COLIBER® POWDER COATINGS

TECHNICAL DATA SHEET

Type of coating	**PA - POLYESTER POWDER COATINGS**	
Color	RAL 3004	
Symbol	PA142/0/5141/11	
Surface	Coarse structure	
Gloss level	Semi-gloss	
Characteristics	- Outdoor, industrial application - Very good weather and UV resistance - Very good chalking resistance - Very good covering power - Decorative and protective effect - Very good mechanical resistance	
Applications	Agricultural machinery, furniture and garden tools, machine casings, mailboxes, etc.	
Powder properties	**Particle size (Malvern)**	Fine powder suitable for electrostatic spray (corona) and tribocharging (tribo).
	Density (g/cmł) ISO 8130-2	1,593
	Theoretical coverage (m²/kg)	~7 by the film thickness 90 µm and 100 % use of powder coating.
	Storage stability	24 months from the date of production, in the orginal, unopened package, keep away from heat sources, in the temperature of 5 – 25°C, protect from moisture. No direct sun exposure. The product should be stay at ambient temperature (paint shop) 12h before use.
Coating film tested in lab conditions on: steel panel	**Thickness** ISO 2808	recommended 90-120µm
	Gloss (60°) ISO 2813[1] VISUAL[2]	gloss
	Cross cut ISO 2409	0
	Mandrel bending ISO 1519	<5 mm
	Erichsen cupping ISO 1520	>5 mm
	Impact resistance ISO 6272-1	front >50 kg/cm reverse >50 kg/cm
	Buchholz hardness ISO 2815[3]	n/d
	Pencil hardness ISO 15184[3]	n/d

(1) applies to smooth and no metallic coatings film
(2) applies to structural and metallic coatings film
(3) not applicable structural coatings film

EKO-COLOR
Eko-Color Sp. z o.o.
St. Sucharskiego 2, 77-100 Bytów, Poland
Tel. +48 59 822 22 22, e-mail: info@eko-color.pl

TECHNICAL DATA SHEET

Surface pretreatment	- The overall quality of the coating film depends on the type and quality of the pretreatment. - Surfaces must be dry, degreased and free from rust and other contaminants. - In order to improve coating adhesion to the surface and improve resistance it is recommended: aluminium - chromating, chrome-free pretreatment or anodic pretreatment. steel and galvanized steel - individual choice of surface pretreatment (e.g. phosphating). - However, in order to achieve optimum results, you must follow the instructions and recommendations of the pretreatment material manufacturer.
Application	- Electrostatic gun - corona (recommended voltage - 60 kV) or tribo gun. - In case of use tribo gun a flattened structure is obtained. - Application parameters depend on the geometric shapes of the detail and the film thickness to be reached. - Responsibility for the correct application parameters lies on the coating applicators. - Despite careful production methods, slight deviation of color and effect between the different manufacturing batches may occur (typical for powder coatings). - Various application parameters may cause color/effect changes. - Proper grounding of application equipment and coated elements helps to keep repeatability of the obtained color/effect. - It is recommended to do the entire order on the same equipment, with the same application parameters - Not be mixed with other powder coatings. - Control the air speed during application of powder coatings. - Keep the appropriate distance: the gun - coated elements. - Keep a uniform thickness of coating.
Curing conditions	- Curing time recommendation in a convection oven: **180°C/10min.** **170°C/15min.** (object temperature) - Must be strictly observed parameters of stoving the coating film to ensure that the full mechanical and chemical properties. - Suitability of the product for stoving in gas ovens and radiant ovens should be verified - may be a significant difference in color - perform a comparative test with the standard color (please contact us for details).
Approvals	- The powder coatings are in compliance with 2011/65/EC and 2015/863/EC (so called ROHS). - Heavy metal and TGiC free.
Technical recommendations	- In the case of cleaning powder coated surfaces it is necessary strict compliance with the Technical recommendations 01: Cleaning of powder coated surfaces. -Detailed information of the usage of the product are in the Technical recommendation 06: The use of powder coating with medium and coarse structure.
Comments	- To print, to glue, to label, to laminate with foil, over-coating or any other post-treatment, some preliminary testing is recommended. - Powder-coated details should be packaged after being completely cooled down to ambient temperature, into appropriate packaging materials previously tested by the user. - Packaged details should be stored under cover to avoid condensation, which may result in traces on the finished coating.
Safety Data Sheet	POLYESTER POWDER COATINGS PA, PA/FP
Edition / date	1.1 / 2025-04-25

The above values may vary depending on the type of surface pretreament, color, gloss, texture, etc.
All informations included in this card are based on our experience and actual knowlegde and do not release the user from carrying out their own tests. If in doubt please contact us for details. Having no influence on the use and application conditions, we can take responsibility only for the quality of any the product and ensure that it fits to our standards.
This Technical Data Sheet is revised periodically. EKO-COLOR reserves the right to change specifications without notice.
If necessary, our sales department will confirm the validity of this document.

EKO-COLOR

TECHNICAL RECOMMENDATION 06:
THE USE OF POWDER COATING WITH MEDIUM AND COARSE STRUCTURE

1. Description

Powder coatings are thermosetting products designed for painting metal elements for protection and decorative purposes. The coatings have a relatively coarse and visible texture.
The purpose of this product data sheet is to facilitate the work for painters who use powder coating easier and to describe the key stag

2. Substrate preparation

When applying coarse-textured powder coatings, it is essential to carefully clean the substrate. Greasy surfaces or surfaces contaminated with foreign materials cause defects in the finished coating or make it impossible to achieve the desired texture.

