



# EMERALD

MODULAR EQUIPMENT



CRUSHING ■ SCREENING ■ MATERIAL HANDLING ■ WASHING ■ WATER TREATMENT ■ ORGANICS



# MODULAR WASHING AND CLOSED LOOP WATER AND SILT MANAGEMENT SYSTEMS



## CUSTOM MODULAR WASHPLANTS

100 – 400tph

Quarry • Sand & Gravel • Recycling • Coal • Legacy Piles



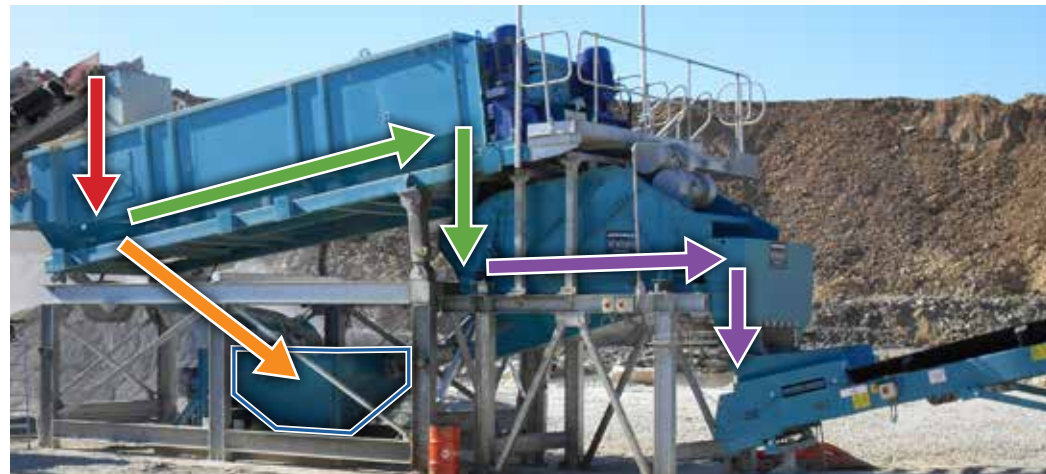


Aggressive, high speed scrubbing of material to remove silt and clays producing a clean saleable product. Recycling options allow further separation of the aggregates and contaminated waste material for maximum versatility.



### Options include:

- Multideck aggregate dewatering screen
- Trash dewatering screen to separate wood and other contaminants from the waste water for disposal
- Post / prescreen fitted with mesh or pu media for highly abrasive materials
- Stacked, modular design to reduce footprint onsite



- Feed material enters hull
- Aggregate scrubbed, releasing contaminants
- Fines and contaminants separated and removed
- Aggregate rinsed and sized
- Waste water collected and transferred to sand dewaterer



Clay bound feed material



Contaminant removal



Washed scrubbed aggregate

### SAND SCREWS

Simple effective system to produce a single grade sand while removing silts and clays.

Single or twin screw systems with adjustable speed for increased control.

Model	GPM	US TPH
3625Single	720	100
3625Dual	1350	200
4432Single	1300	175
4432Dual	2400	350



### BUCKETWHEEL / AUGER SCREW COMBINATIONS

Mobile bucketwheel range dewaterers c/w fines retention screw and twin bucket wheel to remove clays, silts and slimes to produce up to 2 grades of sand.

Variable independent bucket wheel and auger screw speed allow maximum control over fines recovery producing a drier product. Features such as the adjustable weir and water injection system allow increased control of the varying silt content.

Available as electric/hydraulic drive.



