



L&T Construction & Mining Machinery

Advanced Sand Plant Solution

Manufacturing premium quality engineered sand



Feed to  Sand Plant



Product:  Engineered Sand

 **Sand Plant**

In technical collaboration

 **KEMCO** Japan

Designed & Manufactured by: L&T - Kansbahal Works

About Larsen & Toubro

Larsen & Toubro is a multi-billion dollar technology, engineering, construction, manufacturing and services conglomerate with global operations. A strong, customer-focused approach and the constant quest for top-class quality have enabled L&T to attain and sustain leadership in its major lines of business for over eight decades.

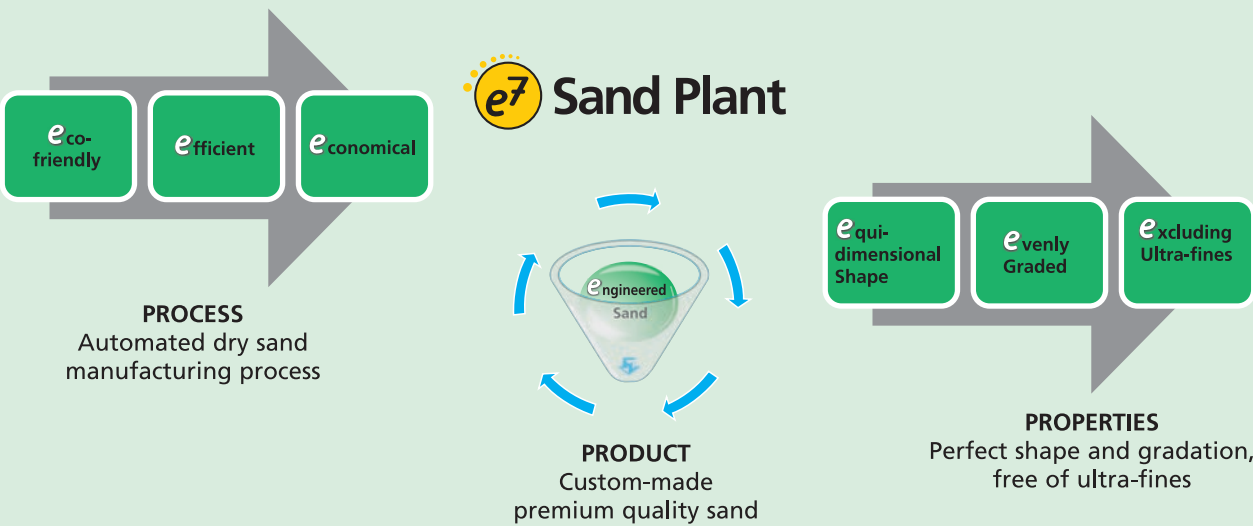
L&T Construction & Mining Machinery

L&T Construction & Mining Machinery is engaged in marketing and servicing of a wide range of equipment, deployed in the core sectors of the economy. From being a pioneer in excavator technology, L&T has completed 75 years of service with supply of earthmoving equipment to the Indian market and meeting high standards of safety, quality and reliability.

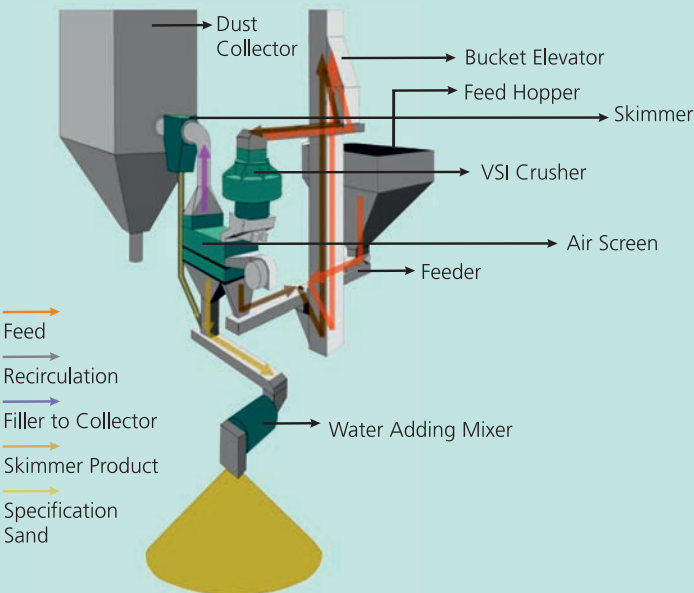
At Kansbahal Works, L&T undertakes design, manufacture and supply of the complete range of Crushing Systems and Equipment, Surface Miners, Advanced Sand Manufacturing solutions, in addition to critical machinery and parts of steel and paper industries. Strategic technology alliance with global leaders in specific businesses, backed by decades of inhouse engineering and manufacturing expertise, enable L&T to offer its customers superior end-to-end solutions.

