

washing drums



Type CM 18.05 for kaolin/silica sand treatment

Washing drum in pilot plant testing



Washing Drums (Scrubbers) are heavy-duty equipment designed for the vigorous washing of coarse materials and removal of clay-based agglomerates off rocks, gravel and minerals.

Because of their effectiveness and high processing capacity, Washing Drums are especially suitable for use in a variety of applications, such as:

- Aggregates washing of low-quality with adhered clay and high soluble content.
- Liberation of clay and pulping of clay agglomerates.
- Treatment of certain porous minerals.

GENERAL DESCRIPTION

The primary aggregate washing process in washing drums requires a considerable amount of water to ensure that the materials that will later be wet-processed have achieved the degree of preparation, dilution and homogenization required.

In a preliminary stage, the specification and dimension of the Washing Drum required by the operating conditions are analysed in detail. The specified equipment is tailored to the slurry volume and the fine particles content treated inside the drum, taking into consideration the subsequent process stages of comprehensive material washing and classification, hydrocycloning among them. This will ensure that the sand is properly washed with no loss of fines, while as much water as possible is recovered for use in the early stages of the process.

ADVANTAGES OF ERAL WASHING DRUMS

These units feature significant advantages for use in their many applications:

- Robust construction for round-the-clock operation, with drive mechanisms designed for smooth, gradual starting at full load.
- Silent, vibration-free operation with a low dynamic coefficient.
- Long useful life of the tyre assemblies.
- Easy to transport and install at the site, as the unit is supplied in two sections.
- Simple maintenance, consisting primarily of monitoring the oil in the motor reducers.
- Fast and easy replacement of liners, internal drum mechanisms and other parts, as the machine is assembled with standard components readily available on the market.

With its laboratory-scale testing resources and demo/pilot plants for field work, ERAL can simulate processes and extrapolate data for industrial use.

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washing drums



Type CM 37.11 for uranium ore washing



Type CM 20.06 for tin ore washing



Type CM 25.08 for sand & aggregates washing



Type CM 14.04 for silica sand washing

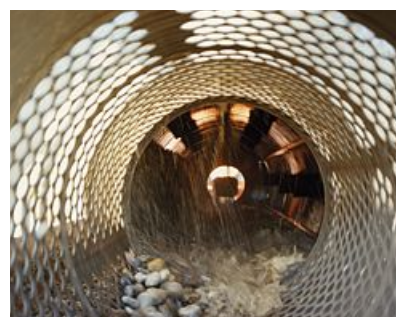
OPERATION

A Washing Drum consists of a tyre-mounted steel plate cylinder or ring that rotates on its axis. It is equipped with a series of internal components that tip and turn the aggregates.

The wet or dry raw material to be treated is fed into one end of the drums for pre-washing and pulping to obtain a homogenized mixture. The lifting bars and forward blades, of different types or arrangements depending on the complexity of the product to be treated, raise and drop the aggregate in cascade manner and move it forward while inside the drum, releasing the fine particles and clay adhering to the coarse fractions.

The stresses to which the material is subjected inside the drum from the friction generated among the aggregate itself, the drum wall and the internal mechanisms produce a self-grinding effect in the coarser fractions, which helps break down agglomerates or clods, especially when the drum is full.

The washing or breakdown effect is directly related to the time the aggregate remains inside the drum, with the treatment capacity decreasing as the residence time increases, depending on the quality of the material to be processed.



Pre-classifying trommel at work

CONSTRUCTION

The **Drum** is manufactured under strict quality control procedures from thick rolled steel plate able to withstand the high mechanical operating stresses. Its interior is protected against abrasion by a removable liner made of steel plate, elastomer or wear-resistant sheet steel, depending on the aggregate to be treated, to ensure a long service life. The drum is equipped internally with a series of forward/extracting blades and lifting bars of different types.

The drum may be built in a parallel flow or counterflow version, depending on whether the water circulates in the same or the opposite direction as the material; the counterflow version is recommended for materials particularly difficult to process.



Type CM 16.04 in stainless steel construction

The **Bedframe** that supports the entire undercarriage and drive system is built of welded laminated steel-beam sections, forming a highly rigid, compact assembly.

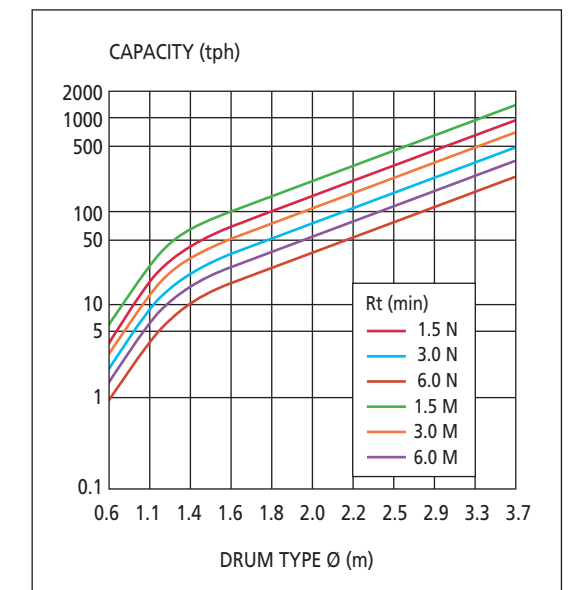


Drive system by motor reducers

The drive wheels are mounted on oversized motor reducers for continuous 24-hour operation, with high load capacity standard tyres specifically approved for this application, forming an independent power unit and thus eliminating torsional movements. The supporting wheels, mounted on fixed axles, equipped with tapered roller bearings and likewise standard tyres, comprise an independent base unit. To prevent axial movement, the drum has rubber-tired guide wheels that rest on the existing transverse discs fitted to the drum.

Where the water used in the process must be separated from the treated aggregate, an optional trommel for

preliminary classification can be supplied as optional, for installation in the material discharge point. This does not preclude the subsequent installation of other equipment for more effective screening.



Type	Power kW	Total Weight		Feed Size Max. mm	Water Cons. m ³ /h	Capacity tph	
		Empty/kg	Loaded/kg			Rt 4 min.	Rt 1 min.
CM 06.02	1.5	522	675	60	10	1	4
CM 11.03	7.5	1214	1992	110	50	6	24
CM 14.04	11	2781	4471	150	100	13	52
CM 16.04	22	3631	5835	170	150	17	67
CM 18.05	30	5354	8845	190	200	27	107
CM 20.06	45	6830	12032	210	300	40	160
CM 22.07	60	8733	16109	230	450	57	228
CM 25.08	88	12895	23791	260	650	84	335
CM 29.09	132	16686	33262	300	1000	128	513
CM 33.10	180	23003	46874	350	1500	185	742
CM 37.11	240	28930	62048	390	2000	258	1000

Capacity values indicated are for products of reasonable quality without plastic clay and large sizing agglomerates.