

Definitions

The ApplicatorThe Coater/The Client/The BuyerThe SellerJotun Powder CoatingsThe End UserOwner or responsible party for completed coated objects

Jotun Powder Coatings' products used for coating aluminum façades are supplied with a product warranty (please refer to the relevant Product Data Sheet).

By conforming to Jotun Powder Coatings' "Recommended Process and Process Control Requirements for Architectural Aluminum Alloys' Coating" (please refer to Part 2 of this document), **The Applicator** ensures the ability to meet **The Seller's** technical specifications.

During construction and assembly work, the coated objects must be protected from any mechanical damage, cement or concrete spillage. Direct contact with unapproved adhesives, cleaning materials, acids and other aggressive cleaning procedures should be avoided.

It is the responsibility of **The End User** to ensure that necessary maintenance, both in terms of damage repair and general cleaning, is carried out properly (please refer to *"Powder Coated Façades' Maintenance"* in Part 3 of this document).

1. WARRANTY SCOPE

The Seller guarantees that the products covered by this warranty are delivered to **The Applicator** to the specifications quoted in the respective Product Data Sheet. The warranty is based on the assurance that the three key areas of gloss, light resistance and weather resistance, as delivered to **The Applicator**, will conform to the following standards:

1.1. Gloss Degree

At the time of delivery of the powder material to **The Applicator**, the gloss degree (measured according to DIN 67530 using an incidence angle of 60 degrees) will be within the tolerances specified in the respective Product Data Sheet. Gloss measurements are to be taken after the film has been cured at the recommended curing schedule. Any gloss reduction during on site exposure ought to occur evenly over the surface without adversely affecting the uniform appearance of the object coated.



1.2. Light Resistance

At the time of delivery of the powder material to **The Applicator**, the light resistance measured with Wool Scale Pattern 7 or greater according to DIN 54004, and if applicable a valid continuance of this. Any change in the shade of the coating ought to occur evenly over the surface without adversely affecting the uniform appearance or decorative impression of the finish.

1.3. Weather Resistance

At the time of delivery of the powder material to **The Applicator**, the weather resistance measured with "Grey Scale" according to DIN 54001, and if applicable any valid continuance of this.

Corro-Coat PE-F "Grey Scale" 3 or greater after 1,000 hours QUV-A. Corro-Coat PE-SDF "Grey Scale" 3 or greater after 3,000 hours QUV-A.

2. WARRANTY VALIDITY

The warranty is applicable to the powder material, conditional to substrate material, surface preparation, and application and maintenance procedures as detailed below. However, the warranty is valid only when there is a signed agreement between **The Seller** and **The Applicator**.

3. RESPONSIBILITY AND LIABILITY

- 3.1. This warranty will come into effect subject to the terms, conditions and provisions specified herein and in the agreement signed by **The Seller** and **The Applicator**, when it can be established that failure of the coating performance is due to non-conformance of the powder material with the specifications listed in the corresponding Product Data Sheet.
- 3.2. The warranty will cover on-site repair of coating deficiencies resulting from such non-conformance with the respective products' specifications covered by this warranty.
- 3.3. **The Seller** will, by arrangement, pay for the powder material, work and travel expenses necessary to correct, in the opinion of **The Seller**, such deficiencies on the agreed upon building or object.
- 3.4. The Seller will not support agreements whereas The Applicator may have entered into, concerning coated objects that require The Seller's products to meet standards or properties beyond the specifications for the products covered by this warranty.
- 3.5. Any damages paid based on any claim or series of claims against The Seller as a result of deficiencies in the consignment whatever the legal background will be to a maximum of the value of the powder coatings supplied by The Seller for a project and will not exceed 2.5 million Norwegian Kroner (MM NOK), (covering products and/or repair work).
- 3.6. The warranty will in no case exceed the sum for which **The Applicator** is liable to their customer.



3.7. To make allowance for fair wear and tear of the coating, the warranty cover will be reduced for claims permitted by the warranty as shown in the table below:

| Warranty Validity | Time period covered by the warranty | MM NOK |
|--------------------|-------------------------------------|--------|
| | year 1 - 5 | 2.5 |
| (25-year warranty) | year 6 - 10 | 2 |
| | year 11 - 15 | 1.5 |
| | year 16 - 20 | 1 |
| | year 20 - 25 | 0.5 |

| | year 1 - 3 | 2.5 |
|--------------------|--------------|-----|
| (15-year warranty) | year 4 - 6 | 2 |
| | year 7 - 9 | 1.5 |
| | year 10 - 12 | 1 |
| | year 13 - 15 | 0.5 |

| | year 1 - 2 | 2.5 |
|--------------------|-------------|-----|
| (10-year warranty) | year 3 - 4 | 2 |
| | year 5 - 6 | 1.5 |
| | year 7 - 8 | 1 |
| | year 9 - 10 | 0.5 |

- 3.8. The above mentioned time frames apply to the date on which the powder material is delivered to **The Applicator**.
- 3.9. The Seller has no liability, other than the above, for loss or expenses, consequential costs, third party expenses, or other claims.

