Artificial Sand - A Viable Alternative

An Alternate to River Sand in Concrete and Construction Industry

Manufacturing Plant, Detailed Project Report, Profile, Business Plan, Industry Trends, Market Research, Survey, Manufacturing Process, Machinery, Raw Materials, Feasibility Study, Investment Opportunities, Cost and Revenue, Plant Economics, Production Schedule, Working Capital Requirement, Plant Layout, Process Flow Sheet, Cost of Project, Projected Balance Sheets, Profitability Ratios, Break Even Analysis

Introduction

The artificial sand produced by proper machines can be a better substitute to river sand. The sand should be sharp, clean and course. The grains should be of durable material. The grain sizes must be such that it should give minimum voids. The presence of clay and silt retards the setting of the cement and makes the mortar weaker and the walls or the slab leaks and holds dampness.

The sand in the mortar does not add any strength but it is used as an adulterant for economy and with the same it prevents the shrinkage and cracking of mortar in setting. The sand must be of proper gradation (it should have particles from 150 microns to 4.75 mm in proper proportion) When fine particles are in proper proportion, the sand will have less voids. The cement required will be less when there will be less void in sand. Such sand will be more economical.

Manufactured or Artificial Sand V/s Natural or River sand

- The Civil engineers, Architects, Builders, and Contractors agree that the river sand, which is available today, is deficient in many respect. It does content very high silt fine particles (as in case of Filter sand).

- Presence of other impurities such as coal, bones, shells, mica and silt etc makes it inferior for the use in cement concrete. The decay of these materials, due to weathering effect, shortens the life of the concrete.

- **Now-a-days, the Government have put ban on lifting sand from River bed.**
- **Transportation of sand damages the roads.**
- **Removing sand from river bed impact the environment, as water table goes deeper & ultimately dry.**

General Requirements of Manufactured Sand/Artificial Sand

- All the sand particles should have higher crushing strength.
- The surface texture of the particles should be smooth.
- The edges of the particles should be grounded.
- The ratio of fines below 600 microns in sand should not be less than 30%.
- There should not be any organic impurities
- Silt in sand should not be more than 2%, for crushed sand.
- In manufactured sand the permissible limit of fines below 75 microns shall not exceed 15%.

Sand is a naturally occurring granular material composed of finely divided rock and mineral particles. The composition of sand is highly variable, depending on the local rock sources and conditions, but the most common constituent of sand in inland continental settings and non tropical coastal settings is silica (silicon dioxide, or SiO_2), usually in the form of quartz. Sand is generally mixed with cement and water form concrete. These sand particles should be hard and inert with respect to cement. In the construction industry commonly used artificial sand to compound concrete.

Use of artificial sand concrete density, anti permeability, antifreeze performance is good, other physical and mechanical performance and long term durability all can reach the design requirements of operation. Artificial sand preparation is especially suitable for high strength grade of concrete, the high performance concrete and pumping concrete.

Applications

Sand has its applications in various fields. In agriculture sandy soils are ideal for crops such as watermelons, peaches, and peanuts and their excellent drainage characteristics make them suitable for intensive dairy farming. In aquaria it makes a low cost aquarium base material which some believe is better than gravel for home use. Manufacturing plants add sand to a mixture of clay and other materials for manufacturing bricks. Coarse sand makes up as much as 75% of cob. Sand is mixed with cement and sometimes lime to be used in masonry construction.

Sand is often a principal component of this critical construction material. Sand is the principal component in common glass. Mixing sand with paint produces a textured finish for walls and ceilings or non slip floor surfaces. Sand is also used as sand bags, these protect against floods and gunfire. Media filters use sand for filtering water.

Global demand

Due to the increase of population & living standards, the demand for this product is multiplying in every year. Present supply of production is meeting only about 20% of the demand if all the crusher units of the state start manufacturing machine made sand as an additional venture then also it could meet only about 50- 60% of the requirement. At present the existing sand manufacturers are producing sand like materials form granite stone and people are facing difficulties while plastering work.

