THIN FILM POWDER

Powder coating for wood

POWDER COATING. GRINDING, COMPACTING & RECYCLING

Minimum cleaning times, maximum system availability

HOSOKAWA MICRON

HOSOKAWA ALPINE

Process technologies for tomorrow.

Typical powder coating products

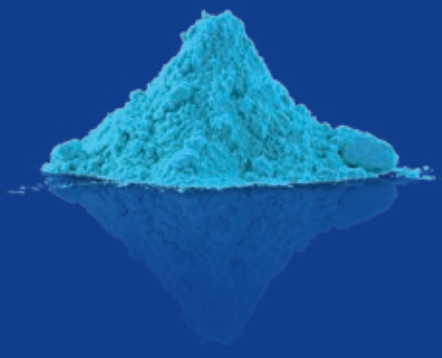
EPOXY RESIN POWDER COATING
POLYURETHANE POWDER COATING
POLYESTER POWDER COATING *(TGIC and TGIC-free)*
HYBRID POWDER COATING
ACRYLIC POWDER COATING
ULTRA-THIN LAYER POWDER COATING

POWDER COATING PRODUCTION OF THE HIGHEST QUALITY

Maschines and systems from our own production

Powder coatings are solvent-free coating materials that have gained a firm foothold when it comes to high-quality industrial surface coating. The grinding process required for production is extremeley reliable due to the proven classifier mills of the ACM series from Hosokawa Alpine.

Since the 1960s, we have been constantly raising the standard for systems and end products. The most recent examples are the NEX systems for unpressurised design or processes for the production of ultra-thin film powder coatings, for example for the furniture and automotive industries. Our machines and systems are manufactured in our own factory in Augsburg and are subject to the strictest quality requirements.



THE ACM EC AND ACM EC-CL CLASSIFIER MILLS

You have the choice:

The ACM EC (Easy Clean) and ACM EC-CL (Classifier Direct Drive) classifier mills were developed to meet frequent demands for minimum cleaning times in the production of powder coatings. This is particularly important in industrial areas where frequent product changes take place or batch production is used. The ACM EC and the ACM EC-CL are customised for these applications. The mill housing is designed as a double chamber system. The grinding chamber lid can be opened safely and quickly at the touch of a button (depending on the size).

After openinig the grinding chamber lid, the inner parts can be easily removed without the need for tools, as they are neither welded nor screwed to the housing. Depending on the size, the inner grinding chamber is composed of several segments, and the individual components never exceed a weight of 25 kg. This makes cleaning and maintenance work with the classifier mills ACM EC and ACM EC-CL especially user-friendly.

IMPRESSIVE ADVANTAGES

- Particularly suitable for frequent product changes
- Cleaning three times faster than comparable mills or older models
- High system availability
- Energy efficient
- Machine condition monitoring
- Classifier gap flushing and cooling
- Highest precision of cut
- Air-cooled grinder assembly
- Automatic lid swivelling device
- Low noise