4. TERMS AND CONDITIONS

- 4.1. The warranty is valid only when coating architectural aluminum substrates, and only where the surface preparation, application and maintenance procedures are in compliance with a valid revision of Jotun Powder Coatings' Technical Information (please refer to Part 2 of this document "Recommended Process and Process Control Requirements for Architectural Aluminum Alloys' Coating" and Part 3 "Powder Coated Façade's Maintenance").
- 4.2. Approved Applicators under the GSB or Qualicoat quality schemes who conduct their surface preparation, coating application, testing and documentation according to the respective GSB or Qualicoat procedures, will be considered as being in conformance with the conditions for correct coating.
- 4.3. This warranty is valid only for coating on aluminum or aluminum alloy substrates suitable for the coating process and which, in the form of test panels, allow the properties to comply with the technical data given in the respective Product Data Sheets covered by this warranty.



- 4.4. In the event of a claim under this warranty, **The Applicator** must produce documented evidence that the type of substrate, the surface preparation, the coating application and the maintenance of the finished object fulfils the provisions set forth.
- 4.5. Personnel from **The Seller**, or its affiliated companies, will, at their own discretion, be allowed to inspect the coating operation (including surface preparation and curing), testing facilities and procedures and all appropriate records and documentation.
- 4.6. The Seller, or its affiliated companies, will incur no liability whatsoever in the event that any one or more of the following circumstances shall occur:
 a) The storage of the powder material has not taken place according to The Seller's guidelines, or the powder material has been stored for a longer time than specified by The Seller or a supplier.

b) The powder material has been used on objects that are not suitable for coating or were not properly prepared for the coating job.

c) The defects or failures of the coating system occurred, or resulted from transport or assembly damages.

d) The defects or failures of the coating system resulted from construction site conditions, including, but not limited to, welding, insulation, concrete and facing work, unsuitable washing or cleaning process, etc.

e) The defects or failures of the coating system resulted from galvanic corrosion due to the combination of different types of substrates.

f) The defects or failures of the coating system occurred on less than 5% of the total coated surface.

g) The coating system has been exposed to heat other than that resulting from normal ambient conditions and normal sunlight.

h) The coating system has been exposed to particularly aggressive environments (i.e. in, or in the vicinity of, a chemical industry or in other areas with aggressive air-borne pollution known, or believed, to be damaging to polyester powder coatings).

i) The defects or failures of the coating system resulted due to contact with sealant, sealing compounds, insulation materials or mastics that are not approved for use with coated aluminum subtrates.

j) The defects or failures of the coating system are associated with the use of adhesive tapes.

k) The surface or objects have been re-coated.

I) The defect or failures of the coating system arose from a cause beyond the control of **The Seller**, such as but not limited to, impact, abrasion, mechanical damage, malicious damage and fire damage.

5. APPLICATION, COATING THICKNESS AND CURING

5.1. Coating of the objects must be carried out in one operation and in such a way that exposed surfaces receive a film thickness of at least 60 μ m. Film thickness of the cured coating must, at no point, be less than 40 μ m.



- 5.2. For objects or details, which are to be worked after coating (i.e. sawing, milling, and drilling), the coating thickness must not exceed 120 µm. The powder products covered by this warranty must be completely cured according to the corresponding Product Data Sheet guidelines.
- 5.3. The Applicator is required to check the oven on a regular basis as described in Sections 4 and 5 of the *"Recommended Process and Process Control Requirements for Architectural Aluminum Alloys' Coating"* (pleaser refer to Part 2 of this document).

6. CONTROL AND DOCUMENTATION

- 6.1. Prior to production runs or where re-starts follow temporary breaks in production, a sufficient number of test panels must be coated and cured for testing and control purposes.
- 6.2. Similarly, test panels must be coated and cured for testing at least once per shift. A test should also be run at least once per colour or per job, when the job requires less than an 8-hour shift to be completed.
- 6.3. The test panels must be coated and cured for testing according to the tests in Sections 4 and 5 of the *"Recommended Process and Process Control Requirements for Architectural Aluminum Alloys' Coating"* (please refer to Part 2 of this document).
- 6.4. Test panels must be prepared (pre-treated and coated) under normal factory conditions and must be cured together with a normal series in the oven.
- 6.5. A written test log must be prepared and kept for the duration of the warranty period. At least one coated test panel from each test point must be retained for the same period.
- 6.6. Details of the operation and control of the pre-treatment process (including drying) must be logged and kept, as must records from control of oven parameters and curing conditions.
- 6.7. All documentation must be made available for inspection upon request.

