

The New Identity to Sand

Ultra
MOD
Sand
ENGINEERED SAND

TM



MAAD

Mines & Minerals
Private Limited

 **Rated**

Concrete is a versatile global construction material used in the past and likely to be used in the future without any alternate construction material in the foreseeable future. Thousands of year back natural stone was the construction material. Today concrete an artificial stone, made out of natural stone is a construction material. The natural stones bonded together by cement and water (Cement Paste) makes the artificial stone. Course aggregate and fine aggregate are stronger and durable, but the paste which binds the aggregates to make it an artificial stone is weaker and non-durable. Therefore to make strong artificial stone, our attempt should be to pack in maximum volume of stronger and durable natural stone and minimum amount of cement paste. That has been the philosophy of mix- design for number of years in the past.

Good grading of all- in-aggregate has been the centre of issue in making good concrete. All along in India, we have been using naturally available FA (Sand) from river and stream beds, or from pit. For the limited quantities of concrete or mortar produced in our country in the past, the quantities of natural sand were found to be sufficient. But now the scenario has dramatically changed in the recent year on account of tremendous infrastructural development taking place in our country. There is a quantum jump in the production of concrete and mortar. As far as the CA is concerned, there are no serious problems. But as far as the sand is concerned, there has been a very serious problem, as it was supplied from natural and limited sources.

Its time to change..... **UltraMod Sand.**





MAAD Mines & Minerals Pvt. Ltd. Sister organization of MAAD Realtors & Infra Ltd. Identified the best alternative to natural sand which maintains the ecological balance. MAAD Mines & Minerals is well known for its supply of better quality and environment friendly water separated sand by the name of ULTRAMOD SAND – Engineered Sand.

MAAD is Group ;

- of young, dynamic and enthusiastic engineers and has achieved a commendable success in a short span,
- known for maintaining construction standards, innovations and also for its ethics, transparency, reliability and professionalism.
- not merely just an organization but it is a symbol of harmony, a revolution that promises to enrich lives.
- professionally managed by a team of qualified and dedicated professionals who have experience and expertise in the area of architecture and design, project planning and implementation, legal matters and marketing.



Concrete sand

Case Study Made under the guidance of Prof. M. S. Shetty-Renowed Concrete Technologist
Optimization Achieved with ULTRAMOD SAND - CONCRETE as compared to all other Fine Aggregate

Material	ID Mark	Abv.	28 day Compressive Strength (MPa)				
			300kg/ cum (225+75)	350kg/ cum (260+90)	400kg/ cum (300+100)	450kg/ cum (338+112)	500Kg cum (375+125)
VSI Sand.	A	VSI	29.54	36.06	43.59	46.62	47.75
Grit without VSI	B	CRF	26.58	31.96	32.98	43.59	46.95
UltraMod Plaster Sand	D	UMP	31.85	45.43	58	62.88	62.13
Natural Sand (Dredging Sand)	E	NS	24.8	34.68	36.31	48.13	50.88
UltraMod Concrete Sand	H	UMC	38.85	43.11	50.47	52.49	57.59

Unique features of UltraMod Sand Concrete

- 150µ content limited to 12% and 75µ below 3-6% by weight.
- Delivered in SSD condition resulting no additional correction for water absorption.
- Free water content at par with best available natural sand.
- Tested for high performance concrete (HPC) and self compacting concrete (SCC).
- Consistent gradation

PROCESS OF ENGINEERED SAND:

The manufactured sand slurry is delivered at one part of dewatering screen of the *Evowash* System to take out coarser particles from the feed. The dewatering screen underflow goes to the sump of *Evowash* and then pumped to the Hydrocyclone of *Evowash*, where below 75microns particles taken out of the circuit as overflow of the cyclone. The underflow of the cyclone is dewatered at 2nd part of dewatering screen integrated with the *Evowash* System. The dewatering screen ensures low moisture in the fine sand segregate product in to plaster sand and Concrete sand which we called as engineered sand, and is stockpiled using a product conveyor. Plaster sand and Concrete sand has a provision for bagging it in to 50 kg bags for selling it in market.

