ECA

Expanded Clay Aggregate

A REVOLUTIONARY GREEN PRODUCT THAT WILL CHANGE THE LANDSCAPE OF THE LANDSCAPING INDUSTRY.

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THERE'S HOPE

ECA
GREEN

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Benefits of ECA

100 % Inert:

ECA is made from mining clay and also have a ceramic property. It will not compress, nor decompose, nor react with agricultural or horticultural chemicals.

Reusable multiple times.

Light in Weight (< 400 Kgs/CBM):

Good for terrace gardening, where weight is an important aspect for a building.

Reduction of 40-50% of load.

Micro Porous Structure:

Provides proper amount of oxygenation for growth of roots.

Aids Better aeration.

Good Water Absorption:

18 to 23% water absorption which is excellent for water retention.

Conserves Water.

Good Water Drainage:

It drains excess water.

Prevent roots from rotting.

Surface Alkalinity:

Has neutral Ph value.

Safe even for sensitive plants.

Excellent Thermal Insulation:

Its porous cellular structure provides excellent thermal insulation. Therefore it works best for top dressing layer for plants as well as for the roof gardening.

Less water evaporation.

Insect-Proof:

Expanded Clay Aggregate (ECA) is termite-proof, Blocks Algae and Fungus, keeps mosquitoes and gnats away.

Prevents Dengue and Malaria.

Low Co-efficient of Thermal Expansion:

This characteristic also helps prevent soil cracking and crushing.

Aids healthy plantation.

Non-Toxic & Eco- Friendly:

Being **100% Natural** product, it is odorless and contains no toxic elements.

It is 100% Eco-Friendly and Sustainable.

Expanded clay aggregate (ECA), a round pellet structure produced by firing natural clay at temperature 1200°C. The result is hard, honeycomb structure of inter connecting voids within the aggregate. The particle formed are round in shape and generally range in size from 0-30 mm. Depending upon the final application, grading of ECA is required. **Expanded clay aggregate (ECA)** is extremely light weight, strong and thermally insulating material. **Expanded Clay Aggregate (ECA)** is a better replacement for cocopeat and conventional soil.

1st time in India

Expanded Clay Aggregate (ECA)

Landscape Application

Expanded Clay Aggregate (ECA) is the right product for creating lightened draining layers for landscaping. The applications are as follows:

- Lawns
- Flower Beds
- Planters
- Flower Pots, Plants & Trees
- Top Dressing & Mulch Patio
- Vertical, Terrace & Hanging Gardens

The porous, cellular nature of **Expanded Clay Aggregate (ECA)** helps manage air, water and solid particulate matter, it reduces compaction, increases the soil porosity and maintains the soil temperature.

The gaps between the pellets provide good aeration for root systems.

Expanded Clay Aggregate (ECA), limits excessive water retention and enhances drainage, which is an essential factor for the proper growth of roots and plants.

Expanded Clay Aggregate (ECA) does not release any salinity and does not change the Ph factor of the mixture.

Expanded Clay Aggregate (ECA) does not change or decompose in time or due to humidity, it is even spread as top dressing on the pots/vases for aesthetics and dust prevention.

New Lawn Construction

Heavy Clay Soils ?

Soils that consist of tiny plate-like natural clay particles compact easily and lack pore spaces for air, water and humus. Natural Clay particles hold moisture and further reduce the amount of available breathing air pore space which leads to difficulty for new lawn construction.
Solution being the application of new Expanded clay aggregate (ECA) soil technology. ECA growing media will help in fastest development of Grass Lawn. This also facilitates the deep penetration of roots.

Sport Field Play Ground

Improperly developed soils and compacted turfs in highly used areas in sports fields creates problems. Expanded clay aggregate (ECA) materials can be incorporated into the soils to improve agronomic conditions with added air/pore space at the root zone and less compaction. **Expanded clay aggregate (ECA)** has ability to facilitate drainage while providing beneficial moisture to plant roots.