7. HANDLING, MOUNTING AND MAINTENANCE

- 7.1. It is important that during construction and assembly work the coated parts are protected from mechanical damage as well as cement and concrete spillage.
- 7.2. Special care must be taken when loading and unloading coated components. Corners and edges are especially susceptible to impact and should be protected.
- 7.3. Reasonable care must be taken during transportation and on site. Strict site discipline is the only effective way to prevent handling or installation damage.
- 7.4. Direct contact with unapproved tapes, adhesives, cleaning materials or other chemicals must be avoided.
- 7.5. Mounting techniques must be suitable for powder coated aluminum. The coated objects must not be in contact with materials or other substrates that may create galvanic corrosion.



- 7.6. Regular adhesive tapes must not be allowed to come into direct contact with objects coated with polyester powder coating. Should protective tape be required, then only a tape designed and suitable for protection of coated aluminum substrates shall be used.
- 7.7. Compliance, as well as ensuring that no residue, of any nature, is left on the coating, is **The End User** or **The Applicator's** responsibility. It is the responsibility of **The End User** as well to ensure the necessary maintenance, for repairs of damages and general cleaning (please refer to "Powder Coated Façades' Maintenance" in Part 3 of this document).

8. CLAIMS PROCEDURE

- 8.1. **The Seller** must be notified in writing within six weeks of any noticed deficiency of the coating.
- 8.2. In the event of a claim under this warranty, **The Applicator** must produce written evidence that the coating job was carried out according to the *"Recommended Process and Process Control Requirements for Architectural Aluminum Alloys' Coating"* (please refer to Part 2 of this document).
- 8.3. Such evidence shall, at least, include:
 - a) Description of the aluminum substrate used.
 - b) Description of the coated object, its design and shape.

c) Details of the pre-treatment process, including drying conditions, together with process specifications submitted by the pre-treatment supplier.

d) Details of oven parameters and curing conditions.

e) Process description and quality control records.

f) Data concerning the powder consignment and conditions of the powder material.

g) Maintenance lists with details of wash and cleaning.

- h) Any other logs or information necessary to reconstruct the chain of events.i) A written agreement that the project in question is valid under the terms of the warranty signed by both The Seller and The Applicator.
- 8.4. Only written documents will be considered in the event of a claim. Any consultancy activity provided by employees of **The Seller**, or its affiliated companies, will be deemed non-binding.

9. APPLICABLE LAW AND ARBITRATION

9.1. This warranty shall be governed and construed in accordance with the laws of England. Any dispute arising out of this agreement, or out of any further agreement to which this warranty may lead, will be submitted to Arbitration in Copenhagen under the rules of the International Chamber of Commerce in force at the date of this warranty. If any provisions of this warranty are held to be invalid, illegal, or unenforceable under any applicable stature or rule of law, they are to that extent deemed omitted.



INTRODUCTION

A maintenance-free surface coating for the construction industry is up till now unavailable in the marketplace. No maintenance-free surface coating for the construction industry exists. This includes products specially designed for parts of the world where climatic conditions put extreme strain on the exterior coating.

Correct maintenance has a major influence in maintaining the aesthetic appearance of a coating, thus expanding its years of service. Since the coating is usually exposed to a variety of environmental conditions, depending on what weather zone in the globe it is exposed to, maintenance should be handled differently in different parts of the world.

PERIODICAL CLEANING AND ROUTINE MAINTENANCE

(Cleaning frequency)

Powder Coated Objects or Components Used Outdoors

Cleaning is typically used to remove dirt and stains to maintain the aesthetic impression of the coating. When the coated objects or components are located in maritime sites, or highly polluted areas, aggressive stains may result on the coating surface and the gloss will gradually fade away. This may accelerate degradation of the coating's surface through corrosion, and will reduce the coating's years of service.

Cleaning is generally recommended at 6-month intervals; however, in highly exposed areas the frequency should be increased, depending on the severity of climate conditions on the coated object or components. Ordinary dirt and stains can be removed using a household neutral detergent (pH 5 to 8), diluted with water. The cleaning agent should not contain abrasive materials or solvents as they might have an adverse effect on the coating.