3. Application

- Medium and coarse coatings should be applied by electrostatic spray painting (corona). Application settings are determined by the paint shop staff.
- When using a tribo powder coating gun, a flattened texture is achieved. This type of application must always be verified in advance in order to assess the final visual effect.
- Changes in the application method (from corona to tribo and vice versa) lead to significant differences in the final result.
- It is necessary to finish the entire project using the same equipment and maintaining constant application parameters.
- Based on observation, application with equipment of different manufacturers yields different final results.
- Different types of application, equipment, application parameters and shapes of elements affect the coating effects.
- The optimum effect is achieved when the distance between the applicator and the coated element is sufficiently large (approx. 30 cm), while maintaining a constant and even coating thickness.
- A constant supply of powder coating to the applicator must be ensured. The use of fluidised-bed powder feeders is recommended.
- The entire system and coated elements must be properly earthed.
- The final appearance of the texture (size and type) depends to a large extent on the thickness of the applied coating.
- For an even texture, an average thickness of 90 - 120 µm is recommended.
  Details are specified in the data sheets of the respective products.
- When applying medium and coarse powder coatings, variations in coating thickness on individual elements of the structure should be avoided in order to maintain a uniform appearance of the coating.
- It is very important to ensure cleanliness of the entire coating system, including guns, hoses, etc. before filling it with powder coating or when changing to a different type and colour of powder coating, in order to avoid contamination of the structure with a different colour (mainly when changing from smooth powder coating to medium and coarse one) or coating defects in the form of craters, pinholes, orange peel (mainly when changing from coarse-textured powder coating to a fine one). In both cases, the defects are highly visible on the structure.
- In addition to thorough cleaning of the system, during daily operation, maintenance works recommended by the system manufacturer (e.g. cleaning of powder supply lines, nozzles, electrodes) should be carried out and worn parts replaced at appropriate intervals.

4. Recovery

- Medium and coarse powder coatings are not designed to be recovered to the same extent as fine-textured coatings.
- In principle, coarse-textured coatings should not be recovered, which will prevent irregularities in the final appearance.
- If recovery is required, an adequate dosage of recovered powder in relation to fresh powder should be ensured. The amount of recovered powder should be kept to the minimum, and optimal mixing with fresh paint should be ensured. The responsibility for achieving an acceptable and reproducible result lies with the paint shop.
- When working with recovered powder coating, frequent inspections are necessary to check the appearance of the result.
- The use of recovered powder alone or repeated recovery of powder is prohibited.
- It is good practice to prepared tolerance models before launching production and use them throughout the process to verify the final appearance of the result.

5. Curing conditions

- The recommended curing parameters must be strictly adhered to. The curing time is counted from the moment the element is heated to the set temperature.
- Uniform temperature distribution in the oven is required to achieve a homogeneous texture of the coating.
- In order to determine the required curing parameters, it is always advisable to carry out tests under production conditions adapted to the element and the oven (it may be helpful to prepare a temperature profile of the oven using a suitable instrument).
- In the case of medium and coarse powder coatings, the element must be placed in the oven which has been preheated to the required temperature (the temperature should not be lower than 130°C).
- The curing time depends on the heat capacity of the elements (the design of the elements, their shape, size, thickness and quantity is important) and the temperature parameters in the oven. It is up to the paint shop to adjust the required heating parameters to the element/structure.
- Excessively slow curing of the element in the oven will result in a failure to achieve the desired texture.
  Excessively short curing time or curing at excessively low temperature results in coatings with an undeveloped and/or flattened texture,
- excessively high gloss and insufficient mechanical properties.
  Excessively long curing or curing at excessively high temperature may result in colour changes, yellowing and matt coatings, especially in the
- case of matt structures.
- Depending on the heat capacity of the elements and the temperature parameters in the oven, different and uneven textures can be achieved.
  Differences in curing conditions should be avoided, which means that thin-walled elements should be coated separately from thick-walled ones
- in order to achieve a reproducible coating appearance.

6. Summary

- The application of medium and coarse powder coatings requires constant control during the process, as well as ongoing verification of the results with the model.
- The application of medium and coarse powder coatings should always be carried out using the same equipment and the same application
- parameters.
- It is essential that the coated elements and the entire coating system are properly earthed.
  In the case of medium and coarse powder coatings, the element must be placed in the oven which has been preheated to the required
- temperature (the temperature should not be lower than 130°C).
- When changing the powder coating, all powder feeding or recovery parts of the coating system must be carefully cleaned.
- Recovery of coarse-textured powder coatings is not recommended.

7. Storage conditions

Store in accordance with the parameters specified on the packaging label and product data sheet, in the original, unopened packaging, away from heat sources and moisture, at 5-25°C. The product should be kept at room (paint shop) temperature for 12 hours before use.

IThe information provided herein is based on our experience and the current state of the art. It is presented in good faith with the intention of being of practical use, but does not release the user from the responsibility to carry out own tests. The document is periodically updated. Eko-Color reserves the right to change technical data without prior notice. If necessary, the sales department will confirm the validity of this document.
In case of using products with certificates or approvals, the guidelines of relevant associations must also be observed.
version 1.0 dated 23.05.2022