MEKA

WET PROCESSING

ONE WAY TO KEEP THE MATERIAL IN SPEC IS THROUGH WASHING AND CLASSIFYING

MEKA CRUSHING SCREENING AND
CONCRETE BATCHING TECHNOLOGIES
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WET PROCESSING

Natural sand and gravel extraction had been the backbone of the aggregate industry for many years, however, resources are both increasingly scarce and more expensive to extract, plus it is more difficult to open new pits, dredging and extraction sites. The lack of good material deposits force manufacturers to extract sand and gravel containing inorganic components such as clay, silt, slime and sometimes organic impurities such as coal, wood.

Sand containing impurities and contaminants, need washing and processing to produce a consistently high grade, quality product that meets safety requirements from a strength and performance perspective.

To produce standardised, clean and washed aggregates MEKA offers an extensive product portfolio to work in many applications supporting customers in the washing minerals industry. MEKA products have excellent reliability, are easy to transport, operate and provide fast onsite installation.

The machines and devices required for cleaning must cooperate perfectly and efficiently. MEKA offers everything from one source on a top quality level:

• Washing Plants • Fine Material Washers • Coarse Material Washers • Bucket Wheel Dewaterers • Dewatering Screens • Compact Sand Plants

WASHING PLANTS

MEKA washing plants are designed for small to medium sized operators and contractors for splitting of up to 5 products. Wash plant includes a feed hopper complete with reject grid, vibrating or belt feeder, feed conveyor, washing screen, fine material washer and product conveyors.

MEKA washing systems offer a range of screens and fine material washers options to fit your needs. The screens are outfitted with strategically placed nozzles to scrub materials clean. High capacity washers deliver the fine aggregates while chutes and cross conveyors deliver the sized products.

The straightforward proven design ensures low maintenance, low running costs and trouble free operation.

Wheeled washing plants are also available, engineered for quick installation and ease of relocation with hydraulic jacking legs (optional), king pin towing facility and site drawbar.

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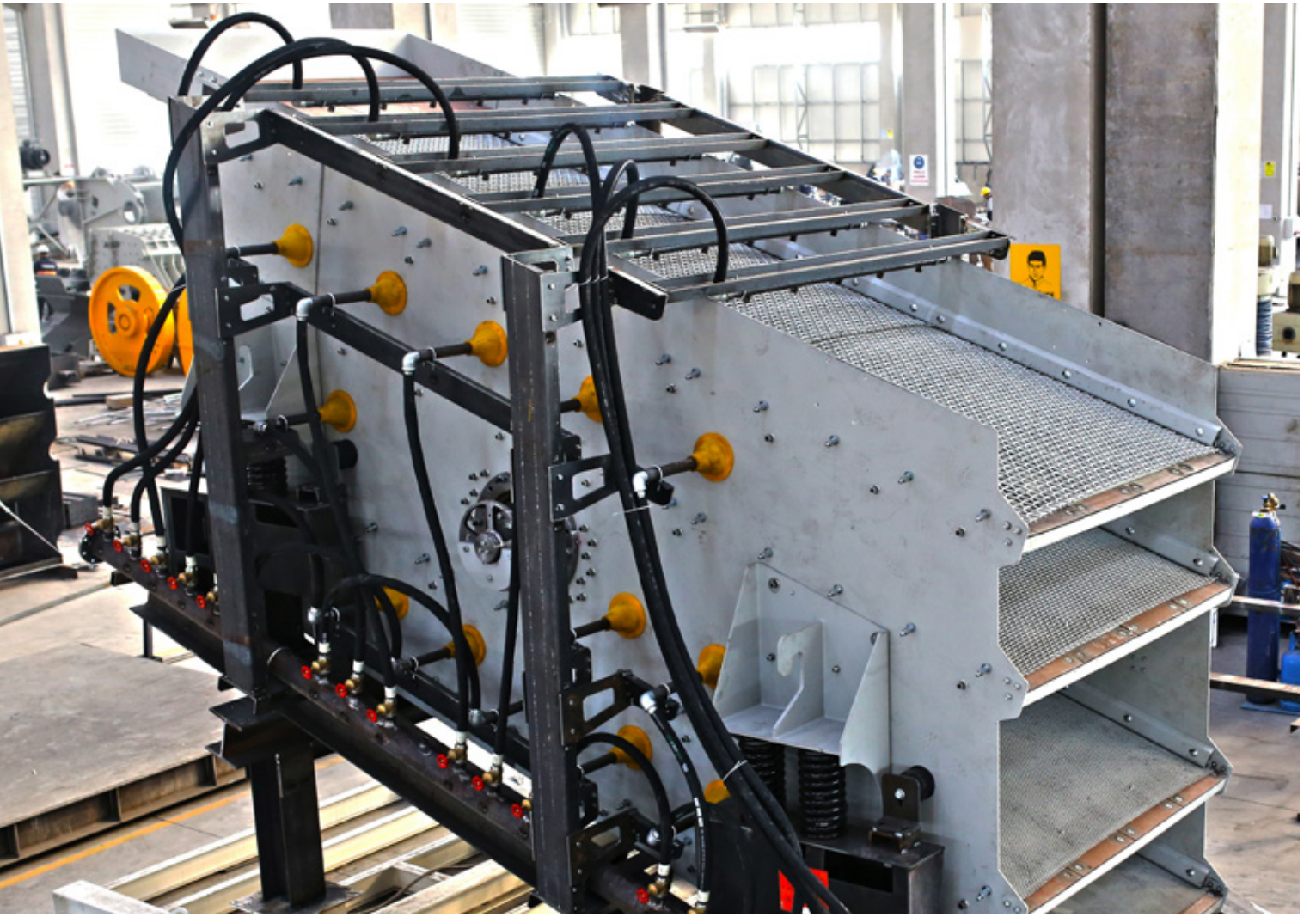
WET PROCESSING / WASHING PLANTS

