Mould Powder Distribution Mechanisms

The spherical mould powders provide outstanding steel quality particularly when used with an automatic feeding device. The PDM300 and PDM250 are state of the art Mould Powder Distribution Mechanisms to precisely adjust and deliver granulated powder at the desired rate into the mould.

Typical installation layout

Main features of PDM300

- Adjustable mass flow rate control
- Adapted for slab and bloom moulds
- Provides real-time powder consumption

Powder Level Sensor:

- Measures the top level of granulated powder
- Strongly resistant to dust or fire

Powder Level Control:

- Controls the powder thickness control
- Data storage and analysis

Main features of PDM250

- Adjustable volume flow rate
- Adapted for bloom and billet moulds
- Mobile unit with “plug and play” installation

More information about those mechanisms can be obtained in their specific brochures.

For more information on this product and on our complete package of solutions please contact our local service center:

VESUVIUS GROUP, S.A.
Rue de Douvrain, 17
7011 Ghlin - Belgium
Tel: +32 65 400 810
Fax: +32 65 311 474
gh@vesuvius.com

VESUVIUS USA CORPORATION
1100 Maple Avenue
Conneaut, Ohio 44030 - USA
Tel: +1 440 596 1161
Fax: +1 440 593 6268

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www.vesuvius.com
Through its Metallurgica Product Line Vesuvius offers mould powders, covering compounds and special exothermic powders. Most are available in the form of spray dried granules.

**What makes our Products unique?**

We focus on two main features to satisfy our customers:

We develop products that are precisely designed to the individual customer needs:

- Vesuvius has more than 9000 individual formulations designed to meet each customer’s highly specific requirements in terms of steel grades and machine features.

Thanks to extensive experience and knowledge of the continuous casting process, our research and development team ensures precisely tailored, top quality and reliable products.

We apply the Total Quality Management at every step of the production that guarantees stability, reliability, and consistent quality of the products:

- Purchase of the best quality raw materials;
- 100% ‘end to end’ quality control: from the reception of the raw materials to the delivery of the finished products;
- Production Processes refined over many years;
- Production with state-of-the-art machinery;
- A reliable delivery of the products to over 300 steel customers worldwide;
- Packing adapted to our customers needs.

Our range of products:

1. **Exothermic Starting Powders: Scorialit E** is used in continuous casting - Features:
   - It minimizes heat loss in the mould for more reliable start of the cast;
   - The rapid slag formation protects the steel from reoxidation and improves lubrication increasing yield at the start of the cast;
   - Being carbon free, this special starting powder is especially suited to ultra low carbon steel grades.

2. **Fine Mould Powders: Scorialit** is a fine-grained mixture which fulfills the following functions:
   - Thermal insulation of the liquid steel surface;
   - Prevention of reoxidation;
   - Lubrication between the strand and the mould;
   - Control of heat transfer between the strand and mould.
   These Fine Mould Powders are available for Slabs, Thin Slabs, Billets, Blooms and Beam Blanks.

3. **Spray-Dried Mould Fluxes: Scorialit SPH and AFAX GR** are spherical granules which fulfill all the same functions as fine powders and offer the following advantages:
   - Minimum dust emission;
   - Better homogeneity and uniformity of mould powder properties;
   - Lower bulk density, for improved thermal insulation;
   - Excellent flowability, for more uniform mould coverage;
   - Safer application by automated feeders.
   These granulated powders are available for Slabs, Thin slabs, Billets, Blooms, Round and Beam Blanks.

4. **Covering Compounds: we offer both granulated and powders, in two types:**
   - Acidic covering compounds by local acid and by acid mixture)
   - Basic covering compounds (e.g. High based and active slag)

5. **Bottom Pouring Powders: Tundish and Scorialit are fine-grained materials. They are tailored to customer requirements, for all current liquid steel grades. These powders are also available in spray dried form.**

6. **Anti-piping Compounds: Equilox is an aesthetic, fine-grained mixture which fills the following functions:**
   - Separation in volume providing very high insulating properties;
   - Thermal insulator to face the top of the ingot;
   - Reduction of ventilation piping, thus increasing yield.
Through its Metallurgica Product Line, Vesuvius offers mould powders, covering compounds and special exothermic powders. Most are available in the form of spray dried granules.

