



THE ADORNER

Volume 2 April - June 2013

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Dear Friends,

We have been in this business for quite some time now. When I embarked on this business, ACP was getting introduced to the market. To stand out as a quality manufacturer and service provider in a scenario where quality was not the top priority, as many of my friends in the fraternity will agree, was tough initially.

We all found the answer in perseverance and honesty. There was yet another way to answer this situation – constant innovation. The market needed that. We at Aludecor are infinitely grateful to our architect and fabricator friends who have been constantly with us on this.

Having been through that initial phase of struggle, and reaping the benefits today, we have our eyes set on the future. Tomorrow will pose different sets of possibilities, challenges and demands.

We are ready for tomorrow. Aludecor will have a new look in the new financial year. We will innovate more to offer more elegance. Thus, we have a new brand slogan: 'CARVING OUT ELEGANCE WITH INNOVATION'.

I am sure that you will be with us on this new journey as well.

Let's Talk!!

Ashok Kumar Bhaiya

Managing Director

Aludecor Lamination Pvt. Ltd.



PVDF is the best option!

PVDF is formed of a fluorine-carbon short bond combined with the hydrogen bond. This makes it extremely steady and highly non-reactive. It reduces the paint's adhesive nature, but enhances its weather-resistance. A scientific procedure is adopted in primer which helps it stick firmly to the base material. PVDF's molecular structure guarantees protection against ultraviolet radiation, Mek resistance and environment-friendly coating of paint.

Market Insight

A commitment to cost-effectiveness and quality



Aludecor has launched *Elygant Series AL 45* – a perfect blend of cost effectiveness and quality.

Most of the mechanical and chemical properties of AL 45 (*Elygant*), a 4mm panel with 0.45mm thick aluminium skin, are similar to the AL 45 (*Select/Masterwork*), a 4mm panel with 0.5mm thick aluminium skin.

AL 45 (*Elygant*) has a coating thickness

of 23 to 28 microns. The thickness of the adhesive is 80 microns, and the alloy used is AA 3105, the same that is used in the AL 45 (*Select/Masterwork*).

A wind load of 170 N/mm² exerts the same stress of 8.15 kgf on a 16 square feet panel of both AL 45 (*Select/Masterwork*) and AL 45 (*Elygant*) series.

A wind load of 200 N/mm² subjects AL 45 (*Elygant*) to a tad more stress (10.37 kgf) compared to what it subjects AL 45 (*Select/*

Masterwork) to (9.58 kgf). However, the alloy being the same, the maximum stress that can be withstood by both AL 45 (*Elygant*) and AL 45 (*Select/Masterwork*) will be the same, which is 14 kgf.

Both the panels have the same colour schematics and can be used in similar external conditions.

The product will reduce the customer's project costs, without compromising on quality.

Wind Load Stress Comparison Calculation

Stress Calculation for 4ft X 4ft of AL 45 (*Select/Masterwork*) and AL 45 (*Elygant*) with wind load 170 N/mm²

Stress put on the panel of AL 45 (*Select/Masterwork*): 8.15 Kgf

Stress put on the panel of AL 45 (*Elygant*): 8.15 Kgf

Stress Calculation for 4ft X 4ft of AL 45 (*Select/Masterwork*) and AL 45 (*Elygant*) with wind load 200 N/mm²

Stress put on the panel of AL 45 (*Select/Masterwork*): 9.58 Kgf

Stress put on the panel of AL 45 (*Elygant*): 10.37 Kgf

Aludecor develops Copper Series.....

Aludecor is coming up with a new series, Copper Series, which is yet another addition to its wide array of innovative products known for high quality and unbeatable price. **Copper Aluminium Composite Panel** is produced with copper at the top, aluminium coil at the bottom and a low density polyethylene core in the middle.

The natural copper is bright red which transforms to patina which builds up over a period of about 8 years under normal urban conditions. Its colour during this process ranges from red brown to dark brown and grey to the typical green.

Empowered by German technology and support, Aludecor has used phosphorous deoxidized copper which is widely used in architecture and construction materials, and in some industrial segments.

Copper has lower electrical and thermal conductivity. It resists hydrogen embrittlement and possesses excellent corrosion resistance. It is also resistant to effects of gypsum, lime and cement and forms a dense greenish layer of

copper salts upon contact with air. Besides, Copper has excellent formability and high scrap value.

