

Application Guide for
Jotun Reveal Edge D / W



Application Guide for Jotun Reveal Edge D / W Powder Coatings

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1.0 Introduction

This document provides guidelines for the factory application of Jotun Reveal Edge D / W Powder Coatings for the aesthetic performance along with chemical and mechanical resistance requirements for ferrous substrates.

2.0 General overview

Jotun Reveal Edge D / W Powder Coatings are range of bonded metallic powder coatings designed for indoor appliances and furniture to provide outstanding colors and finishes.

The critical steps that must be controlled are:

- 1) Surface preparation and pre-treatment
- 2) Drying
- 3) Powder Coating Application
- 4) Curing
- 5) Final inspection and quality control

3.0 Scope

The Application Guide offers product details and recommended practices for the use of the product.

The data and information provided are not definite requirements. They are guidelines to assist in smooth and safe use, and optimum service of the product. Adherence to the guidelines does not relieve the applicator of responsibility for ensuring that the work meets specification requirements. Jotun's liability is in accordance with general product liability rules.

The Application Guide (AG) must be read in conjunction with the relevant specification, Technical Data Sheet (TDS) and Safety Data Sheet (SDS) for all the products used as part of the coating system.

4.0 Safety considerations

Safety is of utmost importance in any powder coating application plant. Proper maintenance of equipment and good housekeeping must always be on the list of the daily, weekly and monthly routines of any powder coating application plant. Suitable PPE (Personal Protective Equipment) should always be worn in the powder application line.

Please refer to relevant Jotun product SDS for further information.

5.0 Surface preparation and pre-treatment

Proper attention should be given to the cleaning and preparation of the ferrous components.

The ferrous substrate shall be suitable for pretreatment and the coating process. It should allow the coating properties to perform as specified in the relevant TDS for Jotun Reveal Edge D / W as well as other properties specified for these systems. The substrate must be bare clean, free from corrosion, and not exposed beforehand to any anodic or organic coating.

There must be no sharp edges. The edges radii must allow the coating to completely cover the whole object surface to ensure adequate film thickness and prevent holidays.

5.1 Handling

5.1.1. Components or objects must be carefully handled. Avoid contamination with dust, oil, fat, finger marks, etc.

5.1.2 Care should be taken to secure a proper treatment of the total area.

5.2 Pre-treatment

5.2.1 Iron Phosphate and Zinc Phosphate

It is recommended that the following pre-treatment is performed. Moreover, always follow the chemical supplier's recommendation.

- a) Degreasing
- b) Rinse
- c) Rinse (possibly activation)
- d) Rinse
- e) Phosphating
- f) Rinse
- g) Rinse (possibly with passivation), using demineralized water (the last running water from the object should be tested at 20°C. The readings should be below 30 μ Siemens/cm).

The chemical deposition of the phosphate conversion layer should be as per supplier's recommendation.

5.2.2 Nano-technology pre-treatment

Suitable nano-technology pre-treatments are also recommended. Moreover, nano-technology pre-treatment are environmentally friendly. However, due to the variety of nano-technology pre-treatments available today, detailed advice should be sought and followed from the pre-treatment supplier.

The chemical deposition of the conversion layer should be as per supplier's recommendation.

5.2.3 E-coat pre-treatment

Suitable E-coat can also be used. However, due to the variety of e-coat systems available today, detailed advice should be sought and followed from the pre-treatment supplier.

6.0 Drying

Pre-treated ferrous components should be dried in an oven. It is recommended that the maximum object temperatures in the drying oven < 100°C. However, it always advisable to follow and perform the process as per chemical supplier's written instructions.

7.0 Powder Coating Application

Pre-treated ferrous components should never be handled with bare hands.

Pre-treated ferrous components are to be immediately transferred to the coating process in a clean and dry state to avoid deterioration of the pre-treatment integrity. Pre-treated components should be powder coated within 16 hours.

A single coat application should be undertaken in one operation, to a minimum film thickness of 60 microns for exposed areas. Sparkling products will require a higher dry film thickness to optimize hiding power.

Jotun Reveal Edge D / W have high chargeability during the corona application. It is recommended to start the corona application of 60 KV and 15 μ A on the application current. Spraying application parameters may be adjusted to achieve the final coating requirements.

It is advisable to quality assure the reclaim powder prior to use. Sieving equipment is recommended to break any agglomeration and remove any foreign matter in the reclaim powder. It is recommended that reclaiming is done automatically. Virgin to reclaim ratio needs to be closely monitored. Normally, the ratio of reclaim to virgin should not exceed 30%.

For the application of Jotun's Metallic and Special Effect powder coatings, please refer to Jotun's Application Guidelines for Metallic Powder Coatings.

For optimum powder coating application process, it is recommended that grounding measurements are conducted on a regular basis. Resistance to ground should always be < 1.0 megaohm

8.0 Curing

Objects once powder coated, should be cured as soon as possible otherwise, the risk of airborne contamination will be high.

The powder coating must be cured as specified by Jotun Powder Coatings for Jotun Reveal Edge D / W TDS.

It is recommended to conduct a weekly oven test. The temperature is best obtained by measuring it at the thickest wall of the object whilst the oven is fully loaded.

The air temperature in the curing zone must not deviate from the adjusted nominal temperature by more than $\pm 10^{\circ}\text{C}$.

8.1 Post Cure Handling

Coated ferrous components should be cooled to below 40°C before handling. Precaution

should be taken to avoid damages on the finished coating during stacking, packaging, storing and transportation.

9.0 Final inspection and quality control

Thorough inspection and coordination with the other application steps are essential for a quality coating. Inspection should be considered as part of the process control operation and not just a decision point for approving or rejecting coatings. If each processing step is done correctly, a high coating quality is assured.

Regular quality control tests after the curing process include, but not limited to, film thickness, visual color assessment, adhesion and other mechanical properties and physical appearance of the coating. Cure test can be carried out using the MEK (Methyl Ethyl Ketone) test.

10.0 Packing

Special care must be taken when loading and unloading the coated components and objects.

To prevent any damage during transportation each coated object, or component, should be packed individually and isolated from other objects or components by crepe paper, with a weight of 150 grams/m², or other suitable cellulose based packaging. Additionally, polyolefin packaging can also be used.

It is the responsibility of the powder coating applicator to quality assure the use of any packaging materials prior to any use.

If coated ferrous components are wrapped with any plastic sheet, these coated ferrous components must not be subjected to high heat (>70°C) or high humidity (>80%) or direct sunlight.

Regular adhesive tapes should never come into direct contact with the coating.

Should protective tape be required, then only tape designed for the protection of coated steel must be used. No residue of any nature should be left on the finished product.

The suitability of any packaging material for protecting coated substrates must be quality assured by the applicator prior to use.

Note: The information on this Application Guide is given to the best of the manufacturer's knowledge, based on laboratory testing and practical experience. Jotun Powder Coatings reserves the right, without notice, to alter or change the content of this Application Guide.

Jotun Powder Coatings. October 2019.

THIS APPLICATION GUIDE SUPERSEDES ALL PREVIOUSLY ISSUED VERSIONS