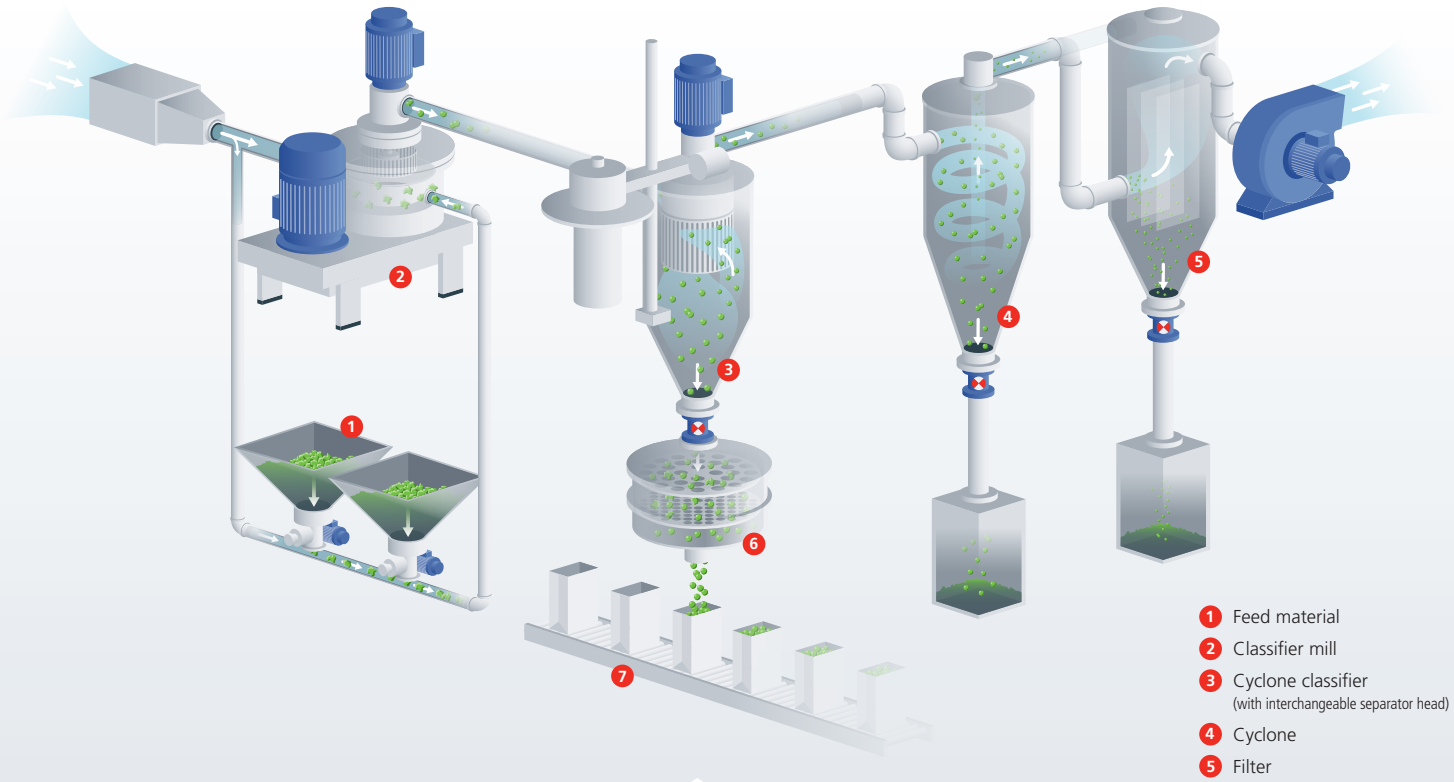
HOSOKAWA ALPINE ENGINEERED, MANUFACTURED & ASSEMBLED in GERMANY

ACM EC

- Vertical product discharge (without fittings)
- Optimised for temperature-sensitive products, products prone to heavy build-up and products subject to abrasion
- Specially-designed for even faster cleaning at the product discharge

ACM EC-CL

- Tangential product discharge
- Direct drive on the classifier
- Optimised for compact installation



ACM system for processing powder coatings with a cyclone classifier (optional) and cyclone

FOR THOSE WHO WANT MORE: CYCLONE CLASSIFIER

The high efficiency cyclone classifiers (HECC) combine the highest coarse material yield with efficient dedusting in classifier operation as well as optimised separation rates in cyclone operation.

ADVANTAGES OF CYCLONE CLASSIFIERS

- New generation with automated lifting-swivelling device
- Easiest change between classifier and cyclone operation
- No fittings, making cleaning quick and simple

ADVANTAGES OF CYCLONE CLASSIFIERS IN OPERATION

- Continuously adjustable reduction of the fine particle content
- Narrow particle size distribution
- Highest precision of cut

THE PERFORMANCE FACTORS AT A GLANCE

ACM	*5*	*10/15*	*20/25*	*30/40*	*60/75*
Nom. air volume [Nm³/min]	(5.5)/8.5	(15)/22.5	(30)/37.5	(45)/60	(90)/112.5
Drive line rotor [kW]	3/5.5	15	22	37/45	55
Nominal throughput [kg/h]	Batch/140	375	625	1,000	1,500