Plaster sand

Plaster Sand Comparative with other Plaster Items

Comparative Parameters	Natural Sand	Silpoz Sand	UltraMod Sand	Ready MadePlaster
Cost of Mortar	Rs 2.8-2.9/kg	Rs 2.9-3.1/kg	Rs 2.5-2.6 /kg	Rs 4-5/kg
Consistency of Supply	Inconsistent	Consistent	Consistent	Consistent
Wastage	More then 10%	3%	3%	2%
Rebound	High Rebound	Less rebound	Less rebound	Less rebound
Finishing Quality	Satisfactory	Satisfactory	Satisfactory	In line and Level
Pull out Test	Early	Later then Natural sand	Later then Natural sand	Later then Natural sand

Physical Properties of UltraMod Plaster Sand

Physical Parameters	Properties
Oversize 4.75mm % Passing particles	100% passing
2.36mm sieve % Passing particles	95%-100% passing
Dust content 150µ % Passing particles	8-11% passing
Silt content 75µ % Passing Particles	3-6% passing
Specific Gravity	2.7 and above
Fineness Modulus	2.4-2.6
Bulk Density	1700-1750 kg/cum

Unique features of UltraMod Sand - Plaster

- Shape comparable to natural sand.
- 1:5 instead of 1:4 resulted in less cement consumption.
- No oversize particles
- Rich cement mortar upto 35 MPa can be achieved.
- Delivered in SSD condition resulting no additional correction for water absorption.
- Consistant below 3mm gradation.

PrePlast

Cost Comparative with others

Parameter	UltraMod PrePlast	Natural Sand	Ready Mix
Cost	₹ 125/Bag of 50kg.	₹ 90/Bag of 40kg.	₹ 200/Bag of 40kg.
Application	1 Cement : 8 Ultra MOD Sand	1 Cement : 4 Bags Sand	Direct
Cement	300	300	None
Total Material Cost	₹ 1300/-	₹ 660/-	₹ 200/-
Extra Cost	None	Wastage & Handling	High Storage cost
Coverage (Sqft)	144	58.8	12.8
Cost Per Square Feet	Rs. 9.02	Rs. 11.22	Rs. 15.62



Unique features of UltraMod Sand - PrePlast

- Available in 50KG bag, easy to store, easy to handle (Almost 0% wastage)
- Added with glass fibre for better performance.
- Around 25% saving with nearest replacement i.e. natural sand.



Asia's largest Sandvik make sand making plant

Comparison of Natural Sand v/s UltraMod Sand

Sr No.	Properties	Significance or Importance	Natural Sand	UltraMod Sand
1	Cleanliness	It affects the concrete by way of reduction of strength, shrinkage, soundness, permeability, durability and resistance to corrosion.	Natural sand being dredged from river stream bed pits contains objectional quantities of mud, clay, silt, decayed organic matters, chlorides and sulphates. They are rarely clean.	Engineered Sand, being derived from selected Rock mass, is free from any of the impurities mentioned under natural sand and as such it is clean sand for making.
2	Grading	Good grading is the most important property of sand and aggregate for pumping qualities of concrete.	Natural sand often is not well graded. Some particles Size are always missing or are in excess.	Engineered Sand can be produced to any desired grading. Consistent grading can be maintained, as per original mix design.
3	Shape	Shape of aggregate influences grading. Shape also influences voids, water demand and workability. Shape becomes an important factor for high strength concrete.	In respect of shape natural sand has positive point. Particles are either cubical or rounded rarely flaky.	Engineered Sand produced by VSI crusher using Rock-on-Rock technology, yields rounded shape, suitable for making good concrete. It has been investigated that the uncompacted void content was less than natural sand.
4	Texture	Smooth texture reduces the water demand Gives the workability but reduces the bond strength.	Particles being smooth will extend some good properties for concrete making. But too smooth surface of natural sand reduces the bond strength.	Particles of Engineered Sand are not very smooth. Although they are not as good as natural sand for extending some of the desirable properties, the surface being rough enough to give good bond strength which influences the tensile strength.
5	Presence of very fine particles	Presence of very fine particles in small percentage influence workability, water demand and element demand	In natural sand very fine particles lower than 75 microns are not permitted. If at all present, they are in form of mud and clay.	In the Engineered Sand particles smaller than 150 & 75 microns are always present. It has been proved that up to 11% in 150 micron & up to 6% in minus 75 microns particles resulted in reduced water demand cement demand and at the same time improve workability.
6	Uncompacted void content in all-in-aggregate	Minimum void content in all-in-aggregate is an important parameter for good concrete.	It has been found by experiments that uncompacted voids in all-in-aggregate in natural sand to be 36%.	In the same series of experiment uncompacted voids in all-in-aggregate of Engineered Sand produced by Rock-on-Rock technology was 34%.