Model	GPM	US TPH
BW100	720	110
BW150	1320	165
BW200	1680	220



# SandMAX SAND CLASSIFICATION SYSTEMS

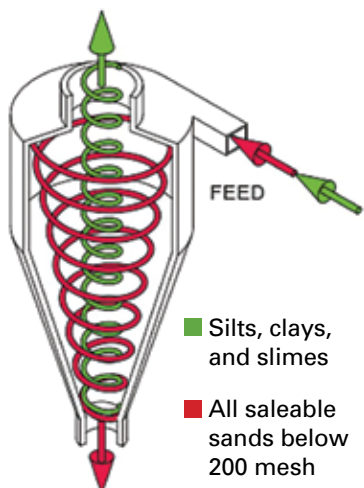
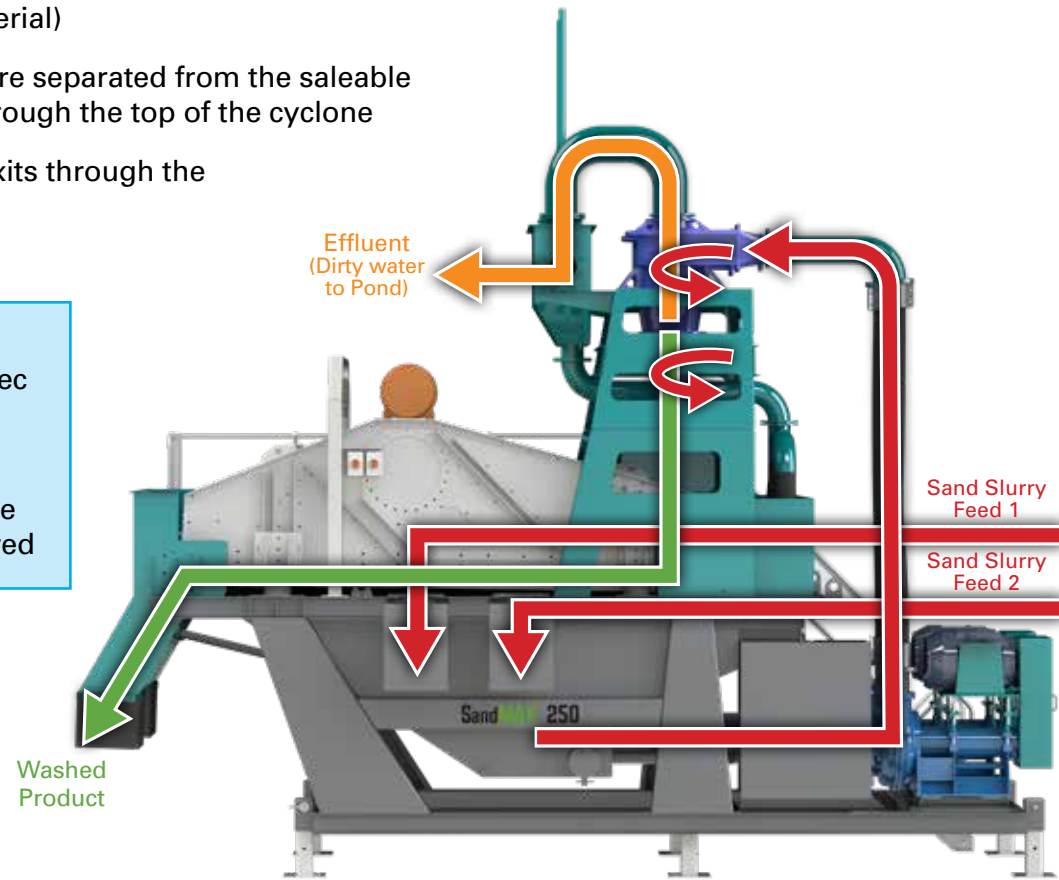
## SandMAX SYSTEMS

Cyclone and dewatering screen combinations offer the user maximum control over fines while removing all silt, clays and slimes from the required spec product. Cyclone classification and dewatering, along with independent blending capabilities, allow the user to enhance the sand spec while ensuring maximum recovery of all saleable material

### How does it work?

- Slurry enters the sump tank and is pumped up to the cyclone(s) to be classified at 200mesh (400 mesh for superfine material)
- Silts, clays and slimes are separated from the saleable sand and sucked out through the top of the cyclone
- The saleable material exits through the underflow and onto the dewatering screen

The high frequency screen produces market ready spec sand with less than 12% moisture content. Sand can be blended on the dewatering screen if required



### THE CYCLONE

The cyclone has no moving parts and relies on a tangential feed to create the vortex allowing separation of the waste and saleable material. The heavier saleable product exits through the underflow aided by gravity. The lighter material exits through the overflow discharge pipe.

Material can be cut at 400 or 200 mesh depending on the application. Options such as interchangeable wedge inlets and replaceable wear rubber liners offer increased control over fines and increase machine wear life.

## SandMAX SYSTEMS

Efficient, modular sand recovery plants which can replace outdated Screw technology to enhance sand production and produce a cleaner, tighter SPEC sand product. SandMAX sand plants can accept slurry or dry feed materials, can double wash\*, classify and produce up to 2 SPEC sand products on the one unit. Equipped with Linatex lined cyclones, pumps and blending chutes to ensure maximum uptime and a low cost per ton in any application.



### Benefits

- 99% Recovery of all saleable materials
- Dry product (10-12%) residual moisture
- Blending between products
- Low maintenance / operational costs

SandMAX	GPM*	TPH*
SM150 Single Grade	600-1000	100-140
SM150 Dual Grade	600-1000	100-140
SM250 Single Grade	1100-1800	200-240
SM250 Dual Grade	1100-1800	200-240

\* Approx rate depending on feed material, silt content etc.