FEATURES/BENEFITS

- Washing, screening, and sand processing
- Produces up to 4 grades of aggregate and 1 grade of sand
- Removal of trash and ferrous metals
- Feed hopper with manual tipping reject grid
- Variable speed drive for vibrating or belt feeder (optional)
- Feed conveyor with belt scraper
- Washing screen
- Single or twin model fine material washer
- Electrically powered
- Heavy duty robust construction, ideal for rugged operating environments
- Quick set-up time
- Easily integrate with additional water treatment products to ensure the most efficient use of natural resources.

APPLICATIONS

• Sand & Gravel • Crushed Rock • Crusher dust • Scalpings • Iron Ore • Other Mineral Ores • Construction and Demolition Waste Material



WASHING SCREENS

MEKA washing screens are inclined circular motion screens designed to cope with the harshest conditions.

- Increased acceleration and performance
- Quick and easy customisation of screen media to suit your application
- Superior wear resistance, minimising maintenance requirements and maximising plant production.

SPRAY BARS

- Installed on each deck for maximum material washing with wide jet nozzles
- Valve regulated water flow rate

SCREEN DISCHARGE CHUTE

- AR plate steel liners
- Maintenance-free service life
- Discharge directly onto conveyor

FEATURES/BENEFITS

- Huck bolted
- High capacity (depending on mesh size and material type)
- Low maintenance
- Side tensioned screen box

FINE MATERIAL WASHERS

Fine material washers, also frequently named dewatering screws are utilized to clean and dewater fine aggregates typically minus 10 mm or 5 mm (3/8'' or 4mesh) to fine tune end products to meet specifications and to separate water soluble clay, silt, and micro sized fine particles.

This is accomplished by hydraulic separation; using water to clean and classify by weight. Larger particles (Sand) weigh more so they sink and are collected in the bottom of the trough. They are discharged by steel spiral shaft with replaceable polyurethane or cast steel linings. The smaller lighter unwanted particles are floated to the surface and discharged over the weirs at the lower end of the machine.

Capable of producing high capacities, fine material washers deliver extreme productivity. High efficiency single or dual drives result in low power requirement, thus reducing operating costs while increasing throughput. A large capacity pool and adjustable speed control via sheave

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WET PROCESSING / FINE MATERIAL WASHERS