Powder Coated Objects or Components Used Indoors, Behind Glass

Typically, powder coated objects or components located or placed behind glass show no deterioration. However, their visual and aesthetic appearance might be affected by dust, dirt and splashes. It is recommended that these objects and components are washed periodically with a mild household neutral detergent (pH 5 to 8) to keep the coated surface in excellent condition.

Any mechanical damage may be repaired by following the below repair procedure.

RESTORATION THROUGH RUBBING AND POLISHING

In general, coatings are subject to alterations. It is the formulator's responsibility to assure that such changes occur evenly and that they will not have an effect on the uniform appearance, or the aesthetic impression of the building. Nevertheless, after several years of exposure, coatings might eventually need to be refreshed, even if periodical cleaning has been conducted. This is essential in those parts of the world where climatic conditions put extreme strain on the coating.

One effective way for refreshing the coating is by means of rubbing and polishing.

Rubbing

- 1. Prior to rubbing, remove ordinary dirt, oil and grease by using a household neutral detergent (pH 5 to 8) diluted with water.
- Apply the rubbing solution on a lint-free cloth or tack and wipe the coating liberally by hand or with a machine. Repeated wiping will enhance the result.
- 3. Remove the solution with a clean cloth.

For further information, please consult the product supplier. Jotun Powder Coatings recommends the use of rubbing compounds supplied by Jotun Paints. For further assistance, please contact a Jotun Paints representative in your area.

Polishing

- 1. After rubbing, it is advised to polish the coating with a polish compound to hoist the gloss and enhance its aesthetic appearance.
- 2. Apply the polish compound on a lint-free cloth or tack and wipe the coating liberally by hand or with a machine.
- 3. Conclude the process by wiping with a dry, clean cloth.

For further information, please consult the product supplier. Jotun Powder Coatings recommends the use of polish compounds supplied by Jotun Paints. For further assistance, please contact a Jotun Paints representative in your area.



Degradation of an opaque coating through weathering generally occurs on the outer layer. Laboratory tests have shown that correct restoration by means of rubbing and polishing may virtually allow the coating to regain its original properties, since the degraded material will be removed (see graph below).



RECOMMENDED COATING REPAIR PROCEDURES

Polyester powder coatings intended for façade applications have shown excellent anti-corrosion properties when coated. However, if the coating is partly damaged, this may affect the overall performance and should be repaired.

Re-coating with Wet Paint

Surface Preparation

To assure optimum adhesion and corrosion protection, a correct surface preparation is paramount before applying an organic coating, being it a primer or a top coat:

- Make sure the coating surface is free of dirt, oil, grease, wax and any other foreign substance. If necessary, clean the surface with a household neutral cleaner (pH 5 to 8).
- 2. Spots or damaged areas down to bare metal should be grinded or sanded before the application of a primer. Ensure smooth feathering of the coating edges.



- 3. Damaged areas exposing undamaged pre-treatment should be rubbed down by careful sanding to preserve the pre-treatment.
- 4. Dampen a lint-free cloth or tack with Xylene and wipe liberally to clean the areas to be repainted.

When the damage shows an exposed substrate, it is essential to apply a primer to the exposed substrate before repainting. If the substrate is not exposed and the pre-treatment intact, a top coat may be applied directly without the need for a primer.

The suitable repair coating varies according to the climatic conditions straining the coating, and the compliance with any local regulations related to solvent emissions and volatile organic compounds.

Jotun Powder Coatings recommends the use of primers and repair coatings supplied by Jotun Paints. For further assistance, please contact a Jotun Paints representative in your area.

SPECIAL CONSIDERATIONS

Metallic Finishes

As mica or metallic flakes are usually present in metallic shades ingredients, special care must be taken during their application and for their maintenance. For routine maintenance, periodic washing with a mild detergent (pH 5 to 8) is recommended. When repairing or restoring with wet paint, extreme care must be taken. Repair or restoration by means of rubbing and polishing should be avoided as it will result in discoloration. Please contact your nearest Jotun Powder Coatings office before initiating a repair or restoration job.

Matt Finishes

For routine maintenance periodical washing with a mild detergent (pH 5 to 8) is recommended. If repair or restoration is required, rubbing and polishing may be used although laboratory tests have shown the gloss level of the original coating will be affected. Uneven application of the original coating may result in an uneven gloss appearance.

Faded Colours

When repair or renovation will no longer reconstruct an aesthetically acceptable coating, then recoating will be required. Please contact your local Jotun Powder Coatings representative to discuss a suitable corrective measure.