



# Low Density Aggregate(LDA)

*.....The New Age Stone Chips*  
**GRIHA Summit 2016**

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# Fly Ash Utilization @ IMFA



We are the **FIRST** to install **Low Density Aggregate (LDA)** or '**Sintered Fly Ash Aggregate**' plant in India at Choudwar, Odisha. We have an installed annual capacity of 1.75 lakh MT.



**Fly Ash Brick (FAB)** plant with an installed capacity of 1 lakh bricks per day..



# LDA Pellets – New Age Stone Chips



- LDA falls under generic 'Light Weight Aggregate' (LWA).
- Process uses **90%** Fly ash, Coal & Binder to make pellets & no cement
- Pellets are sintered up to **1300 deg C** to make LDA
- Aggregate sizes : **2- 4 mm, 4-8 mm & 8-16 mm**
- Replace stone chips in **Concrete**
- An Eco friendly product

Video



# LDA Vs Stone Chips & Concrete



Properties	LDA	Natural Aggregate
Bulk Density	750 – 900 kg/cum	1450-1750kg/cum
Water Absorption	12 to 16%	0.5 to 1.5%
Specific Gravity	1.45 to 1.65	2.50 to 2.95
Loss on Ignition (LOI)	< 4%	<4%
Shape	Round	Angular



Properties	LDA	Natural Aggregate
Weight of Concrete	1800-1900 kg/cum	2400-2750 kg/cum
Compactness of Concrete	High	Moderate
Pre Saturation	Required	Preferred

# LDA- Construction Benefits



- Lower dead weight of the concrete structure : Approx 20-25%
- Reduction in steel reinforcement due to reduced dead weight
- Low shrinkage/reduced micro cracks
- Improves concrete cohesiveness
- Thermal insulation is higher than ordinary concrete.
- Pump able to higher heights



# LDA - Environmental Benefits

- Bulk utilization of Fly Ash
- Prevent quarrying of hills/mountains , conserving natural resources.
- No pollutant/effluent discharge from LDA plant

# Standards - LWA/LDA- IS 9142 Revision



- ASTM : C330-99 – LWA for structural concrete
- EU : BS EN 13055-1,2 – LWA Concrete
- IS 9142:1979 – Proposed for revision for ‘**Sintered fly ash aggregate**’ for structural concrete



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## AGENDA

Our Ref: CED 2/P3/A-2.3

09 June 2015

Subject: Agenda of Fourth Meeting of the Panel for Aggregates  
from other than Natural Sources, CED 2/P3

The draft revision of IS 9142 is awaited from NCB. NCB has however taken up studies on sintered fly ash aggregates and have agreed to share their findings during the meeting. Further, certain inputs had been received from Shri Bishwaraj Mohantray, IMFA. The same was forwarded to NCB and other members/invitees of this Panel. IMFA is also associating with NCB and NTPC to prepare the draft revision of IS 9142.

Any inputs/draft revision, if received prior to the meeting, would be circulated/tailed for discussion in the meeting .

The Panel may please **DISCUSS** and suggest actions to **EXPEDITE** the project.



# Application of LDA

## *In House:*

- Road, Culvert, ETP
- Housing project

## *World Wide applications*

- Bridges
- Structures
- Arrestor bed
- Prefab
- Tiles
- Precast
- Screed
- Structural fill



Video

# Policy Supports for Sustainability

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- *Excise duty exemption – As cost of production is higher than that of natural aggregate, excise duty is an additional burden and a discouraging factor*

Please join us to build a



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