		SIZE (DIA X L)		CAPACITY		MATERIAL		POWER		SCREW	MACHINE WEIGHT	
		mmxmm	inchxfeet	mtph	stph	inch	mm	kW	HP	RPM	Kg	lb
SINGLE	MFWS0440	400x4000	16x13	20	22	3/8"	10	3	4	21	1000	2200
	MFWS0550	500x5000	20x16	30	33	3/8"	10	4	5,5	21	1500	3300
	MFWS0660	600x6000	24x20	50	55	3/8"	10	5,5	7,5	21	2400	5300
	MFWS0976	917x7620	36x25	100	110	3/8"	10	11	15	21	6500	14300
	MFWS1010	1000x10000	40x33	150	165	3/8"	10	22	30	17	10500	23200
	MFWS1197	1120x9700	44x32	175	192	3/8"	10	18,5	25	17	10500	23200
DOUBLE	MFWD0440	400x4000	16x13	43	47	3/8"	10	2x4	2x5,5	21	2300	5100
	MFWD0550	500x5000	20x16	67	73	3/8"	10	2x5,5	2x7,5	21	2800	6200
	MFWD0660	600x6000	24x20	100	110	3/8"	10	2x7,5	2x10	21	5200	11500
	MFWD0880	800x8000	32x26	200	220	3/8"	10	2x15	2x20	21	7700	17000
	MFWD0976	917x7620	36x25	200	220	3/8"	10	2x11	2x15	21	11300	24900
	MFWD1197	1120x9700	44x32	350	385	3/8"	10	2x18,5	2x25	17	18900	41700

Results may vary depending on feed material gradation, density, silt & clay content, amount of water used, equipment settings and washing application.

changes ensures a steady and consistent flow of fine aggregate peoducts.

Available in both single and twin screw configurations, fine material washers are most often used after a wet screening operation to process products such as concrete, mason, mortar.

FEATURES/BENEFITS

- Heavy duty steel plate construction provides years of operation
- Oil lubricated heavy duty gear box
- Standard polyurethane or cast steel spiral linings reduce operating costs
- Simple parts replacement assemblies
- Easy access outboard bearing assemblies

COARSE MATERIAL WASHERS

Coarse material washers are used to remove a limited amount of dirty material from a coarse aggregate. This material includes very water soluble slimes, silts, soft clay, and organic particles. They are often used as a final wash following a wet screen and are designed to scrub and clean gravel and crushed stone up to 75mm (3'') in size.Both single and double spiral units are available depending on the capacity required.

Classifying is accomplished when coarse material containing dirty material that has a specific gravity less than the coarse material is floated upwards and carried over the adjustable weirs at the back of the machine.

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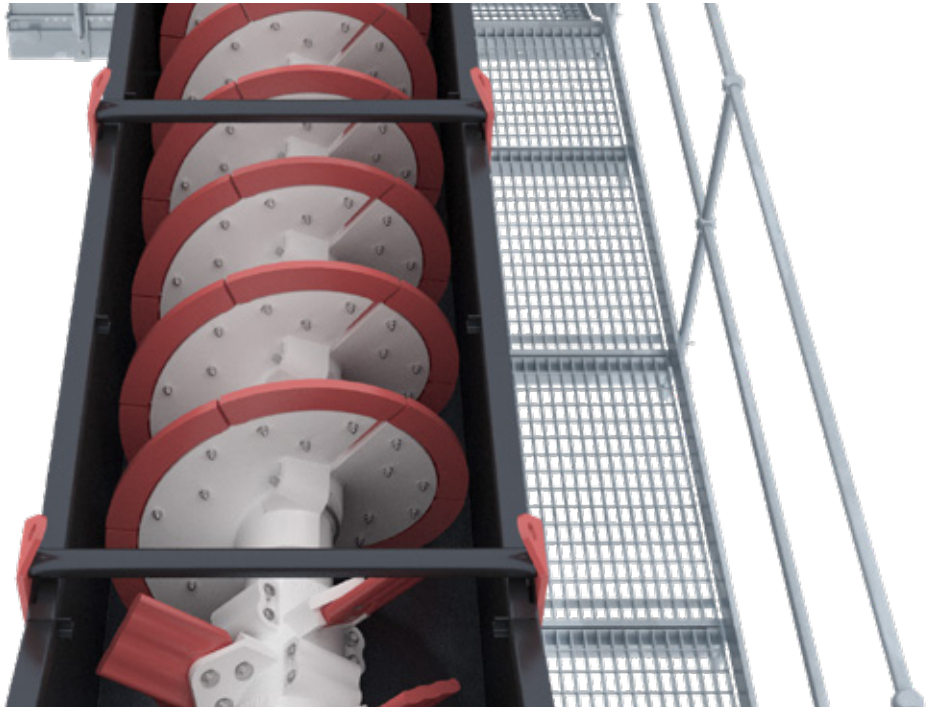
WET PROCESSING / COARSE MATERIAL WASHERS