Filling Technique

Top Layer

20 % of total volume, to be topped up with **Expanded clay aggregate (ECA) 8-15mm** on the top of the plants as a **dressing layer (Thermal Insulation Layer)**

Middle Layer

60 % of total volume, Mixed with equal portion of **Expanded clay aggregate (ECA) 2-8mm + Normal Soil + Compost.** Plantation will be done in this root zone layer.

Bottom Layer

20 % of total volume, Fill up with **Expanded clay aggregate (ECA) 8-15mm** as a **drainage layer.**

Turf Application Technique

Prepare 3” inch layer of **ECA (2-8mm)** on Ground

Mix the Normal soil & Manure in equal ratio

Spread 1” inch layer of this mixture (Soil & Manure) on first layer of ECA and Blend it.

Light watering on entire bed

On Top Layer of bed directly apply carpet Grass lawn Or Cultivate the seeds of Grass Lawn.

Intensive Roof Terrace Gardening

- Intensive systems are deeper in soil depth (typically 6" to 12" and greater) and are capable of sustaining heavier rooted plants.
- Aesthetically pleasing and best resembles a normal garden bed.
- Fully landscaped roof top garden.
- Diverse plants and trees can be planted

Also applicable for: Big plants, Terrace Lawn, Big Flower Planter, Flower Beds, Big pots, patios and the like.

Extensive Roof Terrace Gardening

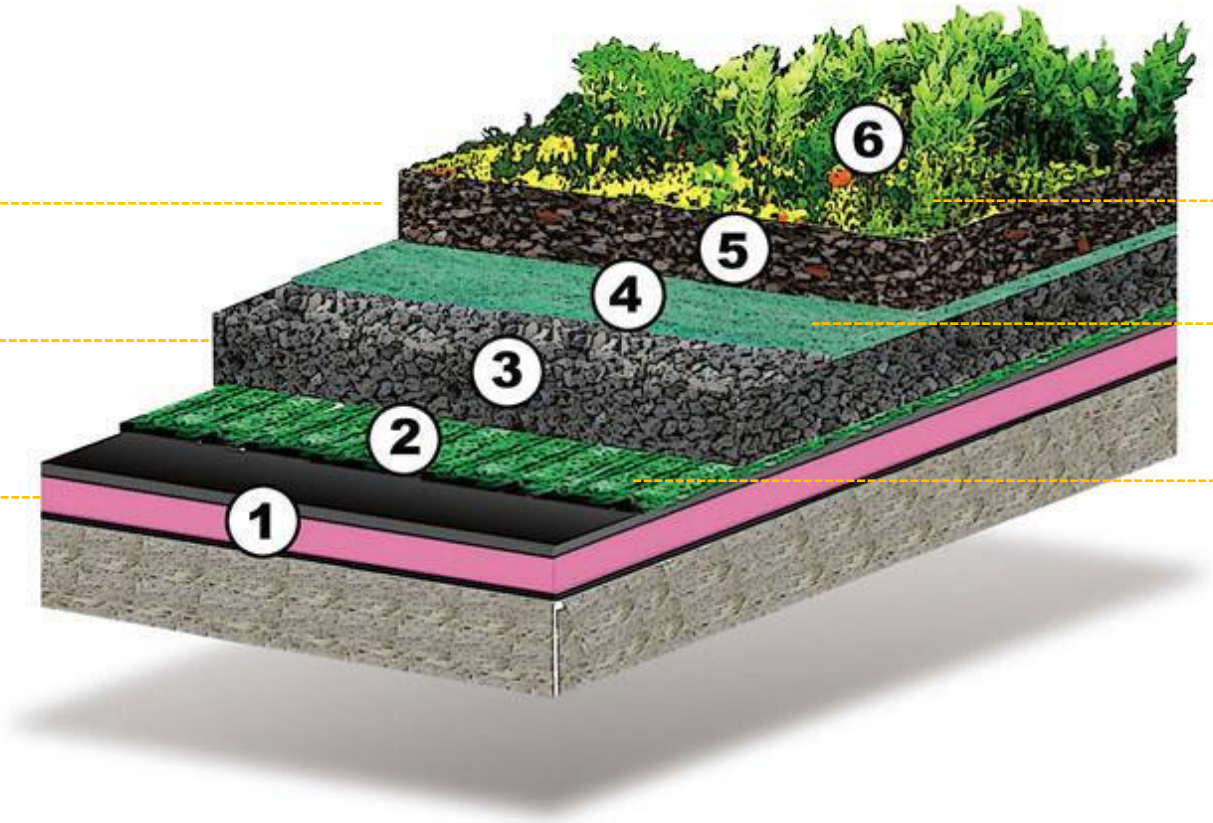
- Extensive systems are shallow in soil depth (less than 6"), and are not capable of supporting larger plants, but tend to be easier to maintain.
- Ideal for large flat-roofs, low-sloped residential roofs and retrofits. ECA is widely used in roof-terrace gardening.
- It reduces 40-50% of weight of soil.

