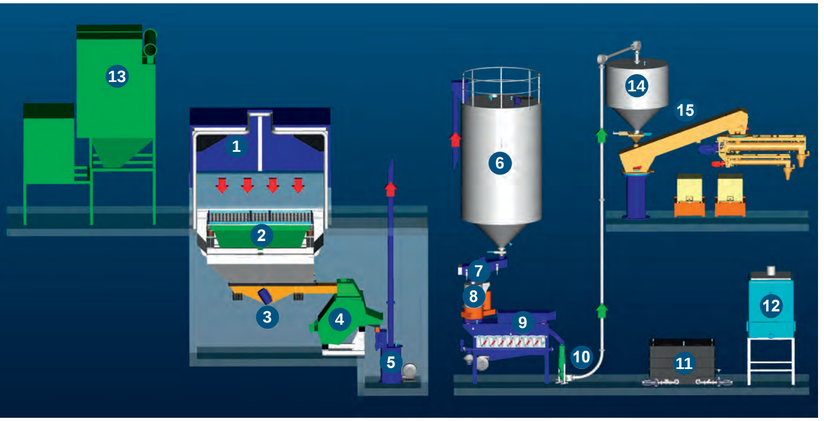
> Layout of a reclamation plant with fluid bed cooler



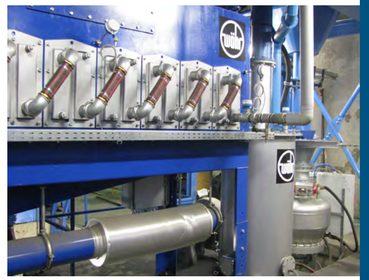
Components

1. Dust and noise enclosure
2. Shake-out grid
3. Vibrating conveyor
4. Vibration crusher
5. Ventilift with magnetic separator
6. Receiving bunker
7. Separating screen with dosing slide
8. Sand cleaner
9. Fluid bed cooling separator
10. Pneumatic sand conveyor
11. Cooling water reservoir
12. Cooling tower
13. Filter system
14. Storage silo mixer
15. Continuous whirl mixer

AAGM Aalener
Gießereimaschinen GmbH

> Reclamation plants
for cold-resin-bonded moulding sands

> Continuous whirl mixers
> Moulding plants



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> Reclamation plants

> Reclamation of cold-resin-bonded moulding sands up to 50 t/h

We plan, design, and manufacture latest reclamation technology for cold-resin-bonded moulding sands. Our reclamation plants are designed such that at least 96 per cent of the reclaimed sand can be reused, thus creating an almost entirely closed environmentally friendly system.

Wöhr reclamation plants are equipped with a Siemens Simatic S7 control and operate fully automatically from the shaking-out of the mould to the storage of the reclaimed sand.

They are characterized particularly by their robust design, performance, durability, economic efficiency, state-of-the-art technology, and environmental friendliness.

> Vibration crusher / lump grinder

In most cases, the sand still contains lumps of various sizes.
These are crushed in the vibration crusher.

The sand passes several screening stages and is transported back to the feeding level of the vibration crusher by means of vibration conveying. This reduces the overall height of the plant considerably and creates space advantages.

Foreign material in the sand that cannot be classified is removed from the system through an automatic discharge flap at the back of the crusher.

> Sand transport

After grinding, cooling, and cleaning, the sand is transported pneumatically into storage silos and is available for the production circuit again.
Depending on the customer's case of application and tasks, we provide various pressure vessel conveying systems. This covers the range from conveyors for hot materials (200°C) to highly-efficient continuous conveyors for bulk material.

If required, new sand can be inserted in the reclaim for refreshment. An almost entirely closed environmentally friendly circuit has been created.

> Environmentally conscious foundry technology

The entire system is noise- and dust-encapsulated and supplies a constant sand temperature, which plays an important role for the subsequent processing and considerably reduces the binder consumption.

Due to the extremely gentle treatment of the sand, our reclamation plants prevent damage to the sand grain.

The reclamation plants are available in versions with a capacity of up to 50 t/h and designed such that optimal results are achieved at the various hourly outputs. The plants are planned based on the existing conditions and requirements and adapted optimally to achieve best possible economic efficiency.

> Magnetic separator / ventilift / separating screen

A magnetic separator is installed before the ventilift to remove the iron particles contained in the sand.

The sand falls onto a permanent magnetic drum and all magnetic parts are separated mechanically from the sand. Permanent magnetic drums are low-maintenance, reliable, and energy-saving.

With the ventilift, the sand is fluidised by feeding in an air stream, and is conveyed vertically into the intermediate bunker. In that process, additional reclamation effects arise such as cooling and dedusting of the sand.

Via the intermediate bunker with the dosing slide located below it and the separating screen, the sand reaches the fluid bed cooling separator.

> 2nd reclamation stage

Due to the technological properties of the binder an additional post-processing process of reclamation can be necessary. A 2nd reclamation stage that intensively work on the grain surface.
As a result, the proportion of used sand in the foundry sand can be increased considerably. The proportion of new sand is reduced and leads to less procurement and disposal costs.

In the cleaner, the grains of sand are accelerated by a rotor and collide. Adhering binder residues on the grain surface rubbed off mechanically. Parts coming into contact with sand are made of highest wear resistance materials.

> Shake-out grid

Shake-out grids are used to unpack the drained moulding box. A stable grid is vibrated with the help of strong motors so that the sand falls off the cast part.

The entire structure is bedded on rubber buffers which absorb a great deal of the dynamic forces from the substructure. It is important here to dimension the shake-out grid correctly so that sensitive cast parts are not damaged but the entire sand falls off the workpiece.

Through the grid the sand gets onto a vibrating conveyor which transports it to the vibration crusher.

> Fluid bed cooling separator

In the fluid bed cooling separator, the sand is fluidised in a continuous process by means of a bottom-up air stream. The thus pressurised sand becomes capable of flowing and flows in the direction of the outlet through the heat exchangers installed in serpentines. Due to the fluidisation, the sand is in close contact with the cooling pipes so that heat is extracted from it very effectively.
The constant outlet temperature of the reclaim is determined by the flow rate control of the sand and the cooling water temperature.
The fluidisation also brings about very good dedusting of the sand. Another advantage is the low construction height of the plant.
It is optionally possible to equip the fluid bed cooling separator with an automatic discharge screw for heavy fractions such as chromite sand, ceramic parts etc.

> Advantages

- State-of-the-art components
- High cooling capacity, constant sand outlet temperature
- Best sand quality due to gentle treatment of the sand
- Separation from all foreign materials
- At least 96 per cent of the sand can be reused
- Low noise load due to noise-encapsulated system
- Low energy costs
- Fully automatic plant, visualised
- Individual customization to your requirements