### DRY SCREENINGS TO SPEC SAND

SandMAX Sandplants can be utilized to wash Dry Screenings or Crusher Dust to yield **DRY, SALEABLE, SPEC Sand**.

They can accept a dry or slurry feed material and produce **SPEC Concrete or Asphalt** sand along with a secondary sand.

### SandMAX PREWASH

Sand with high levels of silt require a double wash to meet the stringent sand spec.

The SandMAX Prewash can double wash, classify and produce a spec sand product on a single chassis.



### Benefits

- Single or dual grade on single chassis
- Classify and blend sand products
- Maximum recovery of all saleable material
- Market ready — truckable sand



Sand classification systems are designed to **recover the maximum amount of saleable product possible thus increasing revenue and reducing the amount of material lost to the pond.**

Each system has limitations with some requiring constant manual adjustments to control the fines variation in the feed.

## SandMAX SYSTEMS

The SandMAX yields a 99% recovery rate of saleable material vs a Sandscrew of 85-95% efficiency which requires constant manual adjustment and is less tolerable to increased silt variations.

Model	SandMAX	Sand Screw
Rated Capacity	200 TPH	200 TPH
Efficiency	99%	95%
Production	198 TPH	190 tph
Material lost to Pond	2 TPH	10 TPH

	SandMAX	Additional Revenue
Additional TPH	8 TPH	\$80
Daily TPH	64	\$640
Weekly TPH	320	\$3,200
Yearly TPH	12,800	\$128,000

Based on a \$10/ton rate for sand; the SandMAX would generate an additional \$128,00 revenue each year compared to the sand screw.

## Cleanout Costs

Factors such as pond maintenance must also be taken into account when loosing such high volumes of saleable material to the pond.

Utilizing a SandMAX reduces pond cleanout costs by 80%.

	SandMAX	Sand Screw
Material lost to pond	2 TPH	10 TPH
Yearly material lost to pond	3,200 tons	16,000 tons
Daily sand removal (at 50TPH)	400 tons	400 tons
Time to remove	8 days	40 days
Labor and equipment cost	\$150/hr	\$150/hr
Total cost to remove material	\$9,600	\$48,400



**Emerald Modular Equipment (EME) specialize in the design, installation and commissioning of bespoke feeders, conveyors, screens and walkway systems which can be incorporated into existing plant or used as a standalone unit.**

## HOPPER FEEDERS

Ranging from 10t to 50t capacity with optional hopper extensions, vibrating tipping grids, belt feeders and spreader plates.

## CONVEYORS

Wheel portable units are available as electric hydraulic coupling or as self-powered units. Multiple belting options ensure suitability in a range of applications.

## PolyMAX RANGE

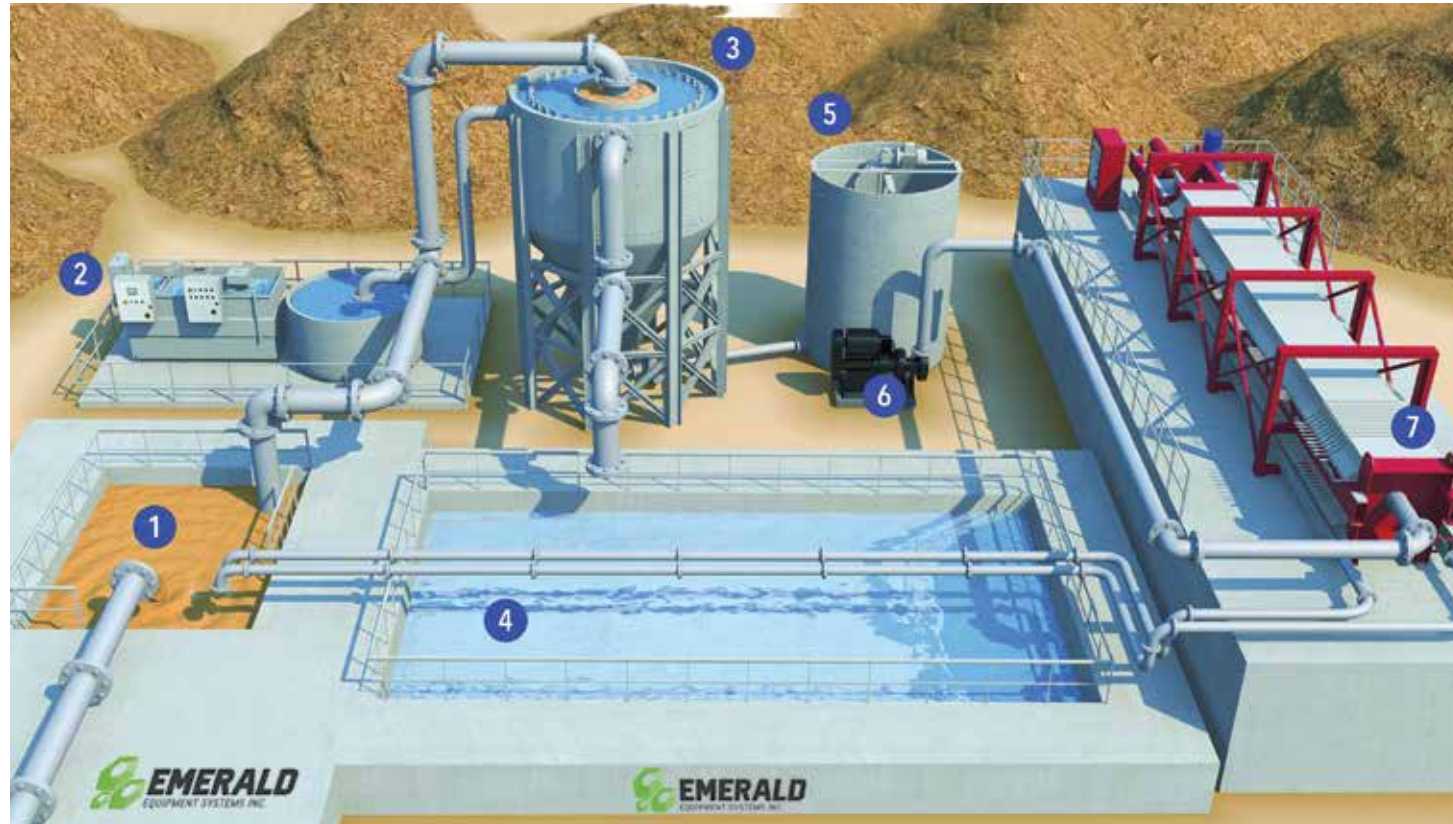
Rubber lined rolling chutes and slurrybox offer custom blending to achieve tighter spec products.