Also applicable for: Terrace Lawn, Small Flower Plants, Flower Beds and similar…

Layer of **ECA (2-8mm) with Soil + Compost** as a Growing mediums

2” ECA Filter Media **(8-15mm) as drainage layer** 3

Suitable waterproofing layer OR Membrane on Concrete slab.



Plants, etc..

Non-woven filter cloth as root permeable layer.4

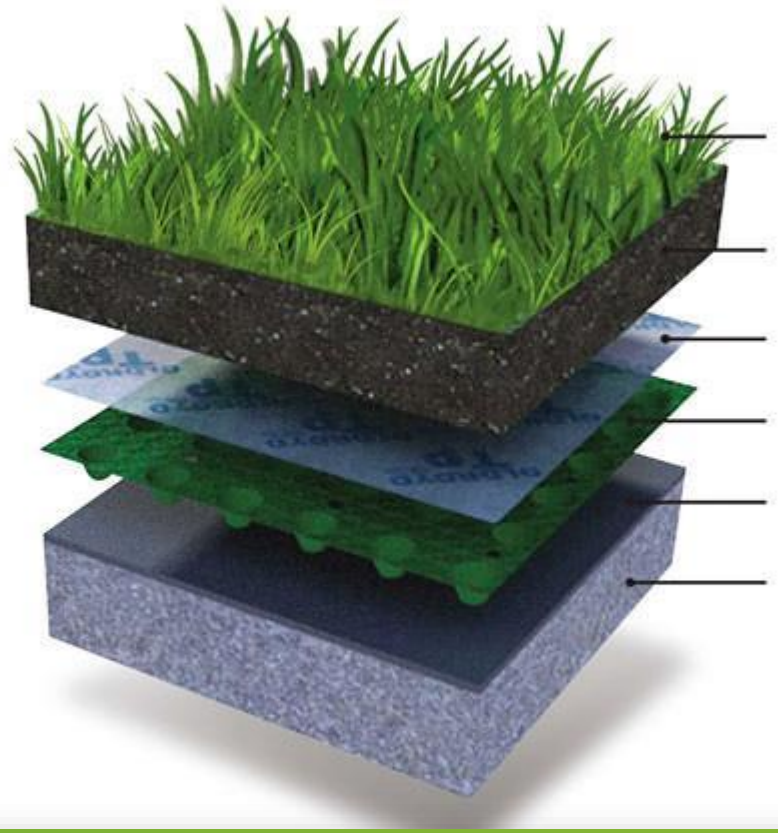
1“ PVC Drainage Sheet layer2

Filling Technique

Same as described for Landscape Application

General Application Technique

- Apply water proofing solution on the concrete slab surface first.
- 1” PVC Drainage mat laying or alternatives.
- 2” ECA (8-15mm) Layer as filter Media/drain.
- 150 GSM Non-woven Filter cloth as root permeable layer.
- Prepare the ECA mixture bed as per the Plant size requirement.(ECA 2-8mm+Soil+Compost)
- Plantation will be done on this growing bed of ECA, along with light watering.