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- 100% “end to end” quality control: from the reception of the raw materials to the delivery of the finished products;
- Production Processes refined over many years;
- Production with state-of-the-art machinery;
- A reliable delivery of the products to over 300 steel customers worldwide;
- Packing adapted to our customers needs.

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- Production with state-of-the-art machinery;
- A reliable delivery of the products to over 300 steel customers worldwide;
- Packing adapted to our customers needs.

Our range of products:

1. Exothermic Starting Powders: Scorialit E is used in continuous casting – Features:
   - It minimizes heat loss in the mould for more reliable start of the cast;
   - The rapid slag formation protects the steel from reoxidation and improves lubrication increasing yield at the start of the cast;
   - Being carbon free, this special starting powder is especially suited to ultra low carbon steel grades.

2. Fine Mould Powders: Scorialit is a fine-grained mixture which fulfills the following functions:
   - Thermal insulation of the liquid steel surface;
   - Prevention of reoxidation;
   - Inclusion absorption;
   - Lubrication between the strand and the mould;
   - Control of heat transfer between the strand and mould.
   These Fine Mould Powders are available for Slabs, Thin Slabs, Billets, Blooms, Rounds and Beam Blanks.

3. Spray-Dried Mould Fluxes: Scorialit SPH and AFAX GR are spherical granules which fulfill all the same functions as fine powders and offer the following advantages:
   - Minimum dust emission;
   - Better homogeneity and uniformity of mould powder properties;
   - Lower bulk density, for improved thermal insulation;
   - Excellent fluidity for non-uniform mould coverage;
   - Easy flow-loading by automatic feeders.
   These granulated powders are available for Slabs, Thin slabs, Billets, Blooms, Rounds and Beam Blanks.

4. Covering Compounds: we offer both granulated and powders, in two types:
   - Acidic covering compounds (e.g. rice ash and fly ash mixtures)
   - Basic covering compounds (e.g. high basic and active slags).

5. Bottom Pouring Powders, Thermotect and Scorialit are fine-grained mixtures. They are tailor made to customer specifications, for all current liquid steel grades and steel grades. These powders are also available in spray dried form:
   - Thermal insulation of the liquid steel surface;
   - Prevention of reoxidation;
   - Inclusion absorption;

6. Antipiping Compounds (CaLox) is an aesthetic, fine-grained mixture which fills the following functions:
   - Expansion in volume providing very high insulating properties;
   - Eutectic reaction to heat the top of the ingot;
   - Reduction of secondary piping, thus increasing yield.

Continuous Casting Ingot Casting
Vesuvius offers a wide range of mould powders, covering compounds and special exothermic powders. Most are available in the form of spray dried granules.

What makes our Products unique?

We focus on two main features to satisfy our customers:

We develop products that are precisely designed to the individual customer needs. Vesuvius has more than 9000 individual formulations designed to meet each customer’s highly specific requirements in terms of steel grades and machine features.

Thanks to extensive experience and knowledge of the continuous casting process, our research and development team ensures delivery reliability and reliable products.

We apply the Total Quality Management at every step of the production that guarantees stability, reliability, and consistent quality of the products:

• Purchase of the best quality raw materials;
• 100% end to end quality control from the reception of the raw materials to the delivery of the finished product;
• Production Processes refined over many years;
• Production with state-of-the-art machinery;
• A reliable delivery of the products to over 300 steel customers worldwide;
• Packing adapted to our customers needs.

Through its Metallurgica Product Line, Vesuvius offers mould powders, covering compounds and special exothermic powders. Most are available in the form of spray dried granules.

Our range of products:

1. Exothermic Starting Powders: Scorialit E is used in continuous casting – Features:
   • It minimizes heat loss in the mould for more reliable start of the cast;
   • The rapid slag formation protects the steel from reoxidation and improves lubrication increasing yield at the start of the cast;
   • Being carbon free, this special starting powder is especially suited to ultra low carbon steel grades.

2. Fine Mould Powders: Scorialit is a fine-grained mixture which fulfills the following functions:
   • Thermal insulation of the liquid steel surface;
   • Prevention of reoxidation;
   • Inclusion absorption;
   • Control of heat transfer between the strand and mould.

These Fine Mould Powders are available for Slabs, Thin Slabs, Billets, Blooms, Rods and Beam blanks.