Options include Dry, Wet or Part Rinser, Incline or Cedarapids Horizontal screen, 2 or 3 deck configurations fitted with mesh or PolyMAX screen media.





Custom designed modular systems to eliminate settling ponds, reduce rehandling and disposal costs of waste (silt) material, recover and recycle the water for reuse within the system.



- 1) Waste water (containing silts & clays) from the washing process collects in a Sump and is pumped to the Deep Cone Silo (water clarifier & mud thickener)
- 2) Prepared flocculant is injected into the waste water before it enters the Silo, promoting faster particle / water separation
- 3) Flocculation occurs separating the water and solids. The heavier solids (silts / clays) fall to the bottom of the tank and clean water rises up to the top
- 4) Clean water overflows into the clarified water tank/pit for recycling back through the system
- 5) Thickened mud ( silts/clays) from the Silo, gravity flows into a sludge holding tank when the optimum density has been achieved
- 6 & 7) The HPT pump transfers the thickened mud to the filter press at high pressure for further filtration and dehydration

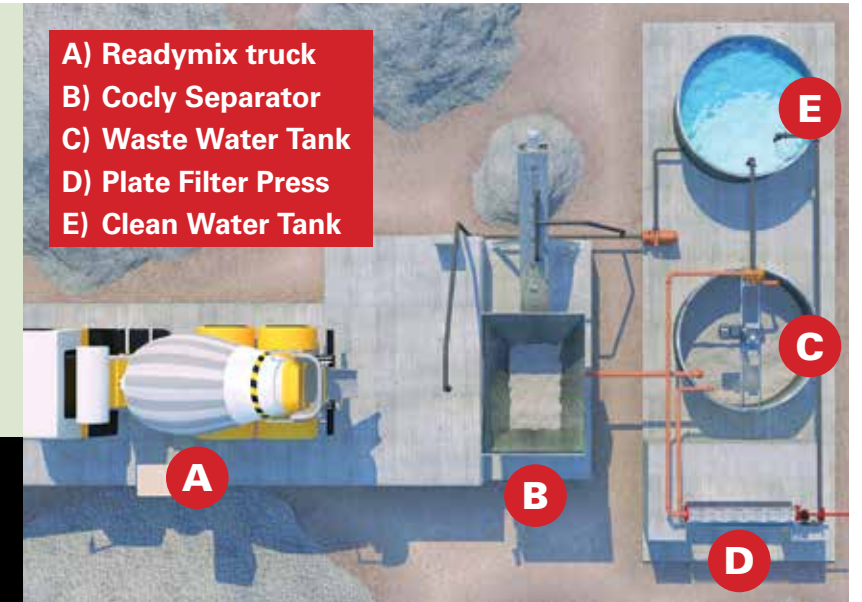


The washout system is designed to recover the **saleable aggregate**, **recycle the water** and **reduce the concrete washout** waste by 80%.