Roof Terrace Garden Application Technique

1. Apply water proofing solution on the concrete slab surface first.
2. 1” PVC Drainage mat laying OR 2” ECA (8-15mm) Layer for better drainage of water.
3. Filter Cloth , 150 GSM Non Woven layer for roots.
4. Prepare the mixture of ECA (2-8mm) + Normal Soil + Organic Manure in equal proportion.
5. Again prepare the bed of 3 “ to 4 “ height of ECA mixture on the Filter Cloth. (Height depends upon the selection of plant)
6. Plantation will be done on this growing bed of ECA , along with light watering.

Urban Trees

Trees are great for the urban environment, it increases the human value. **Expanded clay aggregate (ECA)** and a selected soil are blended to produce a structured soil for urban trees. The structured soil mix promotes the establishment of expanding root system, makes available more air, pore space and a lush green development.

Filling Technique

Top Layer

20 % of total volume, fill up with ECA (8-15mm) on the top as a **dressing layer/ thermal insulation layer**.

Middle Layer

60 % of total volume, Mix with equal portion of **ECA (2-8mm) + Normal Soil + Manure**. Plantation will be done in this **root zone layer.**

BOTTOM LAYER

20 % of total volume, Fill up with **ECA (8-15mm)** as **drainage layer..**

Agriculture

Generally, agriculture is done by two methods:
Conventional method: where natural soil is been used**.**
Modern method: where **Expanded clay aggregate (ECA)** is used either with soil or individually. Modern method in agriculture, which includes:

Hydroponics / Hydro culture

Horticulture / Plants In Greenhouse Containers

Vertical / Wall Garden

Hydroponics / Hydro Culture

Expanded clay aggregate (ECA) is used as a direct replacement for soil, mainly in hydroculture and hydroponic systems.

- Hydroponic cultivation with ECA is what is called a closed system.
- ECA has a neutral Ph, and is not compactable and is reusable, making the product highly recommended and good for the environment.
- ECA allows the system to be stable in form and structure, while allowing excess liquid to be absorbed.
- Another great advantage of ECA expanded clay in this system, is that it is very light and easy to manage.

Horticulture / Plants In Greenhouse Containers

Mixtures of ECA (2-8mm) +Soil + Organic Manure in equal portion, has been used to improve the soil structure of nurseries.

- It improves the physical characteristics of these classic substrates for cutting production, for the growth of hothouse plants, flower borders, etc.
- Increase air space for healthier root development.
- Reduce watering cycle and compaction of soil and Increase soil porosity.
- Reduce of soil weight of the container, useful when transporting plants from container to customer's garden.
- Ultimately, labor cost will be reduced, through more efficient development of the plant.

Vertical / Wall Garden / Green Wall

Vertical gardening is green revolution in urban life style. We provide complete solution with ECA.

- Mixtures of **ECA (2-8mm) +Soil + Organic Manure** in appropriate portions has been used to improve the soil structure of nurseries.
- Reduced Watering cycle.
- Very low mortality of plant.
- Resulting to low or No maintenance.

Technical Specifications

Expanded Clay Aggregate (ECA)

Particle Size	Bulk Density	Cylinder Compressive Strength	Dry Thermal Conductivity	Surface Alkalinity	Water Absorption
0-2 mm 2-8 mm (Crushed) 2-8 mm 8-15 mm 15-30 mm	300 to 750Kg /m3	0.9 to 3.0 N/mm2	0.09 to 0.11 W/mK	Neutral pH	18 to 23 % (depending on its size)

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