FEATURES/BENEFITS

- The high efficiency V belt drive assembly reduces power and maintenance requirements resulting in increased life and reduced operating costs.
- Can remove dirty materials
- Oil lubricated heavy duty gear box
- Heavy duty shafts
- Simple replacement parts assemblies
- Easy access outboard bearing assemblies

MODEL	SIZE (DIA X L)		CAPACITY		MATERIAL		POWER		SCREW	MACHINE WEIGHT	
	mmxmm	inchxfeet	mtph	stph	mm	inch	kW	HP	rpm	Kg	lb
MCWS0954	928x5450	36x18	150-175	165-192	0-65	0 - 2 1/2"	30	40	16-32	6500	14300
MCWS1163	1118x6350	44x20	200-250	220-275	0 -75	0 -3"	37,5	50	16-32	9000	20000
MCWD0954	928x5450	36x18	300-350	330-385	0-65	0 - 2 1/2"	2x30	2x40	13-26	10800	23800
MCWD1163	1118x6350	44x20	400-500	440-550	0-75	0 -3"	2x37,5	2x50	13-26	15500	34200

Results may vary depending on feed material gradation, density, silt & clay content, amount of water used, equipment settings and washing application.

TECHNICAL DATA

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WET PROCESSING / BUCKET WHEEL DEWATERERS

BUCKET WHEEL DEWATERERS

MEKA Bucket Wheel range of sand classification systems are designed to operate with maximum versatility for efficient dewatering and fine sand recovery from the solid-water suspension in the underflow of a washing screen or dissolving station. The twin bucket units provide the removal of clays, silts and slimes to produce up to 2 grades of sand.

Sand from a washing screen becomes a solution with water and is fed into the bucket tank of the washer. Most of the course sand is taken away by the buckets, drained and discharged. The rest of this sand then floats in suspension to the auger tank. The courser of this sand, sinks to the bottom and is removed to the buckets for discharge by the auger screw. The silt,then floats away to the customers ponds.

The water flow rate is an important factor, as a material with a high percentage of fines to be removed, will require a high volume of water.

APPLICATIONS

• All Forms of Concrete, Mortar and Asphalt Sands • Quarry Dust / Crushed Fines • Lake and Beach Sands
• Slag • Golf Course Sands • Filter Bed Sands • Fly Ash • Iron Ore

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WET PROCESSING / BUCKET WHEEL DEWATERERS

MODEL	DRIVE		WATER CONSUMPTION		CAPACITY		WORKING rpm
	kW	HP	m3/hr	gpm	mtph	stph	
MBW60	5,5	7,5	50-75	220-330	40-60	44-66	2-5
MBW100	7,5	10	75-100	330-440	60-100	66-110	2-5
MBW150	11	15	100-125	440-550	100-150	110-165	2-5

FEATURES/BENEFITS

- High capacity depending on material size and type
- Can produce either 1 or 2 grades of material
- Production of silt free material, removes clays, silts and slimes below 75 µm (200 mesh)
- Increased drainage time produces a drier product, removes water to 10–15% of residual water content
- Major reduction in saleable material discharging to the pond
- Economical in operation, low running costs
- Heavy duty robust construction ideal for rugged operating environments
- Incase further recovery is required, bucket wheel performs 80–90% of the work reducing wear on pumps and cyclones whilst increasing operating efficiency

DEWATERING SCREENS

You can count on MEKA Dewatering Screens to help you turn material washing problems into profitable solutions and meet the specification demands for multiple sand products.

Dewatering screens are typically single deck, adjustable incline, linear motion screens, fitted with slotted aperture panels utilized to dewater fine aggregates prior to stockpiling.

The screen receives a high percentage of water-saturated fine material and produces a dense, compact cake that rides up the belt conveyor and forms a pile with no runoff or water pools. This provides a dry, transportable product with an approximate moisture content of 10-15 percent by weight, that can be sold in a short period of time.

MEKA offers three models of dewatering screens to handle a variety of capacities, including the MDS 1224, MDS 1824 and MDS 1840, to efficiently dewater.

MODEL	Dimensions		Screening Area		Power		Maximum Feed Capacity		Working Angle
	mm	ft	m^2	sqft	kW	HP	mtph	stph	°
MDS 1224	1200 x 2400	4x8	2,88	32	2 x 3,6	2x5	70	77	-5 / +5°
MDS 1824	1800 x 2400	6x8	4,32	48	2 x 5	2x7	100	110	-5 / +5°
MDS 1840	1800 x 4000	6x13	7,2	78	2 x 7,5	2x10	150	165	-5 / +5°

Results may vary depending on feed material gradation, density, silt & clay content, amount of water used, equipment settings and washing application.