### BENEFITS OF SYSTEM

- Negate requirement for settlement pits and costly rehandling / crushing of waste material
- Eco-friendly, low maintenance, closed loop automated system
- Recycle and Reuse up to 95% water in the process
- Reduces sludge volume by 80% by producing low moisture silt cakes
- **Recover, Resize and Recycle aggregate lost in the waste material**
- **Flocculant not required**

- A) Readymix truck
- B) Cocly Separator
- C) Waste Water Tank
- D) Plate Filter Press
- E) Clean Water Tank



**Recover,  
Resize & Recycle  
Aggregate Lost in the  
Washout Process**



### AGGREGATE RECOVERY SYSTEMS

Process up to 8 TPH of unused concrete from the readymix process.

Plant is designed to recover and separate sand, aggregates and cementitious (grey) water

- Prewired & Pre plumed
- Small footprint & low running costs





# WATER & SILT MANAGEMENT SYSTEMS

## DEEP CONE SILO: MUD THICKENER & WATER CLARIFIER

The Stainless steel Silo has no moving and can recycle 85%-90% of the washplant water. It offers maximum control over mud thickness which is achieved with the addition of flocculant and settlement principles of gravity.

### How does it work?

- Floc is added to waste water which is pumped into the central mixing chamber of the tank
- Flocculation occurs allowing the separation of heavy particles to fall down into the cone section and the clean water to flow into the weir of the overflow channel for reuse back at the plant



### Benefits of the system

- No power consumption
- No moving parts
- Small operational footprint
- Reduced foundation costs
- Reduced flocculant consumption
- Additional sludge storage
- Effective sludge control
- Low maintenance

## AUTOMATIC FLOCC DOSING & CONTROL

**FloccMAX** is a fully automatic system for the preparation, dosing and metering of flocculant for the waste water treatment process.

The flocc dosing rate is continually monitored within the process to ensure optimum settlement rates even with varying silt contents. The stainless steel modular **FloccMAX** tanks can be incorporated into existing water recycling plants or used as standalone systems

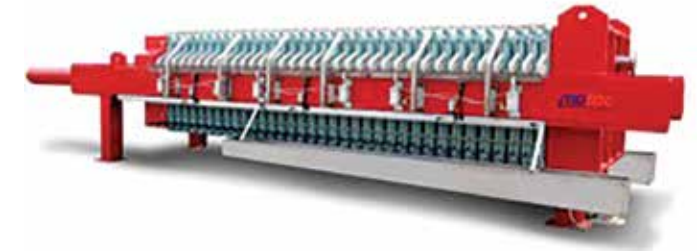


## PLATE FILTER PRESS

A filter press is designed to dewater the sludge (mud slurry) to produce dehydrated stackable silt cakes

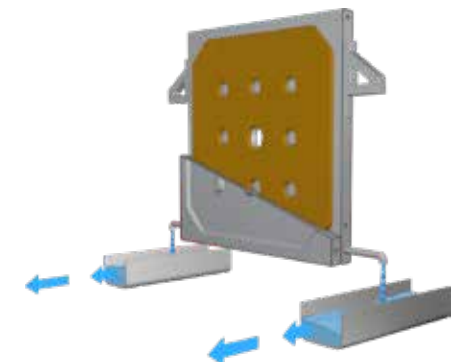
### Filter Press Cycle

- A plate filter press contains a mainframe, polyurethane plates, single or dual piston and an opening and shaking system
- The polyurethane plates have a recessed chamber, single feed port, dual drainage ports and are covered by filter cloths. The plates are pressed together with hydraulic rams under high pressure.
- The HPT sludge pump fills the recess in each plate and forces the water to filter through the cloths and exit the press into a trough for recycling.
- The silt and clay solids are held in the chamber between each plate until the water has drained and a dry silt cake is produced. The press automatically opens and the cakes are discharged.



### Benefits of the system

- Elimination of settling ponds
- Reduced rehandling, maintenance and cleanup costs
- Sludge volume is reduced by 80%
- Recover and Recycle 95% of the total process water
- Fully automated with low running costs



## MODULAR PLANTS

Specifically designed for short to medium term projects enabling fast setup and teardown with zero foundations required. This Portable system is fully containerized and stackable ensuring no ground water is discharged and benefits from a one point hookup for electrical and water.



- Faster Cycle Times
- Drier Silt Cakes
- No Additional Floc Required In Press



Complete custom design Construction and Demolition waste (C&D) and Municipal Solid Waste (MSW) processing systems.

## TROMMEL SCREENS

High performance primary screens to remove fines prior to picking.