The demand of river sand will roll and will bring back the smiles on the faces of both the environmentalists and the industries. Because there is abundant of natural sand because of the heavy demand in the growing construction activities in nowadays society, the artificial sand production line the sand produce field has a popular and a welcome position.

The demand of sand in the market is immense and therefore its market position is splendid. Hence it is an excellent field to venture.

Reasons for buying the report:

- This report helps you to identify a profitable project for investing or diversifying into by throwing light to crucial areas like industry size, market potential of the product and reasons for investing in the product
- This report provides vital information on the product like it's characteristics and segmentation
- This report helps you market and place the product correctly by identifying the target customer group of the product

- **This report helps you understand the viability of the project by disclosing details like machinery required, project costs and snapshot of other project financials**
- **The report provides a glimpse of government regulations applicable on the industry**
- **The report provides forecasts of key parameters which helps to anticipate the industry performance and make sound business decisions**

Our Approach:

- Our research reports broadly cover Indian markets, present analysis, outlook and forecast for a period of five years.
- The market forecasts are developed on the basis of secondary research and are cross-validated through interactions with the industry players
- We use reliable sources of information and databases. And information from such sources is processed by us and included in the report

Scope of the Report

The report titled "Market Survey cum Detailed Techno Economic Feasibility Report on Artificial Sand from Stones and Waste Metals" provides an insight into the Artificial Sand from Stones and Waste Metals market in India with focus on uses and applications, Manufacturing Process, Process Flow Sheets, Plant Layout of Artificial Sand project. The report assesses the market sizing and growth of the Indian Artificial Sand Industry. While expanding a current business or while venturing into new business, entrepreneurs are often faced with the dilemma of zeroing in on a suitable product/line. And before diversifying/venturing into any product, they wish to study the following aspects of the identified product:

- **Good Present/Future Demand**
- **Export-Import Market Potential**
- **Raw Material & Manpower Availability**
- **Project Costs and Payback Period**

We at NPCS, through our reliable expertise in the project consultancy and market research field, have demystified the situation by putting forward the emerging business opportunity in the Artificial Sand sector in India along with its business prospects. Through this report we have identified Artificial Sand project as a lucrative investment avenue.

PROJECT AT A GLANCE

Capacity:	720000MT/Annum
Plant and Machinery:	595 Lakhs
Cost of the project:	1066 Lakhs
Rate of return:	44%
BEP:	51%

Major Queries/Questions Answered in the Report?

1. What is Artificial Sand industry ?
2. How has the Artificial Sand industry performed so far and how will it perform in the coming years ?
3. What is the Project Feasibility of a Artificial Sand Plant ?
4. What are the requirements of Working Capital for setting up a Artificial Sand plant ?

5. What is the structure of the Artificial Sand Business and who are the key/major players ?

6. What is the total project cost for setting up Artificial Sand plant ?

7. What are the operating costs for setting up a Artificial Sand plant ?

8. What are the machinery and equipment requirements for setting up a Artificial Sand plant ?

9. Who are the Suppliers and Manufacturers of Plant & Machinery for setting up a Artificial Sand plant ?

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can provide Detailed Project Report on

Artificial Sand from Stones and Waste Metals

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NIIR PROJECT CONSULTANCY SERVICES

An ISO 9001:2008 Company

Who are we?

- *One of the leading reliable names in industrial world for providing the most comprehensive technical consulting services*

- *We adopt a systematic approach to provide the strong fundamental support needed for the effective delivery of services to our Clients' in India & abroad*

What do we offer?

- *Project Identification*
- *Detailed Project Reports/Pre-feasibility Reports*
- *Market Research Reports*
- *Technology Books and Directory*
- *Databases on CD-ROM*
- *Laboratory Testing Services*
- *Turnkey Project Consultancy/Solutions*
- *Entrepreneur India (An Industrial Monthly Journal)*

How are we different ?

- *We have two decades long experience in project consultancy and market research field*
- *We empower our customers with the prerequisite know-how to take sound business decisions*
- *We help catalyze business growth by providing distinctive and profound market analysis*
- *We serve a wide array of customers , from individual entrepreneurs to Corporations and Foreign Investors*
- *We use authentic & reliable sources to ensure business precision*

Our Approach

Requirement collection

Thorough analysis of the project

Economic feasibility study of the Project

Market potential survey/research

Report Compilation

Who do we serve?