DRIVE

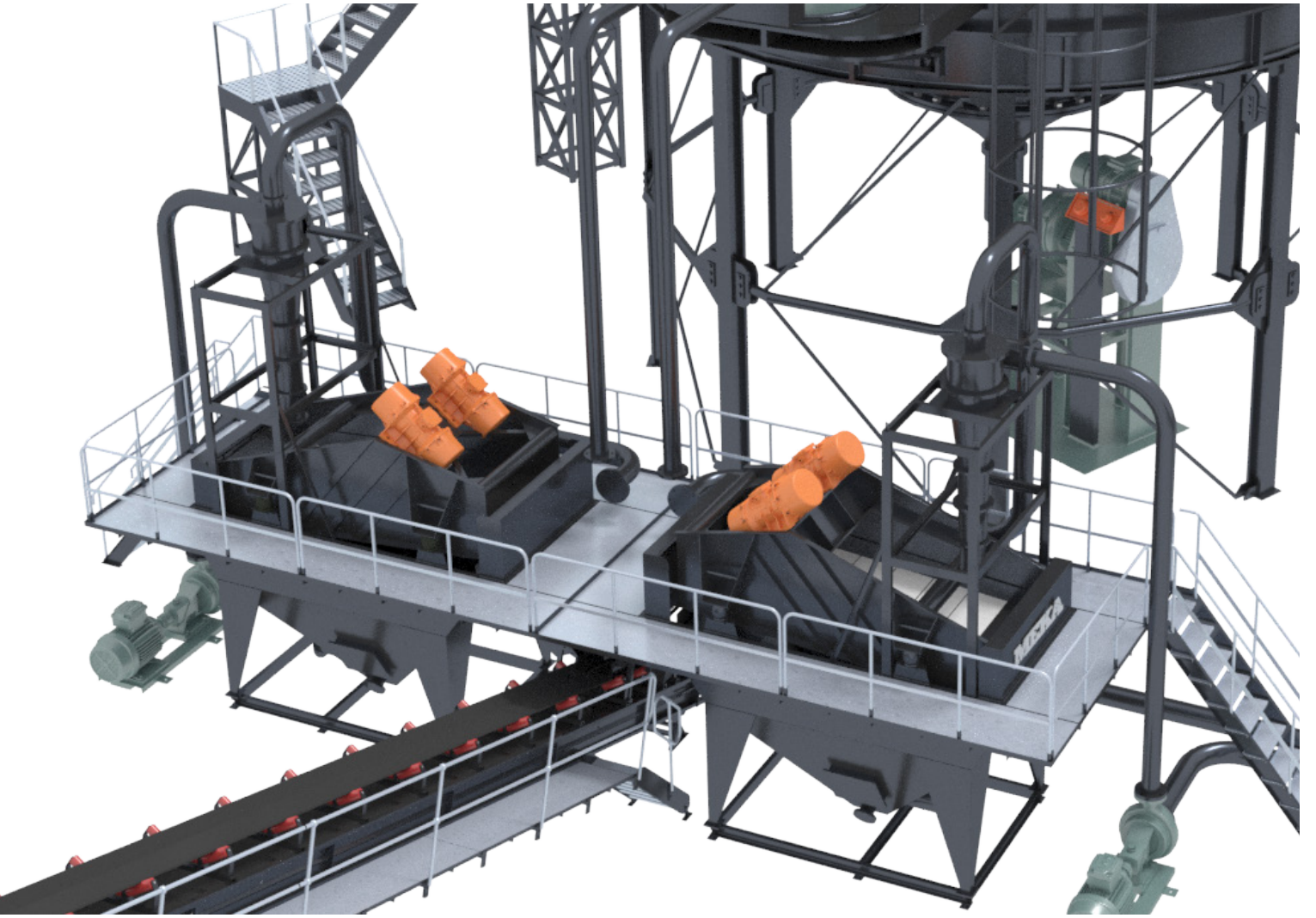
Vibration on MEKA dewatering screens is produced by vibrators which can be run at different speeds depending on the application.

The two vibrators initiate a linear motion, driving particles in an uphill, downhill or horizontal direction – so water is strained down through the sand bed and below the screen deck.