- HD trommel screens up to 10' x 40'
- Wheel drive
- Punchplate drums
- Fully enclosed for dust control



## COMPLETE SORTING SYSTEMS

- Feeders
- Conveyors
- Picking Stations
- Magnets
- Eddy Currents
- Blowers
- Optical Separators



## PICKING STATIONS

Multiple picking bay variations to enable the safe separation of the required recoverables such as wood, paper, cardboard and plastics.

- 48" / 60" wide belts
- Optional cabin enclosures



## TRUCK UNLOADERS

Low profile portable drive over truck unloaders reduce handling and reloading costs.

The onboard side ramps and self cleaning hydraulic ramp allow faster setup times, and the variable discharge height conveyor enables multiple discharge options.



Model (belt width)	
42"	1000stph
72"	1500stph



## TELESCOPIC CONVEYORS

HD radial telescopic systems which can be utilized in a range of applications such as organics, quarry and the port loading industry.

The PLC enables consistent fill patterns utilizing all available space.

Options include Genset



	140'		150'		170'		190'
Width	36"	42"	36"	42"	36"	42"	36"
Discharge height	60' 9"	60' 9"	69' 4"	69' 4"	61'	61'	66' 3"
Capacity stph	1000	1500	1000	1500	1000	1500	1000
with optional high lift							