Moreover, copper is also a clinically proven antibacterial material according to the Environmental Protection Agency or EPA, and thus can be used in the health sector. This feature differentiates this product from most other ACPs which can transmit microorganisms to human body on being touched.

Copper's essential mechanical properties make it tough enough to withstand harsh external conditions.

A **Copper Aluminium Composite Panel** has a maximum allowable stress of 23kgf. A 1200mm x 2400mm panel of Copper Series of Aludecor having copper coil thickness of 0.21mm, aluminium coil thickness of 0.5mm, and total panel thickness of 4mm will withstand 200 kgf of wind load. This is because the maximum stress that will be induced by wind load on the panel will be 20.28 kgf which is less than the maximum allowable stress.

Lower electrical and thermal conductivity

Resists hydrogen embrittlement

Excellent corrosion resistance

Resistant to effects of gypsum, lime and cement

Excellent formability

High scrap value

According to EW 1652 –

Tensile Strength: 240 – 300 N/mm²

Yield Strength ≤ 180 N/mm²

Elongation: A 50 mm 8 %

Passed Embrittlement Test

ArchiSpeak



Mr. Kulmeet Shangari is a renowned name in the architectural fraternity, having a plethora of high profile projects to his credit. He is the Managing Director of ACPL Design Ltd., a four-decade-old company which was founded by his father, Late Mr. Ajit Shangari. ACPL has worked with Spaze, Orris, Paras, Earth Infrastructure, Jindal Steel & Power Ltd, HBN and almost all big players in the construction world. Expanding its reach further, the company under the leadership of Mr. Shangari and supported wholeheartedly by Mr. Ashok N. Pandit, the Chief Architect of the company since 1992, has forayed into the hotel industry, presently working on big projects like Country Inn Suites and Radisson. It has been an honour for us to have a short conversation with him. Following is an excerpt.

Q. Many aspiring architects end up being structural engineers. Is there a dearth of opportunities in our country?

We are a developing nation which itself says that we are brimming with opportunities. To pursue architecture one must have confidence in himself. Architecture is much more versatile than any other field. It's all about the orientation you have. To be an architect one must be able to perceive and foresee the problems.

Q. As an architect how does your dream cityscape look like?

I always advocate a vertical city as it includes lesser coverage of land. It also allows us to offer scenic advantages to the end user with optimum utilization of land asset which results in more dwellings per unit area.

Q. How can recession impact architecture?

Recession always has an impact on all types of industries. **For me good opportunities always crop up during recession.** Whenever there's a recession, there's enough time available to the client as well as the

architect for planning right things. Architectural services cost the client the least but have maximum impact on his project. And during recession even our clients spend more time in visualizing the overall impact of selecting the best architectural solution.

Q. How do architecture and interior designing complement each other?

They have to have the same concept and theme. In other words architecture and interior designing must have thematic coherence between themselves.

Q. How much do you value facade as an architectural component?

I spend almost 50% of time on facades and 50% of my time on blending things with the interiors.

Q. As an architect, what do you expect of an ACP manufacturer?

The colour and the size of the ACP shouldn't vary from the requirement. There should also be continuous effort towards coming up with innovative solutions. For instance, the limitations in cleaning ACP need to be addressed.

I have heard that Aludecor has come up with a functionality based ACP to address this cleaning issue, and I am looking forward to see a demonstration of that.

Q. Could you tell us something about that one project of yours which is very close to your heart?

Orris Floreal Towers located in sector 83 of Gurgaon is the closest to my heart. It's the tallest building of New Gurgaon area. Spanning 100 meters of height, it has got the biggest Tensile structure in the entire NCR region. The building has already been commissioned and we are planning a soft launch in coming 3 months.

Q. Any suggestion for Aludecor as a leading ACP manufacturer in India?

As a manufacturer you should also provide technical assistance regarding installation of material at site. You may also ponder upon having your own team of applicators as nobody minds in spending a few more bucks for the right product installed as per correct methodology.

contd in page 7

Yes You Can!

ACP has come across as a versatile product, but the leading designers are asking for more, says Alpro MD Mr. Nikhil Jain



Alpro Industries expanded its business from being one of the largest channel partners of Nalco in North India, into aluminium fabrication in order to bridge the huge gap between customers' expectations of quality and the actual performance of the then players in the market. The company invested heavily in building its state-of-the-art infrastructure and introduced more professionalism by separating production from installation.

"Production happens totally in a controlled environment like an industry, and installation happens like a professional project management as a partner of the client" – asserts Mr. Nikhil Jain, the Managing Director of Alpro Industries, a part of a 35-year-old group enjoying impeccable reputation

in aluminium fabrication and diverse businesses.