e7 Sand Plant – Advanced Sand Plant Solution

The L&T e7 Sand Plant offers a sustainable alternative to river sand – high quality engineered sand. Manufactured in collaboration with the globally acknowledged leaders in the field of sand manufacturing plants, KEMCO of Japan, this highly versatile system manufactures sand that is eco-friendly and provides the perfect combination of size, shape, gradation and purity of the end product.



e7 Sand Plant Components



The e7 Sand Plant Advantage

Ideal grain shape and size

Increased production of grains in the range 0.15 - 0.6 mm, (traditionally difficult product size to achieve) is made possible by the combination of the new L&T Kemco Vertipact and the closed-circuit air screen system that re-circulates oversize back to the crusher. It provides controlled grain size, and particle shape that performs as well or better than natural sand

Low operating cost

Special design and metallurgy for high service life.

Controlled fineness modulus - 2.2 - 3.2 is easily achieved. Smaller FM is also possible at lower capacity

Easily controlled moisture content

The system can produce sand similar in consistency to that of wet processed sand, by using a water-adding mixer to give a controlled moisture content, The consistent grading is maintained during stockpiling and transportation.

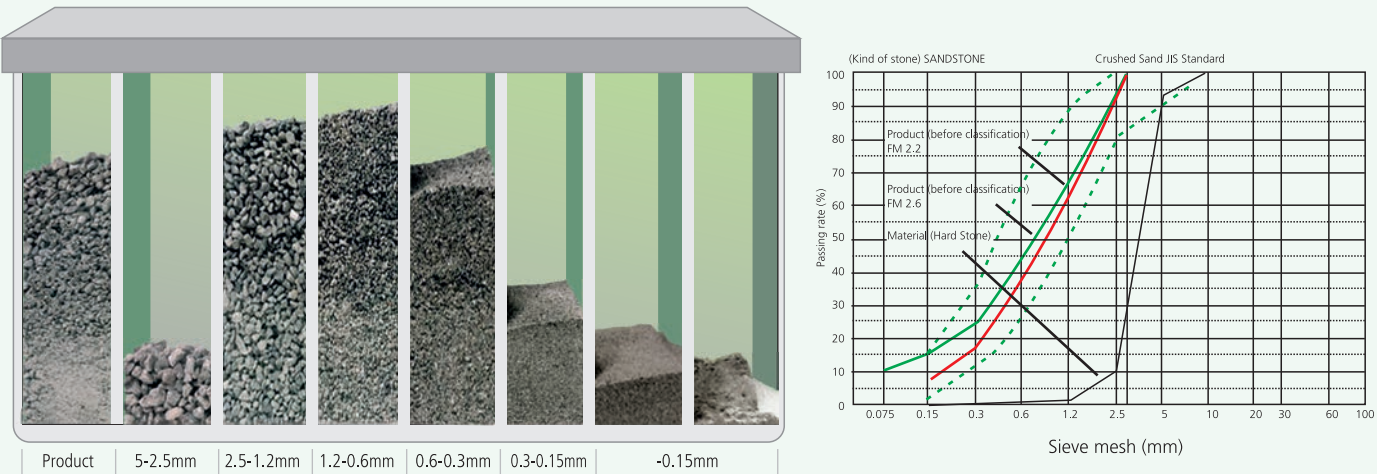
Environment friendly

A low-noise design and sealed structure that eliminates dust

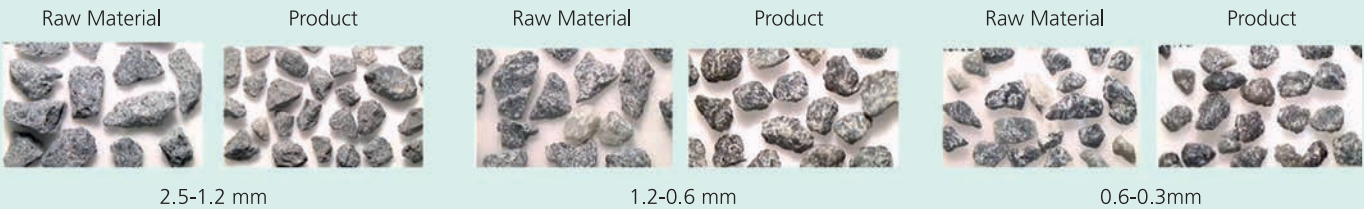
Flexibility and automated controls

Depending on application / concrete mix design, you can design the desired sand gradation to meet specific requirements. The system is fully-automated to select the desired options.

Product Gradation Example



Shape Comparison of Raw Material and e7 Sand Plant Output



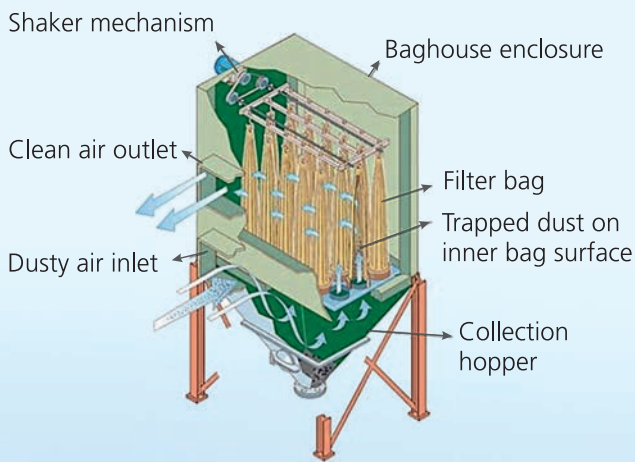
The e7 Engineered Sand Advantage for Concrete Mix

- Improved workability / flowability
- Improved compressive strength
- Improved surface finish
- Reduced cement consumption



e7 Sand Plant Components - Exploded view

5 Bag Filter

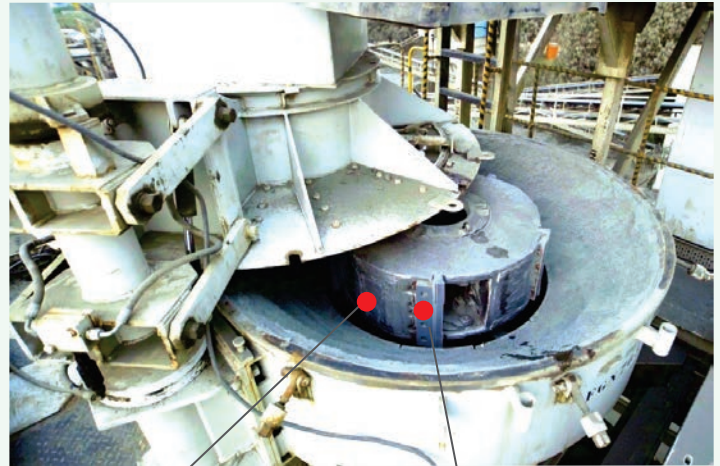


1. Bucket Elevator
2. Vertipact
3. Air Screen
4. Preduster (Optional)
5. Bag Filter
6. Water Adding Mixer (Optional)
7. Product Conveyor
8. Output: Engineered Sand
9. Ultra-fines storage hopper