# WASHING RECYCLED MATERIALS: CONCRETE WASHOUT – FILL – RCA – OVERBURDEN

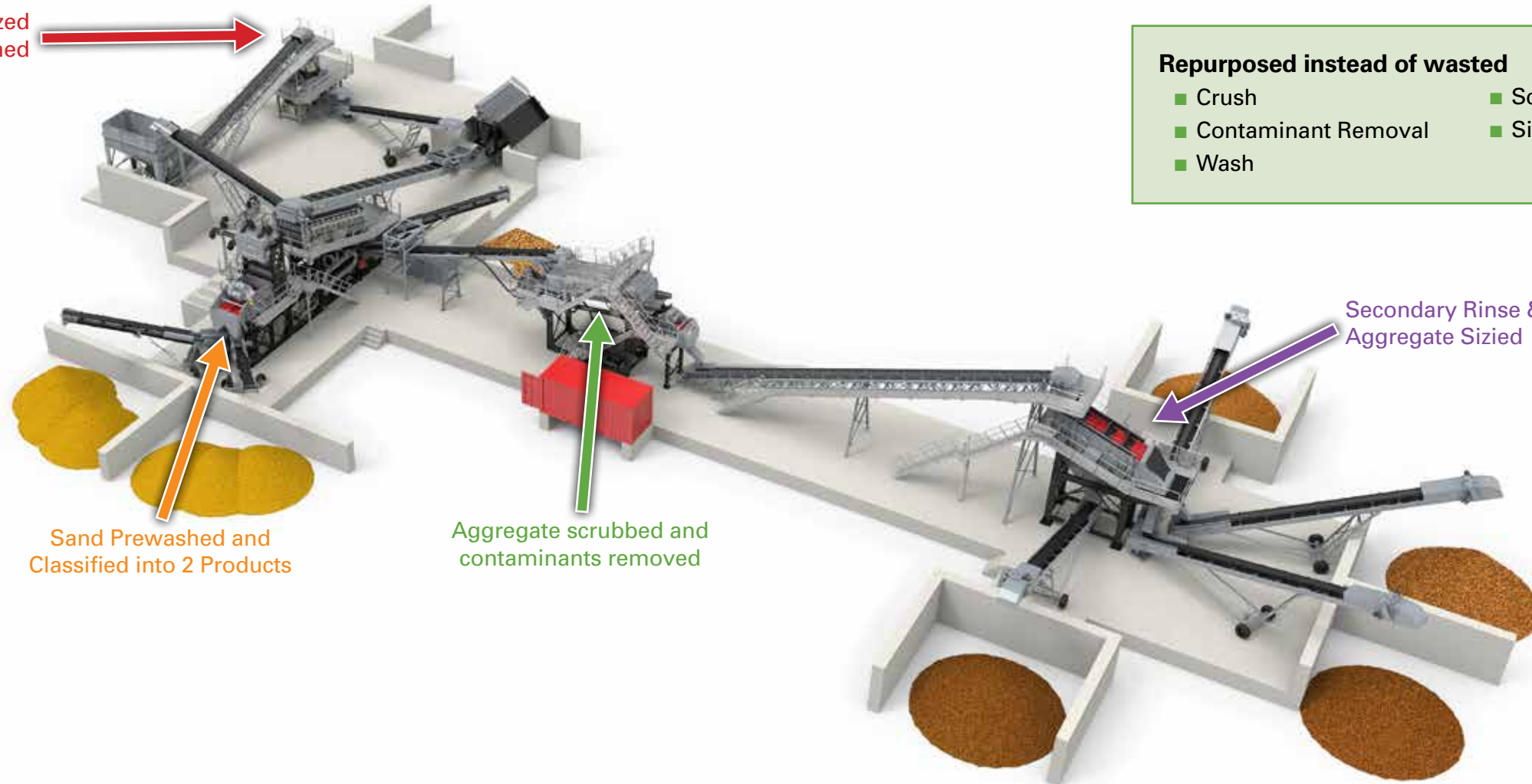
## WASH RECYCLE MATERIAL TO PRODUCE CLEAN AGGREGATES WITH AN EMERALD WASHPLANT

Custom designed 100 – 400tph to suit all recycling applications.

Modular design allows additional equipment to be incorporated into the existing plant to increase production or process heavier clay / contaminated materials.