Initially it took some time for customers to appreciate the better quality of factory fabricated products – offered by Alpro - compared to the site fabricated ones. But perseverance paid off as the difference in quality became too apparent to customers and the scenario changed quickly in Alpro's favour.

Now that the ACP market is booming, Mr. Jain feels that it's time that producers explored newer avenues of the product. Says he: "the leading designers are looking at elevating ACP from a mere cladding material - used to cover all base civil defects - to a material that can be used to unleash their creativity." Designers want stone or wood finishes of ACP look like real stone or wood, according to Mr. Jain, whereas some such finishes appear artificial at times.

The leading designers are looking at elevating ACP from a mere cladding material - used to cover all base civil defects - to a material that can be used to unleash their creativity.

He further insists that the fabrication industry should also keep upgrading infrastructure, both in-house and on-site rather than being complacent.

Like most reputable aluminium fabricators, Alpro too strongly advocates zero compromise on quality. Choosing the right ACP manufacturer is of the essence to the company. An ideal manufacturer, Mr. Jain opines, will use right material for aluminium sheet with no undercutting on thickness. It will use high quality PVDF coating and virgin

We executed an IT SEZ, where not only did Aludecor develop the colours, but also delivered the product on time to meet the required standards for a fast-track project

core material with correct chemical composition. And it will deliver the product on time.

Citing the example of Aludecor with whom Alpro maintains a better rapport compared to other manufacturers, Mr. Jain recounts: "We executed an IT SEZ, where not only did Aludecor develop the colours, but also delivered the product on time to meet the required standards for a fast-track project." He minces no words while veering off to praise Aludecor's 'flexibility in matching colours and creating samples'.

Mr. Jain further adds that a fabricator should also strictly follow all details approved by the architect or the consultant, and religiously adhere to all working methods prescribed by the manufacturer.

He shows some concern for the challenges posed to Indian fabrication workmanship by civil construction alignment, quality, demanding schedules and simultaneous projects. "With the right support however workmanship in our country can give the foreign counterparts a run for their money" – asserts Mr. Jain.

Mr. Nikhil Jain lays stress on organizing joint training workshops by manufacturers and fabricators to create awareness about correct methods of fabrication and installation, and is ready to do whatever it takes for the overall growth of the industry – a hallmark of a visionary entrepreneur indeed.

TechTime

Aluminium is becoming an integral part of modern day architecture. Why? Let's find out.

Eco-friendliness is the watchword of architecture today. And aluminium clearly stands out as the right choice for the purpose. The recyclability of aluminium saves almost 170 million tonne of greenhouse gas emissions per year. It has excellent UV and sea water resistance.

Also aluminium allows architects and structural engineers more creative liberty owing to its wonderful formability and unlimited colour options. Moreover, aluminium's ability to form alloy with many elements like manganese, magnesium, zinc etc, makes aluminium alloy delightfully versatile. Its physical and mechanical properties can be varied widely and thus used for a vast range of applications.

All this makes aluminium alloy the most important component of facade works. It is an essential component for both framework and ACP.

The alloys which are used today are: AA1100/ AA3105/ AA5005/ AA6063

Ideally we should stick to the earlier norm of taking into account the chemical properties of these alloys rather than their mechanical properties. But many do the reverse which isn't the right way of going about it.

Majorly all of these are magnesium and silicon based alloys. The amount of magnesium decides the anti corrosiveness, and silicon decides its ability of being moulded into different shapes.

Alloys	%Mg	% Si
AA1100	0	Fe+Si = 0.9
AA3105	0.2 – 0.8	0.6
AA5005	0.2 – 1.1	0.3
AA6063	0.45 – 0.9	0.2 – 0.6

These alloys are given the required tensile strength, thickness and shape according to their chemical properties. We should decide usage of these alloys considering their applications.

AA6063 have the properties for extrusion and when we anodize it or powder coat it, its life in exterior becomes long enough because of the amount of magnesium. AA6063 is used in the framework of facades.

Two things that we need to check before installing the framework are:

- Maximum Stress:** $Z > (W \cdot L^2) / (8 \cdot \delta \cdot \%0.2)$
- Deflection:** $L / 200 > 5 \cdot W \cdot L^4 / E \cdot I \cdot 384$
- Z:** Cross Section Module of Bottom Construction (mm³)
- W:** Wind Load (N/m)
- L:** Support Interval (mm)
- E:** Elastic Module (N/mm²)
- I:** Moment of Inertia (mm⁴)
- δ% 0.2:** %0.2 Stress Endurance (N/mm²)

This would enable us to calculate the frame interval, L, according to wind load and mechanical properties of the alloy.

