



## Other Applications of Aerocon Panels



Balajyoti Govt. Primary School



Army Barracks, Kargil



Guest House, Alstom



Industrial Cladding



Residential Quarters



ATM Centre

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or contact any of our offices listed elsewhere in our folder.

Rudra/September 2009/5,000



## Cost-Effective Mezzanine Flooring Solutions with AEROCON

Aerocon  
PANELS



HYDERABAD INDUSTRIES LIMITED



## Design and procedure for fixing of mezzanine floors

Mezzanine flooring can be constructed using 50mm and 75mm square edge Aerocon panels. The supporting structure should be designed by a structural engineer as per the loading requirement and is to be fabricated before installing Aerocon panels. However we are providing herewith a basic guideline in selection of panels and design of Mezzanine floors.

### 1) Selection of Panels:

- ❑ For residential, commercial usage and Industrial loading up to 650 Kg/m<sup>2</sup> (Uniformly distributed load), we recommend use of 50 mm thick panels.
- ❑ For heavy loading usage / industrial loading applications up to 1000 kg/m<sup>2</sup> (Uniformly distributed load), we recommend use of 75 mm thick panels.

### 2) Basic guidelines in selection of Secondary beams and Spacings

Loading (UDL) in Kg/Sqm	Spacing of Secondary Beams in meters	Steel section recommended for a 3.0 M Span	
		50 mm thick	75 mm thick
Upto 300	1.50	ISMC 100	ISMC 100
300 to 400	1.35	ISMC 125/ISMB100	ISMB 100
400 to 500	1.20	ISMC 125/ISMB100	ISMB 100
500 to 650	1.05	ISMC 125/ISMB100	ISMB 100
650 to 800	0.90	-	ISMC 125
800 to 1000	0.75	-	ISMC 125

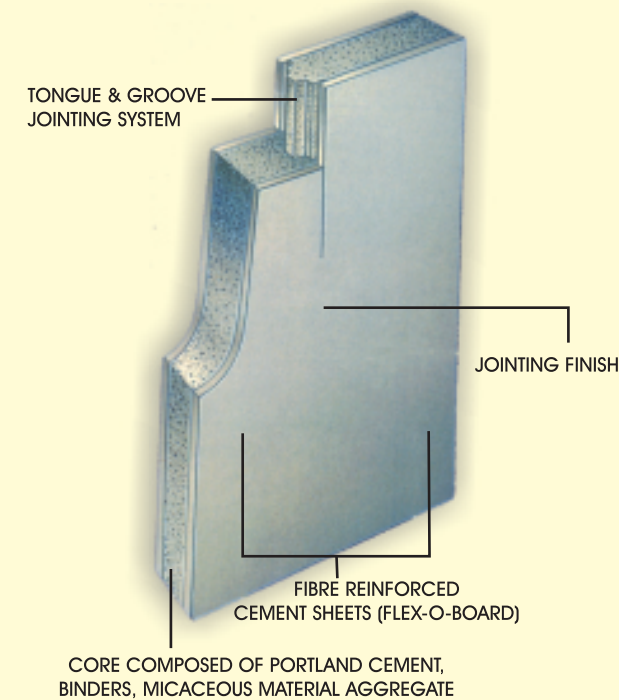
### Some tips to help you get the best out of an Aerocon mezzanine floor.

- ❑ As a thumb rule, for office space and personal applications, minimum load for a mezzanine floor is 350kg/m<sup>2</sup> and for material handling or storage the minimum load is 500kg/m<sup>2</sup>.
- ❑ Economical column grid is of 3mts x 3mts. Height of finished mezzanine flooring should be preferably 3mts. (this saves the cost of mid landing)
- ❑ The supporting frames are made in open or closed steel sections.
- ❑ Place the panels on frame and drill 11.5mm dia holes from bottom side.
- ❑ Fasten the panels to MS section using csk bolts size M10 of required length.
- ❑ Always support the panels along the tongue and groove with 'T' section (ISNT-50),
- ❑ Always support the 'T' section (ISNT-50) length wise with secondary beams as per loading requirements,
- ❑ Ensure that staircases are always fitted externally to the mezzanine structure.
- ❑ Avoid sharp point loads and impact loads on mezzanine floor.
- ❑ It is recommended to use rubber beading of 5mm thick duly stuck with rubber adhesive between panel and 'T' section for cushioning effect in between panels and steel supporting sections.

**Note:** 1. Aerocon panel mezzanine flooring should not be used without any cover. We recommend flexible flooring material like PVC, Rubber Tiles, Carpet, Linoleum, Wood etc as finishing.