	UNI PAVER		BEHATON PAVER		HOLLAND PAVER	
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	UNI PAVER		BEHATON PAVER		HOLLAND PAVER	
Length(mm)	225	225	193	193	200	200
Width (mm)	112	112	163	163	100	100
Thickness (mm)	80	60	80	60	80	60
Block Weight (kg)	4.3	3.3	5.5	4.3	3.5	3
Strength(n/mm ²)	50	40	50	40	50	40
Water Absorption	Not more than 7%					
Tolerances	L/W +/-2mm, H: +/- 3mm, chambers:+/- 0.5mm					

Advantages:

- Due to high strength, practically no breakage during transport and use.
- Due to uniform size of bricks mortar required for joints and plaster reduces almost by 50%.
- Due to lower water penetration seepage of water through bricks is considerably reduced.
- Easily repairable and less maintenance.
- These pavers do not require soaking in water for 24 hours. Sprinkling of water before use is enough.

Maad Mines Bricks factory

We manufacture with State-of-the Art 'HESS' German concrete technology, PLC based plants with fully automatic Block, Paver, Brick and Batching plant. Our blocks confirm to IS standard. Our blocks are manufactured with best quality raw materials like 53 grade OPC, Fly Ash, Cement additives, Aggregates etc.

Superior construction was the need of the hour when Maad Group began its operations in the country. Introducing high quality construction to the Indian real estate industry, the organization began setting new industry benchmarks. Our brick and block plant is a continuation of the Maad Group's journey of excellence. Set up in Kanchad Wada Industrial Area, Thane, with the same philosophy, vision and business ethos. We manufacture Concrete Blocks, Pavers, Kerbstones, Paving Slabs and related landscape products of international quality in large scale volumes. Its hi-tech, full-fledged manufacturing facility, spread over 10 acres, contains fully automated plant that produces world-class products of the highest quality. This unit has also taken massive steps towards a sustainable future.



	8" Hollow Block	6" Hollow Block	4" Hollow Block	8" Solid Block	6" Solid Block	4" Solid Block	Flyash Brick	
Lenght (mm)	400	400	400	400	400	400	230	
Width (mm)	200	150	100	200	150	100	150	
Thickness (mm)	200	200	200	200	200	200	100	
Block Weight (kg)	21	16	13	36	26	16	3.75	
Density (kg/cum)	1800	1600	1450	2250	2250	2083	1800	
Strength(n/mm ²)	5	5	5	8	8	8	7	
Moisture movement	0.09 (Max)			0.09 (Max)				
Drying Shrinkage	0.10% (Max)			0.10% (Max)				
Water absorption	10% (Max)			10% (Max)				
Tolerance	L:+/- 5 mm, H/W: +/-3 mm			L:+/- 5 mm, H/W: +/-3 mm				

Some of the unique advantages of our Products

- The concrete products have very high compressive, flexural and tensile strengths.
- They are designed for high dimensional accuracy which reduces the plaster required.
- They provide excellent sound and thermal insulation making them ideal for a variety of applications.
- They are ready to use and easy to install concrete pavers, thus, saving time and effort.
- They have high resistance to weather and corrosive elements and sustain for a longer period of time.
- They are designed not just for functionality but also add to the aesthetic value.
- Easy replacement of pavers is possible.
- Less maintenance with best quality.
- Having a capacity to confirm huge quantity.
- All products conform to BIS standard.



MAAD

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