A BENCHMARK...

Q: In India, facade consultancy is not as popular or widespread as the West. Do you agree? If yes, how this problem can be addressed?

For most projects in the developing countries there is a notion that façade consultancy is just like any other profession and may not be considered as a must-do. As buildings start getting complicated, façade engineers play a major role in ensuring that the façade is built correctly. I personally feel that in the past 15 years, façade consulting in India has really evolved. The challenges are to execute projects with right façade engineers. The engineer needs to have technical acumen to understand the requirements of a project. He should never give in to demands of clients that might be detrimental to the performance of buildings. A façade engineer should apprise the client of the dangers beforehand. We would advise the client to duly value and appreciate a facade consultant's expertise.

Q: The success of a project depends a lot on how well the facade consultant coordinates with the technological demands of a building envelope to meet the required design criteria. Do you agree?

Yes, but unfortunately in India 'Do it Right the First Time' does not exist in our dictionary and thus it is inevitable that we make the same mistake over and over again. If we change this attitude and have stringent laws in place, I personally feel things would change. The word 'façade' means the complete envelope and there are permutation and combination of various materials, which could be considered for it. But most of the time the specifications are value-engineered with respect to cost-cutting and has no direct relation to what the façade consultant has specified. We always believe in the fact that if a façade consultant strongly holds his ground and takes charge of the situation, the malpractices can be avoided.

High performance façade may not necessarily be expensive and a proper energy simulation would ensure that the wall performs well. In India most of the wall claddings do not consider insulation to improve the performance of the wall and reduce the maintenance cost for the façade. In the bargain we use ACPs, Aluminium

Sheet, Stone, Porcelain and so on as a decorative material, which is wrong. We need to consider any façade skin as a performing wall, which ensures better energy saving, light and acoustic performance.

Q: Is there a possibility that the need for aesthetics reduces the focus on performance of facades?

No. Architects play a major role in convincing the client for a better performing wall rather than provide an aesthetic skin to the building. Architects and façade consultants need to educate the client on the material application and ensure that the wall performs according to expectations.

FAÇADE BEING THE EXTERIOR SKIN OF THE BUILDING IS A HIGH-RISK COMPONENT. ANY DEGRADATION OF THE MATERIAL MAY AFFECT THE PEDESTRIAN TRAFFIC AND ONLY PROPER ENGINEERING AND EXECUTION CAN PREVENT DANGER TO LIFE.

A FAÇADE ENGINEER SHOULD APPRISE THE CLIENT OF THE DANGERS BEFOREHAND. WE WOULD ADVISE THE CLIENT TO DULY VALUE AND APPRECIATE A FACADE CONSULTANT'S EXPERTISE.



The word 'façade' means the complete envelope and there are permutation and combination of various materials, which could be considered for it.

Yes you can



Mr. Varghese PV, CEO of the glazing and metal works division of Sobha Developers Limited tells us why the façade industry in India has still a long way to go.

India's façade industry is still fraught with challenges, but the situation is definitely improving, thinks Mr. Varghese PV, CEO of Sobha Glazing and Metal Works.

"India's façade industry is not what it used to be 8-10 years ago, because back then clients were unaware of specifications and what was required. Add to that paucity of good consultants with real knowledge about facades. Today, a lot of sensible facade consultants and contractors are there in the country. But still a lot more needs to be done", says Mr. Varghese. According to him, the answer to the problem is to have sensible contractors, clients or their consultants and they should know what to expect from an ACP work.

Highlighting the concerns that still linger in the industry, Mr. Varghese

insists, "Rout and Return (tray system) should be religiously followed, but unfortunately it's not followed everywhere even today". Pointing out the widespread usage of a faulty method in ACP fabrication, including that under the escalators of many malls, he says, "Many such ACP claddings are done by just screwing the ACP into the sub-frame which would not provide the desired strength".

Mr. Varghese feels that although the situation has improved quite a lot compared to what it was 10 years ago - owing to the growing number of sensible façade consultants, contractors and clients - a lot more still remains to be done. "The maturity level needs to improve a lot when you compare the scenario here with the Middle East and Europe," asserts Mr. Varghese. According to him, the facade industry in our country is now around 70% mature, compared to what it was in 1995-2000.

Mr. Varghese believes that the open groove system followed for installations abroad is a good methodology. "Silicon application is a very tough job. When we do structural glazing and ACP together, structural glazing demands around 12 to 15 mm groove, and finishing 15 mm groove ACP, is a tough job," explains Mr. Varghese.

ACP as a material does not permit mistakes. For, in case of a mistake, one has to wait for 2-3 days for the sealant to dry up and then cut out the panel and redo the entire process. There is also a dearth of skilled applicators for this precision job.

However, Mr. Varghese believes that the silicon sealant process which allows easy detection of faults in workmanship cannot be done away with in India, as the country is prone to rainfall for a considerable period of time. The open groove system does not provide immediate system to check, whether the fabrication has been done perfectly by the contractor or not. It is not feasible to check every length and breadth of the groove to see if there is any chance of rain water infiltration. In case of a leak in the open-groove fabricated ACP cladding, the exact location of infiltration will be extremely difficult to locate. But Mr. Varghese welcomes the open groove system, provided a real sensible contractor is involved capable of doing a perfect job.