Larger systems available on request

TEST FIRST – THEN DECIDE

Have your special system configuration tested during its planning phase at the ***Hosokawa Alpine Test Centre****.*
More than 60 machines and complete systems as well as test laboratories are at your disposal for this purpose.
The result: You will receive a system concept developed specifically for you. ***Interested? Get in touch with us!***

ACM NEX

With innovative safety concept for powder coating production

The new grinding systems of the ACM NEX series offer numerous advantages of a simplified design – and are ATEX-compliant and tested for explosion-protection. The unique aspect about this concept:
It can be created as a pressureless system by avoiding effective ignition sources. This eliminates the need for pressure shock-resistant system components and their annual maintenance and inspections. This enables even more compact installation and operation of the individual system components, which in turn leads to shorter cleaning times.

IMPRESSIVE ADVANTAGES

- Pressureless design due to avoidance of effective ignition sources
- ATEX-compliant and tested for explosion protection
- Tested by the European certification company Bureau Veritas: Can be used for standard and acrylic powder coatings
- Reduced inspection and maintenance effort
- Easy cleaning and minimal downtime
- Compact installation
- High cost efficiency

- *Certified for all sizes*
- *Standard powder coatings*
- *Acrylic powder coatings*

(ULTRA-)THIN FILM POWDER COATING

Furniture manufacturers in particular rely on ultra-thin film powder coating with layer thicknesses starting from 25 µm. The biggest advantage: more efficient production thanks to optimised levelling properties, reduced material consumption and lower energy costs. ***Want to know more? Get in touch with us!***

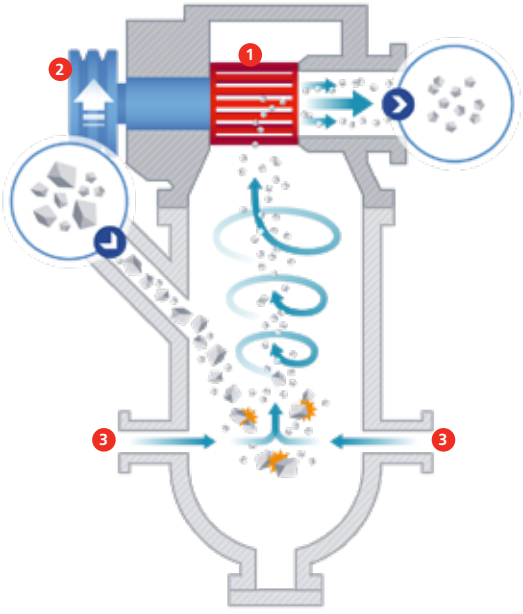
JET MILL AFG

Reduced consumption, increased system performance

With the AFG fluidised bed opposed jet mill, you can achieve an extremely precise and uniform particle size distribution for ultra-thin film powder coatings with a d_{50} < 10 µm and a d_{90} < 20 µm. By producing these special fineness levels on the AFG jet mill, the requirements of continuously advancing surface technology can be met. Thanks to the ultra-thin film powder coatings, thinner powder layers can be applied with completely closed and uniform films, and at lower curing temperatures. This leads to an increase in productivity and a reduction in energy costs.

IMPRESSIVE ADVANTAGES

- For thin-film applications (20–30 µm)
- For temperature-sensitive products
- Maximum fine dust reduction below 10 µm < 2 %
- Narrow and steep particle size distribution: d_{50} <10 µm / d_{99} <20 µm
- Easy cleaning
- High yields
- No increase in temperature
- No grinding elements required
- Low maintenance