3. Spray-Dried Mould Fluxes: Scorialit SPH and AFAX GR are spherical granules which fulfill all the same functions as fine powders and offer the following advantages:
   • Minimum dust emissions;
   • Better homogeneity and uniformity of mould powder properties;
   • Lower bulk density, for improved thermal insulation;
   • Excellent fluidity, for uniform mould coverage;
   • Easier application by automatic feeders;
   • Long shelf life, for more flexible use;
   • Lower devolatilisation, thus fewer hazards.

These granulated powders are available for Slabs, Thin slabs, Billets, Blooms, Rods and Beam blanks.

4. Covering Compounds: we offer both granulated and powders, in two types:
   • Acidic covering compounds (e.g. rice ash and fly ash mixtures)
   • Basic covering compounds (e.g. lime-based and active slag).

5. Bottom Pouring Powders: Thermotec and Scorialit are fine-grained powders. They are tailor-made to customer requirements, for all current liquid steel grades. These powders are also available in a spray dried form.

6. Anti-piping Compounds: Exolupu is an aesthetic, fine-grained mixture which fulfills the following functions:
   • Segregation in volume providing very high insulating properties;
   • Exothermic reaction to heat the top of the ingot;
   • Reduction of sudden piping, thus minimising yield.

Continuous Casting Ingot Casting Tundish
Mould Powder Distribution Mechanisms

The spherical mould powders provide outstanding steel quality particularly when used with an automatic feeding device. The PDM300 and PDM250 are state of the art Mould Powder Distribution Mechanisms to precisely adjust and deliver granulated powder at the desired rate into the mould.

Main features of PDM300

- Adjustable mass flow rate control
- Adapted for slab and bloom moulds
- Provides real-time powder consumption

Powder Level Sensor:

- Measures the top level of granulated powder
- Strongly resistant to dust or flame

Powder Level Control:

- Controls the powder thickness control
- Data storage and analysis

Main features of PDM250

- Adjustable volume flow rate
- Adapted for bloom and billet moulds
- Mobile unit with "plug and play" installation

More information about these mechanisms can be obtained in their specific brochures.
Mould Powder Distribution Mechanisms

The spherical mould powders provide outstanding steel quality particularly when used with an automatic feeding device. The PDM300 and PDM250 are state of the art Mould Powder Distribution Mechanisms to precisely adjust and deliver granulated powder at the desired rate into the mould.

Typical installation key:
- Vacuum unit
- Powder bulk bag
- Supply lines
- Dosing unit
- Discharge nozzles

Main features of PDM300 Powder Distribution Mechanism:
- Adjustable mass flow rate control
- Adapted for slab and bloom moulds
- Provides real-time powder consumption
- Powder Level Sensor:
  - Measures the top level of granulated powder.
  - Strongly resistant to dust or flame
- Powder Level Control:
  - Controls the powder distribution system
  - Data storage and analysis

Main features of PDM250 Powder Distribution Mechanism:
- Adjustable volume flow rate
- Adapted for bloom and billet moulds
- Mobile unit with "plug and play" installation

More information about these mechanisms can be obtained in their specific brochures.

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VESUVIUS GROUP, S.A.
Rue de Douvrain, 17
7011 Ghlin - Belgium
Tel: +32 65 400 810
Fax: +32 65 311 474
gh@vesuvius.com

METALLURGICA / VESUVIUS GROUP
Schieferbank 2-16
45472 Mülheim an der Ruhr - Germany
Tel: +49 208 43 466 0
Fax: +49 208 43 466 80

VESUVIUS USA CORPORATION
1100 Maple Avenue
Conneaut, Ohio 44030 - USA
Tel: +1 440 596 1161
Fax: +1 440 593 6268

VESUVIUS INDIA LTD
P104, Taratolla Road
700088 Kolkata - India
Tel: +91 33 240 10 234
Fax: +91 33 240 1

VESUVIUS USA CORPORATION
P.O. Box 4014
1404 Newton Drive
Champaign, IL 61822 - USA
Tel: +1 217 351 5000
Fax: +1 217 351 5031

VESUVIUS ADVANCED CERAMICS CO., LTD
221 Xing Ming Street
China-Singapore Suzhou Industrial Park
Suzhou 215021, JiangSu Province
P.R. of China
Tel.: +86 512 6741 2088
Fax: +86 512 6741 1700

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