SCREEN MEDIA

MEKA dewatering screens are fitted with modular polyurethane screen media as a standard. Consistent with MEKA quality, the screen surface is long lasting and easy to maintain.

TECHNICAL DATA



COMPACT SAND PLANTS

To ensure maximum efficiency from your washing plant the introduction of sandwashing equipment is widely accepted as the number one choice. Compact sand plants are designed for aggregate producers requiring a fines recovery plant to support their existing operations by reducing the volume of fine material reporting to the settling pond. The range uses centrifugal force within the cyclone(s) to remove clay, silt and slime from sand to bring it into specification and combines a collection tank, centrifugal slurry pump(s), hydrocyclone(s) and a dewatering screen on a single chassis.

MEKA sand plant is built up by combining one of each of the following main components :

- 3 models of pumping tanks,
- 3 sizes of sand pumps, chosen for their resistance to abrasion, and their performance,
- 3 types of high performance cyclones designed to ensure a cut 70 µm,
- 3 types of dewatering screens equipped with modular polyurethane panels with slotted openings.

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WET PROCESSING / COMPACT SAND PLANTS

In general applications, an MEKA Sand Unit produces a 0-5 mm (0-4 mesh) washed sand in accordance with applicable concrete sand standards.

In more demanding applications, e.g.where there is a higher degree of pollution, or for specific productions or higher tonnages, MEKA is able to propose an individual solution corresponding to the customer's specific request by combining several Sand Units either in parallel or in series.

APPLICATIONS

- Gravel and concrete sand industries,
- The production of industrial sands,
- The treatment of polluted soils (rehabilitation of industrial sites, dredging of rivers or harbours, etc.).

FEATURES/BENEFITS

- Can recover 1 or 2 grades of sand from wet feed
- Maximum recovery of all material above 75 µm (200 mesh) providing major reduction in fine material discharging to the water management system, thus reducing recovery cycle and saving money

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WET PROCESSING / COMPACT SAND PLANTS

- High frequency dewatering screen with polyurethane modular media reduces residual water content in your final product to 10–15%, ready for market straight from the belt conveyors.
- Pumps and cyclones have replaceable liners for extended wear life
- Low maintenance and simple operation with self regulating cyclone tank with built in float system
- Robust easy to assemble steel construction complete with galvanized walkway & handrails provide easy access
- All electric plant pre-wired to control panel or isolators to integrate with other equipment
- Breaks down into a single container for transport

MODEL	Maximum Capacity		Water Requirement		Cyclone Diameter		Screen Motor Power		Dewatering Screen Size		Pump Size	Pump Power		Feeding Height		Discharge Height (D)		Weight	
	mtph	stph	m3/h	gal/min	mm	inch	kW	HP	mm	feet	inch	kW	HP	mm	inch	mm	inch	kg	lb
MCSP 1-70	70	77	140-200	440-880	500	20	2 x 3,6	2x5	1200 x 2400	4x8	8"/6"	30	40	1800	71	1260	50	6100	13450
MCSP 1-100	100	110	200 - 350	880-1540	660	26	2 x 5	2x7	1800 x 2400	6x8	8"/6"	37	50	2100	83	1260	50	8200	18100
MCSP 1-150	150	165	300 - 450	1320-1980	2 x 500	2X20	2 x 7,5	2x10	1800 x 2400	6x8	10"/8"	45	60	2100	83	1260	50	8500	18700
MCSP 2-200	200	220	600	2640	2 x 660	2x26	2 x 7,5	2x10	1800 x 4000	6x13	10"/8"	75	102	2100	83	1260	50	10000	22000
MCSP 2-250	250	275	750	3300	2 x 660	2x26	2 x 7,5	2x10	1800 x 4000	6x13	12"/10"	90	120	2100	83	1260	50	10200	22500

Results may vary depending on feed material gradation, density, silt & clay content, amount of water used, equipment settings and washing application.

TECHNICAL DATA

MEKA
WET PROCESSING

MEKA IS A PROFESSIONAL SOLUTION

Meka has developed and manufactured crushing-screening machines, washing equipment, stationary and mobile crushing and screening plants, recycling plants for concrete and asphalt, and concrete batching plants for a great number of customers. Today, there are more than 2,000 Meka plants in over 65 countries on four continents contributing to the construction of a better world. Meka is preferred by global leaders such as Holcim, Lafarge, Cemex, and Heidelberg, and our brand is acknowledged as “the choice of professionals” worldwide.

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