Also, when we calculate the panel size of the ACP, alloy is the major factor as it is the one which would take the wind load of the entire panel.

Maximum stress that can be withstood by a panel can be calculated from the tensile load of the alloy. So, to calculate the panel size, we would calculate the maximum stress being applied on the panel, and if that is less than the maximum allowable stress that can be borne by the panel, only then can it be the exact panel size.

Applications of AA1100, AA3105 and AA5005 alloys are decided in the similar way as discussed above. The chemical properties of an alloy decide the cost of it. The alloy with minimum chemical properties, as regards being used for ACP, is given the lowest tensile strength and the alloy with higher chemical properties is given a higher tensile strength. AA 1100 gives us 120 N/mm² to 140 N/mm², AA 3105 gives us 150N/mm² to 180 N/mm² and AA 5005 gives us 180 N/mm² to 220 N/mm².

The panel size is according to the wind load and stress which a panel can take.

- δ max:** $\beta \times w \times b^2 / t^2$
- where **δ max** is stress taken by panel
- β** coefficient from panel size ratio and connection type
- w:** wind pressure (N/mm²)
- b:** Length of shorter side (mm)
- t²:** (Panel Thickness³ - LDPE Thickness³) / Panel Thickness

World Architecture News

Africa



Floating school

NLÉ Architects has built the Makoko Floating School in Lagos, Nigeria. The floating school constructed with local materials has been envisaged as the first phase of a floating town in Makoko. The school has been built on a flotation platform and has additional features such as two classrooms, a playground and PV cells. The building has been

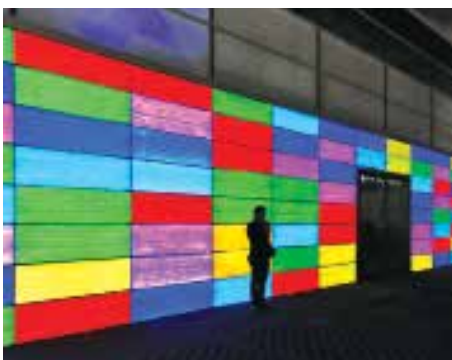
designed to make it adaptable to the changes in water level in the area. The broader objective of creating such buildings is to ensure sustainable development among water communities in coastal African cities.

Architect: NLÉ Architects

(News dated: 25th February, 2013)

(Source: www.worldarchitecturenews.com)

Europe



Lighting your world

Aachen-based architecture firm Carpus & Partner has unveiled the LUCEM Media Facade at RWTH Aachen University in Aachen, Germany. The media facade consists of light transmitting concrete panels designed by German concrete manufacturer LUCEM. Each of the panels constitutes a colour-changing technology, with the colour becoming brighter around an hour before sunset.

The light panels, which are made with red, green and blue chips, control over 16 million colours. The entire facade can become a large display screen through independent control of the panels. A mobile phone or internet can be used to control the light shows on the screen.

Architect: Carpus & Partner

(News dated: 28th February, 2013)

(Source: www.worldarchitecturenews.com)

ArchiSpeak contd from page 4



Mr. K Thomas, the founder of K Thomas and Associates at Vashi in Navi Mumbai, and an architect who has been creating an indelible impression on the world of architecture through his works on schools, colleges, hospitals, automobile showrooms etc. for the last 26 years briefly talked to *Team Adorner* about where he feels architecture stands today.

Q. Has the scope of creativity in architecture dwindled with more apartments coming up today, and all those big houses and bungalows slowly going out of fashion?

I don't agree that the scope of creativity has diminished. Any architectural form is relevant at different times and different scenarios. If an architectural form becomes less relevant today that doesn't mean that it won't re-emerge as a need of the hour tomorrow. Again different places may offer completely different scenarios to a form, making it something really sought after somewhere, but not so much someplace else. I believe that this changing scenario increases the scope of creativity rather than diminishing it.

Q. What is your take on matchbox architecture?

Matchbox architecture is a response to the times. It depends on how we look at it and handle it. We've got to live with the reality that there is shortage of space today, especially in a city like Mumbai. We should look at this from a positive perspective and put on our thinking caps to offer creative solutions rather than ruing about the same.

