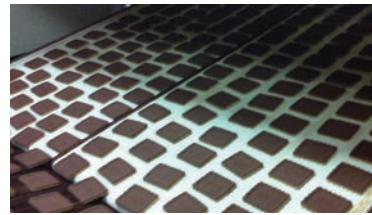


Electrostatic Application on Biscuits

All sugars, cocoa and even cocoa/sugar mix can be efficiently applied on biscuits, with significant savings and quality improvements.

Production data:

- Belt width: 500-1500 mm
- Belt speed: 5 - 15 m/min
- Powder quantity: 0,5 – 1,5 g/product



Cocoa

Applied powders:

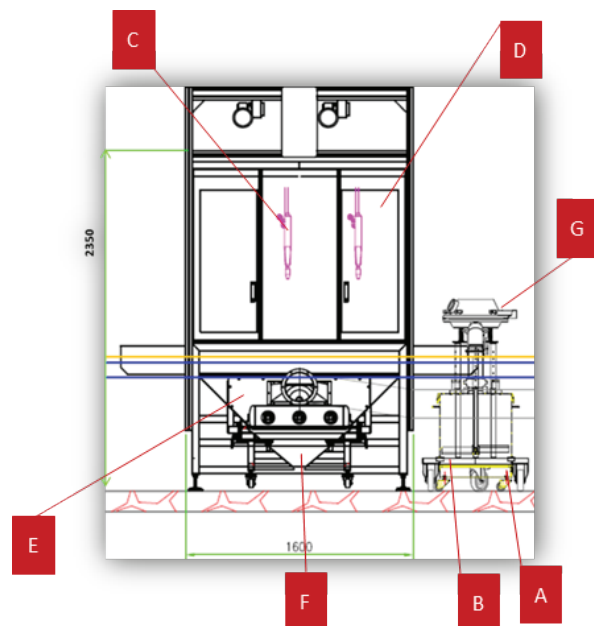
- Sugar
- Encapsulated sugar
- Granulated sugar
- Icing sugar
- Cocoa
- Sugar / cocoa mixture



Icing Sugar

Operating Principle Example

- The powder is loaded into the hopper (A). Venturi pumps (B) transport the powder to the electrostatic guns (C) that apply it on the products.
- The application takes place in a powder booth (D) which is kept in depression by an air extraction system and filter.
- The powder that is not applied on the product falls on the belt (E) and is recovered through a hopper (F) and sent back via the sieve (G) into the hopper (A).
- In the booth the products are automatically turned to allow the application of the powder on all surfaces.



Process Improvements

- Thanks to the excellent adhesion on the products, powder losses during packaging are drastically reduced, resulting in:
 - Reduction of cleaning / maintenance time
 - Lower risk of packaging problems
- The application takes place in a depressurized booth that prevents powder escaping to the ambient, resulting in:
 - Reduction of contamination
 - Reduction of cleaning / maintenance time
- The powder that is not deposited on the products can be recovered, sieved and immediately reused, resulting in:
 - Improved process stability
- Application before baking is possible, resulting in:
 - No powder losses in the oven
 - Reduced cleaning and maintenance time



Quality Improvements

- Results are easy to reproduce: the amount of applied powder can be easily and precisely adjusted and remains constant for the whole production.
- Thanks to the excellent adhesion on the products, electrostatic application allows the creation of new products.



Powder savings

- Significant decrease of powder losses:
 - On the conveyor belt
 - In the oven
 - In the pick & place process
 - During packaging
- 20% - 35% powder savings have been achieved in several installations



Without electrostatic



With electrostatic

Gema Switzerland reserves the right to make technical changes without prior notice!

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