- *Public-sector Companies*
- *Corporates*
- *Government Undertakings*
- *Individual Entrepreneurs*
- *NRI's*
- *Foreign Investors*
- *Non-profit Organizations, NBFC's*
- *Educational Institutions*
- *Embassies & Consulates*
- *Consultancies*
- *Industry / trade associations*

Sectors We Cover

- *Ayurvedic And Herbal Medicines, Herbal Cosmetics*
- *Alcoholic And Non Alcoholic Beverages, Drinks*
- *Adhesives, Industrial Adhesive, Sealants, Glues, Gum & Resin*
- *Activated Carbon & Activated Charcoal*
- *Aluminium And Aluminium Extrusion Profiles & Sections,*
- *Bio-fertilizers And Biotechnology*
- *Breakfast Snacks And Cereal Food*
- *Bicycle Tyres & Tubes, Bicycle Parts, Bicycle Assembling*

Sectors We Cover *Cont...*

- *Bamboo And Cane Based Projects*
- *Building Materials And Construction Projects*
- *Biodegradable & Bioplastic Based Projects*
- *Chemicals (Organic And Inorganic)*
- *Confectionery, Bakery/Baking And Other Food*
- *Cereal Processing*
- *Coconut And Coconut Based Products*
- *Cold Storage For Fruits & Vegetables*
- *Coal & Coal Byproduct*

Sectors We Cover *Cont...*

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- *Dairy/Milk Processing*
- *Disinfectants, Pesticides, Insecticides, Mosquito Repellents,*
- *Electrical, Electronic And Computer based Projects*
- *Essential Oils, Oils & Fats And Allied*
- *Engineering Goods*
- *Fibre Glass & Float Glass*
- *Fast Moving Consumer Goods*
- *Food, Bakery, Agro Processing*

Sectors We Cover *Cont...*

- *Fruits & Vegetables Processing*
- *Ferro Alloys Based Projects*
- *Fertilizers & Biofertilizers*
- *Ginger & Ginger Based Projects*
- *Herbs And Medicinal Cultivation And Jatropha (Biofuel)*
- *Hotel & Hospitability Projects*
- *Hospital Based Projects*
- *Herbal Based Projects*
- *Inks, Stationery And Export Industries*

Sectors We Cover *Cont...*

- *Infrastructure Projects*
- *Jute & Jute Based Products*
- *Leather And Leather Based Projects*
- *Leisure & Entertainment Based Projects*
- *Livestock Farming Of Birds & Animals*
- *Minerals And Minerals*
- *Maize Processing(Wet Milling) & Maize Based Projects*
- *Medical Plastics, Disposables Plastic Syringe, Blood Bags*
- *Organic Farming, Neem Products Etc.*

Sectors We Cover *Cont...*

- *Paints, Pigments, Varnish & Lacquer*
- *Paper And Paper Board, Paper Recycling Projects*
- *Printing Inks*
- *Packaging Based Projects*
- *Perfumes, Cosmetics And Flavours*
- *Power Generation Based Projects & Renewable Energy Based Projects*
- *Pharmaceuticals And Drugs*
- *Plantations, Farming And Cultivations*
- *Plastic Film, Plastic Waste And Plastic Compounds*
- *Plastic, PVC, PET, HDPE, LDPE Etc.*

Sectors We Cover *Cont...*

- *Potato And Potato Based Projects*
- *Printing And Packaging*
- *Real Estate, Leisure And Hospitality*
- *Rubber And Rubber Products*
- *Soaps And Detergents*
- *Stationary Products*
- *Spices And Snacks Food*
- *Steel & Steel Products*
- *Textile Auxiliary And Chemicals*

Sectors We Cover *Cont...*

- *Township & Residential Complex*
- *Textiles And Readymade Garments*
- *Waste Management & Recycling*
- *Wood & Wood Products*
- *Water Industry(Packaged Drinking Water & Mineral Water)*
- *Wire & Cable*

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