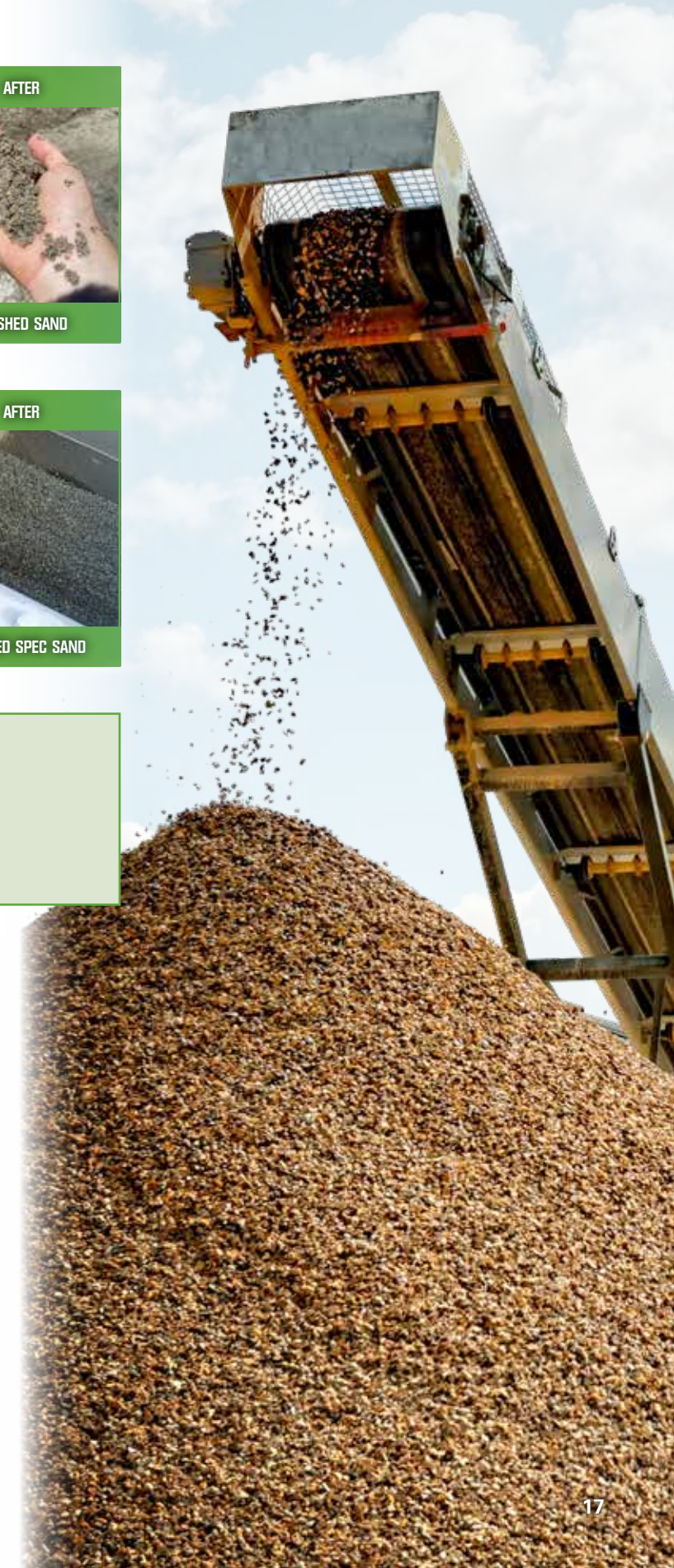


Oversized Recrushed



### Repurposed instead of wasted

- Crush
- Contaminant Removal
- Wash
- Scrub
- Size





## SPARE PARTS

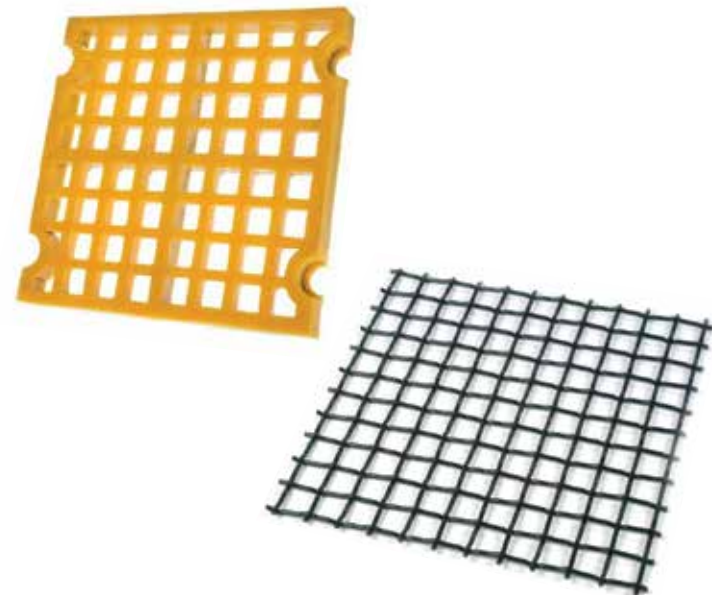
Emerald® design, fabricate and supply a complete range of genuine spare parts that are competitively priced and of the highest quality to ensure maximum productivity of equipment. The knowledgeable product specialists help ensure you receive exactly what you need to get your equipment back on the job quickly and cost effectively.

The **ToughMAX** belting brand promotes longevity with less downtime whilst the custom screen cloths ensures a cleaner product even in the stickiest of applications



With over \$10m of spare parts inventory and dedicated Parts Specialists, Emerald can offer significant savings to the customer and customized aftermarket plans to minimize downtime.

Emerald's expansion now includes a 40,000ft<sup>2</sup> operations facility in PA, to complement their 75'000ft<sup>2</sup> head office in NY. The central position of both facilities enables enhanced service and after market support capabilities within the Northeast corridor.



EES® supply customized screens and belting manufactured inhouse

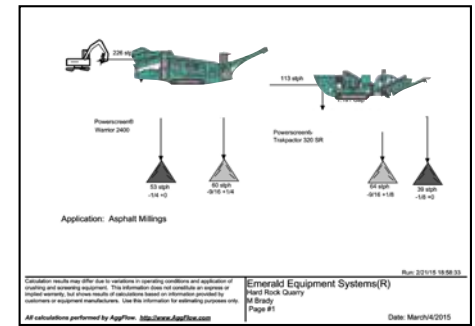
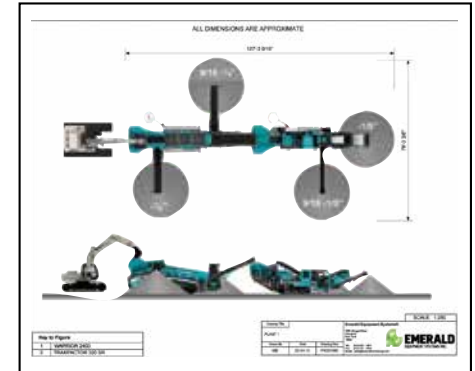


## SERVICE & TECHNICAL SUPPORT

The Aftermarket specialist engineers are committed to supporting every aspect of the operation, from commissioning and servicing equipment to helping you improve productivity and lower operating costs throughout the working life of your machine.

**Fully equipped service trucks allow the factory trained service technicians to be on your site quickly to keep your operations running smoothly whilst offering the best solution to maintain excellent up time of your machine.**

The addition of a spray booth with sand blasting facility, fabrication workshop and an upgraded 10 bay shop allows multiple operations to run concurrently ensuring expedited service.



Our Service Department offers industry leading product knowledge and expert troubleshooting advice.

With a "one call" approach, service scheduling is made easy for whatever your situation requires.

Our in-house billing and warranty departments are ready at any time to assist our customers.





**ScrubMAX<sup>SM</sup>**

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**SandMAX<sup>SM</sup>**

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**CEDARAPIDS**  
A TEREX BRAND

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**ToughMAX<sup>SM</sup>**

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**EMERALD**  
MODULAR EQUIPMENT

**NEW**  
**FOR 2021**



**ScreenMAX<sup>SM</sup> RANGE**

Horizontal 6' & 8' Wet screens



**SandMAX<sup>SM</sup> RANGE**

Single & Dual Sandplants  
PreWash / Double Wash



**ScrubMAX<sup>SM</sup> RANGE**

Logwashers with integrated  
Pre & Post Screen



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