2. In case area is a wash/fumigated area such as Hospital/Lab etc, we recommend use of small floor tiles of 8"x8" and fixing to be done by tile adhesive only.

## AEROCON PANEL SYSTEM



DSIR National Award for R&D efforts in the area of new materials.

## ADVANTAGES

### Fast Track Construction



Easy to Install



Light Weight



Saves Time



Durable

- ❑ **Tongue and groove joining System** allows faster construction.
- ❑ **Easy workability**-no special tools required.
- ❑ **Lightweight** panels allow easy handling and erection.
- ❑ **Factory cured panels** eliminate need for on-site curing.
- ❑ **Re-locatable** - complete structure can be dismantled and re-erected.

### Strong & durable

- ❑ Panels are manufactured from high quality materials imparting adequate **strength and long life**.



Water Resistant



Termite Resistant



Fire Resistant



Sound Insulation



Saves Space

- ❑ Excellent **water, termite and fire resistant** properties to withstand adverse weather conditions.
- ❑ **Fire rating** - 50mm panel - 1 hour (non load bearing)  
75mm panel - 2 hours (load bearing)

- ❑ **Most suitable for seismic and cyclone prone zones**

### Other Advantages

- ❑ **Excellent surface finish** - takes all decorative treatments.
- ❑ **Excellent thermal and sound insulation** properties.
- ❑ Slim Aerocon panels provide **extra usable floor space**.
- ❑ Usage of fly ash and timber-free AEROCON makes it **eco-friendly**.



### Corporate Profile

## Redefining building dynamics for the changing times.

*Times are changing and change is the only constant in man's quest for a better life. At Hyderabad Industries Ltd, the focus of our corporate mission is to provide innovative yet cost effective solutions to the building industry through its popular Charminar range of products. From low cost roofing to partitions and panelling, false-ceiling to mezzanine flooring ... and high quality building blocks to India's first ever thermal roof tiles to keep weather under control.*

*We are working constantly to create and respond to emerging opportunities. Supporting these efforts are our unique strengths in R & D, production, marketing and an all-India distribution network to put our products and solutions within your reach.*

**Why worry about rising steel prices ?**

**MEZZANINE FLOOR with AEROCON Panels gives you 40% cost-reduction !**

### HIL's total solution concept

Hyderabad Industries Ltd is pleased to offer you total solutions in building quality low-cost mezzanine floors wherever you need with Aerocon panels. Aerocon panels of 75 mm / 50 mm are ideal for Mezzanine flooring in high load-bearing and low load-bearing structures for commercial, industrial and other applications. Our innovative mezzanine flooring solutions offer you upto 40 % cost reduction in Mezzanine floor construction (compared to steel chequered plate- on indicative costing).

Today, we have a set of business partners who can undertake your jobs on turnkey basis any where in India and to your satisfaction. For your convenience, we have also developed a loading procedure chart which will help you choose the right type of Aerocon panel and right section of steel structure.

Our innovative Mezzanine flooring concepts are based on total dry construction and fast construction using factory-made Aerocon panels.

### Technical Specifications

PROPERTIES	THICKNESSES		REMARKS
	50mm	75mm	
Weight (nom) per sq.m. (Kgs)	43	60	Nominal weight@
Axial load/metre width (KN/m)	53	83	Factor of Safety - 2.5
Bending Test (4 point UDL)			
Uniformly distributed load			
(Kg/m <sup>2</sup> )			
2.9 M span	73	100	Factor of Safety - 2.5
1.5 M span	198	265	
Flexural Strength/Modulus of Rupture (Kg/cm <sup>2</sup> )	67	58	Typical Test results
Compressive Strength (Kg/cm <sup>2</sup> )	30	40	Typical Test results
Thermal Conductivity (W/m deg. K)	0.22	0.21	BS 4370-Part 2
Sound transmission co-efficient (db)	33	36	IS : 9901 (Part III)-1981
(Typical Test result of Prasar Bharati and National Physical Laboratories)			IS : 11050 (Part I)-1981
Fire rating (minutes)*	60	120	BS 476 Part 20-22
Surface spread of flame*	Class I		BS 476 Part 7-1971
Fire Propagation Index (I)*	3.7		BS 476 Part 6-1981
Ignitability*	Class 'P' (not easily ignitable)		BS 476 Part 5-1968
Standard Sizes :			
Length	-	2.4m, 2.7m, 3.0m	
Width	-	600mm	
Note : The above specifications are based on typical test result of AEROCON panels with Flex-O-Board and are subject to revision.			

\* As per test result of CBRI, Roorkee.

@ Could vary due to change in moisture content.