Expressing his strong opposition against on-site fabrication, Mr. Varghese firmly asserts, "In case of on-site fabrication, chances of damages and scratches are very high." Stressing the fact that ACP fabrication is a precision job, owing to its sensitive PVDF coating among other things, he says, "One must use the wall mounted routing machine having 100% precision and do the routing in factory."

Mr. Varghese minces no words in praising Aludecor's delivery excellence and quality. However, he advises Aludecor to have the flexibility to produce coils of different widths. "A large product basket is a must. You should have coils varying from 1m to 4ft -5ft," says he. Such product diversity, he feels, would go a long way in fulfilling aspirations of customers.

TechTime

The essential features and components of aluminium cladding jobs.

Introduction

As an essential component of the Aluminium cladding job, it is not only the panel which facilitates decision making, but also the framework. The framework enables decision making on the deflection and stresses which the panel would be able to withstand due to wind-load. For the frame jobs it is recommended to use Alloy 6063 T5. The properties of this magnesium silicon aluminium alloy are as follows:

Properties	Metric	English
Density	2.70 g/cc	0.0975 lb/in ³
Hardness, Brinell	60	60
Ultimate Tensile Strength	186 MPa	27.0 ksi
Tensile Yield Strength	145 MPa	21.0 ksi
Elongation at Break (Typical; 1/16 in. (1.6 mm) Thickness)	12.00%	12.00%
Modulus of Elasticity	68.9 GPa	10000 ksi
Poissons Ratio	0.33	0.33
Fatigue Strength	68.9 MPa @# of Cycles 5.00e+8	@# of Cycles 5.00e+8
Electrical Resistivity	0.00000316 ohm-cm @Temperature 20.0°C	0.00000316 ohm-cm @Temperature 68.0°F
Average CTE	23.4 µm/m-°C @Temperature 20.0 - 100°C	13.0 µin/in-°F @Temperature 68.0 - 212°F
Specific Heat Capacity	0.900 J/g-°C	0.215 BTU/lb-°F
Thermal Conductivity	209 W/m-K	1450 BTU-in/hr-ft ² -°F
Melting Point	616 - 654 °C	1140 - 1210 °F

The chemical properties of the alloy are as relevant as the mechanical properties. Aluminium is highly susceptible to oxidation which is taken care of by magnesium. For the extrusion it is silicon which does the needful.

The alloy composition of 6063 is:

- Silicon minimum 0.2%, maximum 0.6% by weight
- Iron no minimum, maximum 0.35%
- Copper no minimum, maximum 0.10%
- Manganese no minimum, maximum 0.10%
- Magnesium minimum 0.45%, maximum 0.9%
- Chromium no minimum, maximum 0.10%
- Zinc no minimum, maximum 0.10%
- Titanium no minimum, maximum 0.10%
- Other elements no more than 0.05% each, 0.15% total
- Remainder Aluminium

Now when one considers the alloy, they should always take care of the thicknesses and the size which can withstand the loads that are applicable. The optimal size for 4mm composite panel would be 40mm X 40mm X 3mm. Today, one can easily get hold of IS graded 6063 extruded profile.

The connection spacing which has to be maintained when aluminium composite panel connects to aluminium construction material according to wind load is as follows:

Considering the panel width to be 1220 mm, wind load of 2200 N/m² and aluminium construction material 40 X 40 X 3

Wind Load W acting due to panel would be :
2200N/m² X 1220mm = 2.68 N/mm

According to stress

$Z > W \cdot XL^2 / 8 \cdot X \cdot \delta$
Where Z is cross section module, W is wind load, L is space interval and δ is yield strength
Cross Section Module Z (mm⁴) = 0.121 X 10000 mm⁴
W as calculated above = 2.68 N/mm
Min Yeild Strength = 145 N/mm²
So, from the above formulae
 $L^2 < Z \cdot X \cdot 8 \cdot \delta / W$
 $L^2 < 1210 \cdot 8 \cdot 145 / 2.68$
 $L < 724 \text{mm}$

According to deflection

$L / 200 > 5 \cdot W \cdot X \cdot L^4 / I \cdot X \cdot E$
Where I is Moment of Inertia and E is Elastic Module
 $I = 35400 \text{ mm}^4$
 $E = 70000 \text{ N/mm}^2$
 $L / 200 > 5 \cdot 2.68 \cdot X \cdot L^4 / 35400 \cdot 70000 \cdot X \cdot 384$
 $L^3 < 35400 \cdot 70000 \cdot X \cdot 384 / 5 \cdot 2.68 \cdot X \cdot 200$
 $L < 708 \text{mm}$
From the above we should take the lowest value i.e. 708mm which should be the spacing maintained by the aluminium framing material.

Pinboard



Sl. No.	City	Project	Architect	Fabricator	Square Meter	Material	Shade
1.	Coimbatore	Le Meridien 5 Star Hotel	Oscar & Ponni	Noble Consolidated Glazing	5000	AL-45	AD-73, AD-05
2.	Noida	Logix Cyber Park	DFA		1022	AL-45	AD-01
3.	Bangalore	St. Symphony Teleca	R Chakrapani & Sons, Chennai	Nikitha / Altra	9000	AL-45	AD-03
4.	Mumbai	Wockhardt Hospital	Stup Consultant	FIC Engineering	13000	AL 45	AD-02/AD-03
5.	Vadodara	Bray Controls India Pvt. Ltd	Davenport Ablaze	JN Sheets	17000	AL-33	AD-73, AD-02, AD-21



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