1	Classifier wheel
2	Classifier drive
3	Process gas

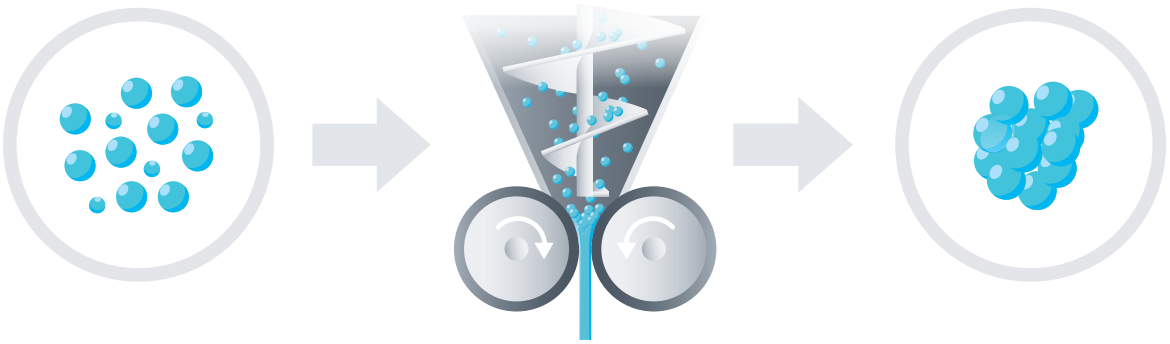
RECYCLING OF FILTER DUST THROUGH COMPACTION

For increased efficiency of your production

The fine dust produced during the manufacture of powder coating can be further processed using compacting tech-nology. The compaction of powder coating on roller presses enables further processing of the fine dust. This inline or offline recycling reduces waste, making your production more efficient.

DRY GRANULATION: FROM POWDER TO GRANULES OR CHIPS

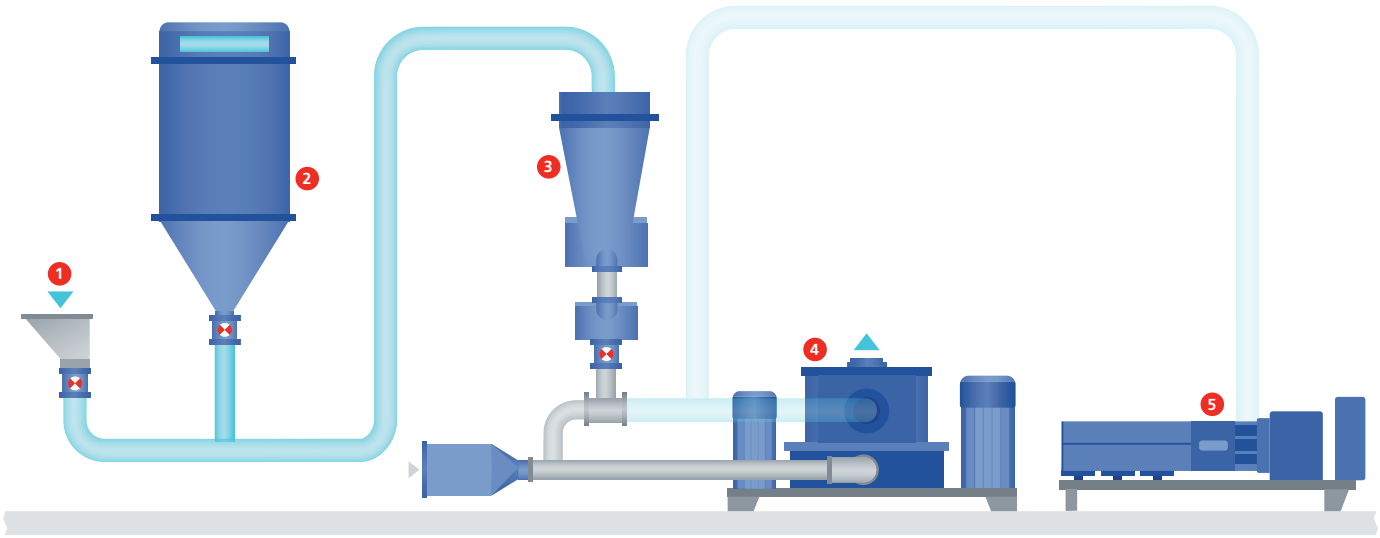
- Compaction of a powder by two rollers rotating in the opposite direction
- Agglomeration occurs through the formation of interparticle bonds under mechanical pressure