2 Vertipact (Specialized VSI)

- Special 5 Port Rotor with hammers for improved crushing performance in tertiary stage (2.5-12 mm size particles).
- Favourable grain shape
- Consistent gradation
- Low operating cost

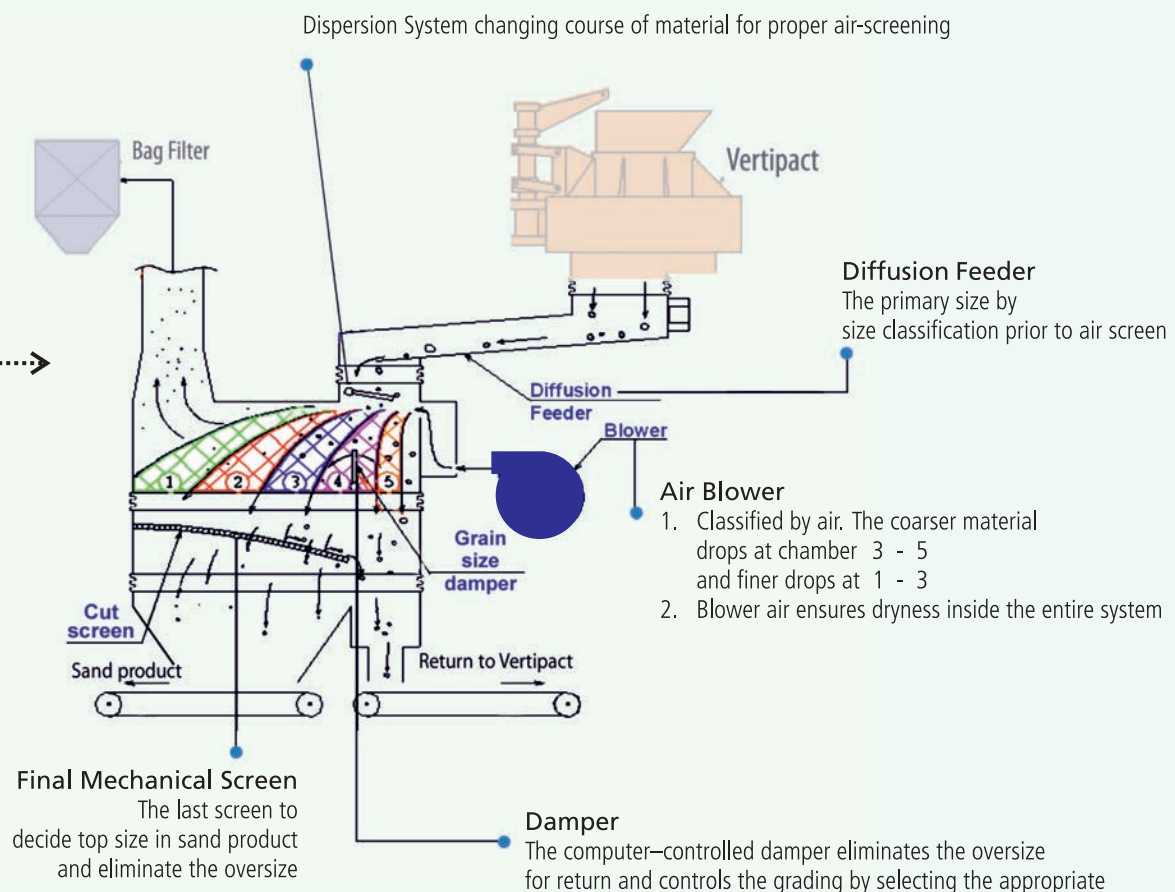


5 Port Rotor

Hammer for higher size-reduction

3 Air Screen Mechanism

The Air Screen is a fully-automated system that selects and classifies crushed material into sand product and oversize, rejecting excess fine particles to the dust collector. The sand gradation can be altered by means of an internal damper.