Product patent no. 188942



**HYDERABAD INDUSTRIES LIMITED**

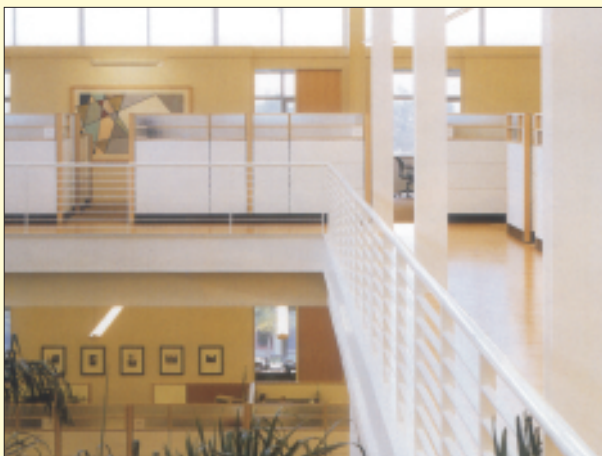
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**Custom-made solutions for any Mezzanine Flooring application in commercial, industrial, restaurants, watchtowers & many more**



## What is Aerocon Panel :

Aerocon Panel is a sandwich panel of two fibre-reinforced cement sheets enclosing a light-weight core composed of portland cement, binders and mix of siliceous and micaceous material aggregate. These panels are fully cured at factory and are ready for installation. With its factory cured properties allows Aerocon Panel Mezzanine floor to be constructed totally dry, with no messy wet cement work resulting in consistent quality of floor.

## Why is Aerocon most suitable for Mezzanine Flooring :

**1. Economy:** Aerocon panel of 75 mm is available at 40% cost compared to steel chequered plates, resulting in substantial cost saving on any Mezzanine flooring jobs.


**2. Factory Made Quality:** Aerocon panel is basically factory-made & cured panels. Each lot of panels is subjected to various quality check and only after passing through all quality/weathering characteristics are these panels then dispatched to sites in a ready to install condition.

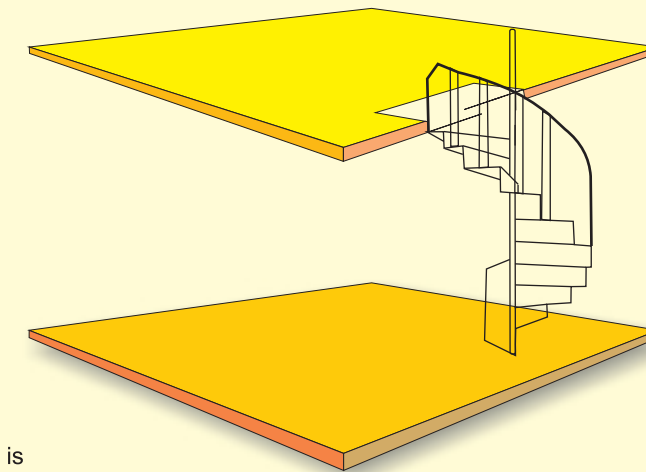
### 3. Fire proof :

Aerocon panels are **fire tested** at CBRI, Roorkee and comes with a fire rating of 60 minutes to 120 minutes as per BS 476 Part 20-22. Also these panels have excellent resistance to **surface spread of flame** and have very low **ignitability** (Surface spread - class-1 (lowest) and Ignitability -Class P (not easily ignitable)).

### 5. Thermal Insulation :

Aerocon panels have very low K-Value at 0.22, which is at least 7 times lower than RCC (1.44 to 1.8), resulting in good thermal insulation. This particular property helps substantially reduce the heat loss and result in power savings in A/C rooms.

  
Business sense demands you simply double it



And double your profits too at **40% lower cost** with

**AEROCON**  
MEZZANINE  
FLOORING

### 4. Safe floor :

Compared to other conventional material like wood & Steel Aerocon panels are safest material to with stand fire, hence it is advantageous.

### 6. Various design / flooring options :

Our Mezzanine floors can be designed to suit various loading requirements and can be covered by any flexible flooring systems like vinyl floor, rubber mats, carpets or even very small tiles.

## Aerocon Mezzanine floors :

Mezzanine floors are individually designed to suit client's specific requirements. Installation is quick with minimal disruption to ongoing business. Even in high rise bays and multi-tier floors, Aerocon mezzanine flooring can also be designed and fitted very rapidly. Where ever necessary, suitable fire- protection may be applied to the mezzanine floor. We will be too glad to advise you accordingly.

We also provide you our recommended loading procedure chart for proper selection of Aerocon Panel thickness / support structure details depending on loading pattern and some suggested steel section details.