COMPACTOR

- APC L, APC K and ARC K series
- For smaller and medium throughputs up to the laboratoy range
- Simple scale-up from laboratory to production plant

FINE DUST FEED | *COMPACTION* | *RECYCLING IN ACM MILL* | OR | *REPROCESSING IN THE EXTRUDER*



1	Big Bag	4	Mill
2	Residual dust filter	5	Extruder
3	Compactor		

COMPACTING, GRANULATING & SIEVING IN ONE PROCESS

The fine dust accumulated in Big Bags can be fed into the feed hopper of the compactor either offline or directly inline from the residual dust filter. An agitator or vibration nozzles above the feeding screw prevent bridging of the fine dust. The horizontal screw can be equipped with a vacuum venting system to increase the efficiency of the screw and the throughput of the compactor. The material is compacted into flakes by two counter-rotating rollers under mechanical pressure. After compaction, it is optionally crushed to the desired chip size or into pellets using a roller crusher and then fed directly into the grinding process or for further processing in the extruder. Depending on the feed material and its particle size, different throughput rates of between 80 and 150 kg/h can be achieved with an ARC L or K series compactor.

WHY COMPACTION TECHNOLOGY? THESE ARE YOUR BENEFITS!

- Sustainability through inline recycling of fine dust
- Bulk density increase
- Stable, dust-free granules within the target particle size distribution
- No post-processing necessary
- Increasing efficiency and minimising waste costs

SYSTEM MODERNISATION?

Contact us!

HOSOKAWA ALPINE BLUESERV

OPTIMISE YOUR SYSTEM AND YOUR PRODUCT

E3-BEATER

- Throughput increase up to 20 %
- Reduced temperature input
- Lower fine dust cotent
- Lower energy demand
- Reduction of oversize grains
- Available for mills designed by a third party

NEW HIGH EFFICIENCY CYCLONE HEC

- Replaces the VME series
- Optimised cyclone geometry for separation efficiencies of up to 99.5 %
- Maximum accessibility for optimising cleaning times: Lid swivelling device, aspiration line
- Product outlet temperature monitoring
- Available as a conversion kit for older systems and systems of other designs

GRAVIMETRIC ADDITIVE DOSING

- Precise additive dosing
- Reduced additive consumption of up to 70 %
- Efficient dispersion and mixing with the end product
- Avoidance of additive agglomerates

BENEFIT FROM THE KNOW-HOW OF THE MARKET LEADER

CLEANING

- Innovative milling and cyclone design makes cleaning even quicker and easier
- Automatic milling and cyclone cleaning in the small batch range

COMPACT AND SAFE IN THE LAB

- Multiprocess system 100 AFG
- Small volume system 100 UPZ

READY FOR THE FUTURE

- Jet milling technology for the production of ultra-thin film powder without temperature input
- Optimised dedusting classifier TSP for steep PSDs

RAW MATERIAL HANDLING

- Fully automated raw material handling

PACKAGING LINES

- Fully automated finished product handling

PROTECTIVE SCREENING

- Vibratory machines from the laboratory to the large batch range

USED SUCCESSFULLY WOLRDWIDE

Global challenges need reliable worldwide solutions. Any time and anywhere. When it comes to powder coating production, with a system from Hosokawa Alpine you can rely highest quality at all times.

- **OVER 700 INSTALLED SYSTEMS**
- **PROVEN TECHNOLOGY FOR POWDER COATING PRODUCTION, MANUFACTURED IN GERMANY**
- **KNOW-HOW FOR A WIDE RANGE OF POWDER COATING CHARACTERISTICS**

Would you like to know more? We look forward to talking to you!

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HOSOKAWA ALPINE

Process technologies for tomorrow.

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Do you have nay questions? We are happy to answer them.

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