Comparison of Sand Manufactured using Different Technologies

Sand Quality	Cone Sand (Crusher Dust)	VSI Sand (Crusher Dust)	VSI -> Washed Sand	VSI -> Classified Sand	VSI -> Screen @3mm-> Classifier/ Washed	e7 Sand Plant Sand (Closed Circuit)	Natural River Sand
Overall Grading						 Precise Control	 *May Vary
Cleanliness /Ultra-fines Control	 Dusty	 Dusty				 Precise Control	
Fineness Modulus	 Very Coarse	 Less Coarse	 Very Coarse			 Precise Control	 *May Vary
Shape	 Very Flaky	 Less Flaky	 Less Flaky	 Less Flaky	 Less Flaky		
Flow							

Sand Plant - Advanced Dry Sand Manufacturing Plant Models

Specifications	Model	e7 - 40	e7 - 60	e7 - 100
Capacity of feed material (0-8mm)		Maximum 40 t/h	Maximum 60 t/h	Maximum 100 t/h
Capacity of FM 2.7-3 product (tentative)		37 ~ 34 t/h	56 ~ 53 t/h	93 ~ 87 t/h
Connected load Electric power (tentative)		320 kW	425 kW	780 kW

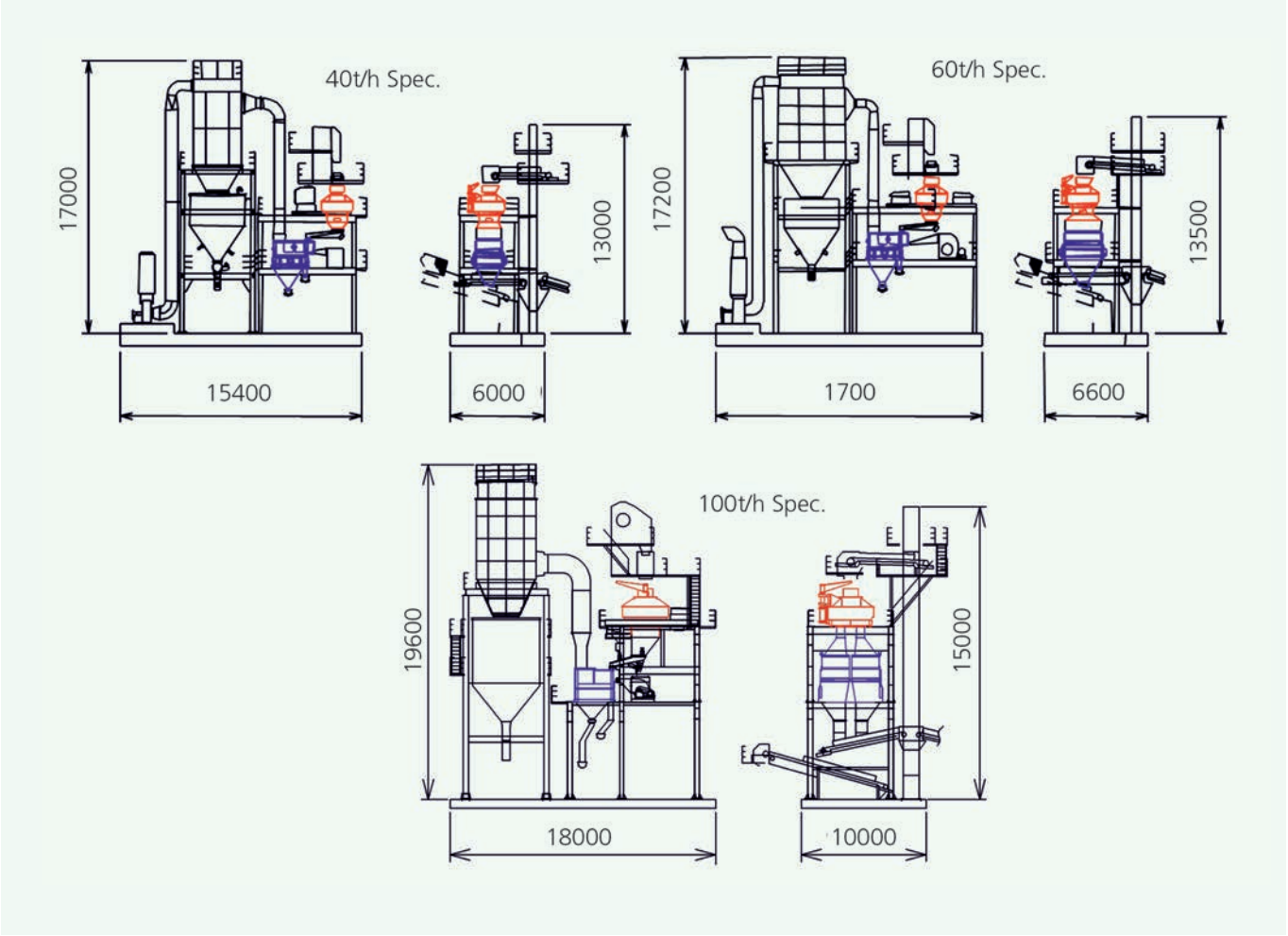
Notes:

- The capacity is indicative for producing crushed sand to be used as a single sand component for aggregate and when materials having bulk density of 1.6 t/m³ are constantly supplied.
- Moisture content of the feed materials is 2% or less.
- Processing capacity varies subject to stone quality and size of the material.
- Consumed power to be lower depending on material properties.

Help us help you better. Please provide the following inputs while making an enquiry:

- Properties of the material: (a) kind (b) bulk density (c) hardness (d) SiO₂ (e) grain size/ feed gradation (f) moisture content
- Grain size / gradation of product desired
- Frequency and power voltage
- Other matters of preference, special data, etc.

Overall Dimensions - Sand Plant Models (in mm)



Comparison of Material Flow and Applications: e7, e-Sepa, SAC

Model		e7 Sand Plant	Air Separators (e-Sepa)	Superior Air Classifier (SAC)
Application	Sand production (Shaping & Grading)	⊙	○	-
	Top size cut	○	○	-
	Sorting in size	-	⊙	-
	Classification	⊙	○	○
Flow				

Advanced Sand and Aggregate Solutions for Every Need



e7 Sand Plant

e7 Sand Plant

e7-40 (40tph), e7-60 (60tph), e7-100 (100tph)
Manufacturing of river quality engineered sand from crusher dust



e-Sepa

Air Screen

e-Sepa: 1200 (120tph), 1900 (190tph), 2500 (250tph)
Screening of aggregates (0-40 mm) and air-classification of sand



SAC

Superior Air Classifier

SAC: 1600 (80tph), 2500 (120tph), 3900 (200tph)
Air classification of sand controlling ultra-fines in crusher dust



Vertical Shaft Impactors

VSI Dry - VS-301H, 322H, 394H VSI Wet - VS 322HW, 394HW
Finer crushing and shaping of aggregates



Feed end view



L&T Construction & Mining Machinery

A brand of Larsen & Toubro Limited

Larsen & Toubro Limited

Godrej Waterside, Tower 2, 10th Floor, DP-5, Sector-V, Salt Lake, Kolkata - 700 091, India
Tel : +91 080 40401891 **Mob:** +91 9146063570 **Email:** saurabh.kant@larsentoubro.com

For further details:

Sourav Biswas **Mob:** +91 9836020055 **Email:** biswassourav@larsentoubro.com
B. Venkataraman **Mob:** +91 80560 17703 **Email:** bvenkataraman@larsentoubro.com
Sabyasachi Mishra **Mob:** +91 98746 95119 **Email:** sabyasachi.mishra@larsentoubro.com

Regd. Office:

L&T House, N. M. Marg
Ballard Estate
Mumbai - 400 001, INDIA.
CIN: L99999MH1946PLC004768