Q. What is the value of ACP in modern architecture?

Value of ACP in modern architecture could be in making the building or structure more streamlined and businesslike in the light of the great strides in technology in architecture.

What to watch out for INDIA ABROAD

April 19-21

PROPERTY FESTIVAL

Real estate fair

Chennai Trade Centre
Nandambakkam
Chennai – 600 089, India
Contact Details
Tel: + (91)-(44)- 22316033
Fax: +(91)-(44)- 22313555

April 16-18

INNOVATIVE BUILDING 2013 Innovative, Sustainable & Efficient Building Expo

Paris Expo Porte de Versailles
1 place de la Porte de Versailles
75015, Paris France
Tel : +33 01 40 68 22 22
Fax : +33 01 40 68 20 06

April 18-21

HELLENIC ALUMINIUM 2013 Aluminum in Building Expo

Athens Metropolitan Expo
Athens International Airport
"Eleftherios Venizelos"
19019, Spata Greece
Tel : +30 210 3542900
Fax : +30 210 3542910

April 23-26

PRO ARCH 2013 International Building Fair

Exhibition Hall - Tents
Banská Bystrica,
Slovakia
Tel : +421 48 4125 945
Fax : +421 48 4124 205

April 19-21

SIGN TODAY CHENNAI 2013 Signage & Advertising Expo

Chennai Trade Centre
Nandambakkam
Chennai – 600 089, India
Contact Details
Tel: + (91)-(44)- 22316033
Fax: +(91)-(44)- 22313555

April 23-27

IBF 2013 International Building Fair

Brno Exhibition Centre
Vystaviste 1
64700, Brno
Czech Republic
Tel : +420 541 15 25 87
Fax : +420 541 15 30 79

May 6-10

BATIMATEC 2013 Building & Construction Materials International Exhibition

Palais des Expositions d'Alger
Pins Maritimes Alger –16000,
Algeria
Tel : +213 21 386727
Fax : +213 387058

May 5-7

GULF BID 2013 Annual Exhibition for Construction and Interiors

Bahrain International Exhibition
& Convention Centre (BIECC)
Building 158, Avenue 28
Sanabis, Block 410, Bahrain
Tel : +973 17 558800
Fax : +973 17 553447

May 24-26

ROOF INDIA 2013 International Event showcasing the Emerging Trends in Roofing and Facade Engineering

Bombay Exhibition Centre - NSE
Exhibition Complex Highway,
Goreagon (East)
Mumbai – 400 063, India
Contact Details:
Tel: +(91)-(22)- 6645 0123
Fax: +(91)-(22)- 6645 0101

May 6-9

PROJECT QATAR 2013 International Trade Exhibition For Construction Technology, Building Materials, Equipment and Environmental Technology in Qatar

Doha Exhibition Center
Doha, Qatar
Event Organiser Contact Details:
Tel : +974 4329900
Fax : +974 4432891

May 15-18

CAUCASUS BUILD 2013 International Specialized Fair for Construction, Renovation, Furnishing and Design

Expo Georgia Exhibition Center
118 Tsereteli ave.
Tbilisi – 0119, Georgia
Tel : +995 32 2341100
Fax : +995 32 2351100

June 11-13

MATERIAL VISION 2013 International Conference and Specialist Trade Fair on New Materials for Design and Architecture

Exhibition Centre Frankfurt
Ludwig-Erhard-Anlage 1
60327, Frankfurt a. M.
Germany
Tel : +49 69 75 75 0
Fax : +49 69 75 75-64 33

May 25-26

ETACETECH – HYDERABAD Exhibition dedicated solely to the Construction Industry

Hotel Taj Krishna
Road No: 1, Banjara Hills
Hyderabad – 500 034, India
Tel: +(91)-(40)- 66662323
Fax: +(91)-(40)- 66661313

June 19-22

ARCHIDEX 2013 Malaysia Architecture, Interior Design & Building Exhibition

Kuala Lumpur Convention Centre (KLCC)
Kuala Lumpur City Centre,
Kuala Lumpur – 50088, Malaysia
Tel : +60 3 2333 2888
Fax : +60 3 2333 2800

June 20-24

INTER BUILD - EGYPT 2013 International Exhibition & Conference for Building & Construction

Cairo International Convention & Exhibition Centre
Nasr Road Nasr City, Egypt
Tel : +20 2 2634631
Fax : +20 2 2634640

You can get in touch with us at:

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