Primax Miles AW

Product description

This is a product series developed to provide very smooth surface with protective and functional properties. It offers recoatable surface and excellent mechanical, chemical property with superior flow.

It has been proven consistency in quality and application in coating line, supported by technical expertise.

It also provides efficient solutions that can be used to increase mileage performances and create significantly total production cost saving.

Critical steps

The critical steps that must be controlled are:

1) Surface preparation and pre-treatment
2) Drying
3) Powder coating primer application
4) Curing
5) Intermediate inspection related to the surface prior to wet paint application (topcoat)

Scope

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

The data and information provided are not definite instructions. 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 AG must be read in conjunction with the relevant specification, Technical Data Sheet (TDS) and Safety Data Sheet (SDS).

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 Personal Protective Equipment (PPE) should always be worn in the powder application line.

Refer to relevant Jotun product SDS for further information.

Surface preparation and pre-treatment

Proper attention must be given to the cleaning and surface preparation of casted aluminum substrates (components).

The components must be suitable for pretreatment and the coating process. It must allow the coating properties to perform as specified in the relevant TDS for Primax Miles AW as well as other properties specified for this system. The components must be bare, clean, free from corrosion and not exposed beforehand to any anodic or organic coating.

There must be no sharp edges. The edge radius must allow the coating to completely cover the whole component's surface to ensure adequate film thickness and prevent holidays.

Handling

Components shall be carefully handled. Avoid contamination with dust, oil, fat, finger marks, etc. Care should be taken to secure a proper treatment of the total area.

Chrome pre-treatment

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

a) Degreasing
b) Rinse
c) Surface preparation (etching)
d) Rinse
e) Chrome-free (e.g. Ti-Zr conversion)
f) Rinse
g) Rinse, using demineralized water (the last running water from the object should be tested at 20°C. The readings should be taken from the open sections and conductivity readings should be below 30 µSiemens/cm).

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

Nano-technology (thin-film) pre-treatment

Suitable chrome-free (or nanotechnology) pre-treatments are also recommended. Due to the variety of chrome-free (or nanotechnology) pre-treatments available today, detailed advice must be sought from the pre-treatment supplier.

Before commencing to any continuous coating production using Primax Miles AW, tests must be performed to verify the suitability of the pre-treatment parameters. Consult with your pre-treatment supplier.

Drying

Pre-treated components must be dried in an oven. Maximum object temperatures in the drying oven must not exceed 100°C. Perform the process per chemical supplier's written instructions.

Primax coating application

Pre-treated components must never be handled with bare hands.

Pre-treated 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 must be powder coated within 16 hours.

Application parameters

A single coat application must be taken in one operation to a minimum film thickness of 70 microns in recessed areas. Maximum film thickness is based on individual customer requirements.

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

Line and equipment considerations

Primax Miles AW have high chargeability during corona application. It is recommended to start the corona application at 80 kV and 20 µA application current. Adjustments on spraying application parameters may be needed to achieve the final coating requirements.

Reclaim Powder

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. The ratio of reclaim to virgin must not exceed 20%.

Curing

Components once powder coated, must 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 for relevant Primax Miles AW TDS.

Laboratory tests show that a continuous heat up rate of >15°C/min can stabilize the gloss (and appearance) development of coatings.

It is recommended to conduct a weekly oven test. The temperature is best obtained by measuring it at the thickest wall of the component whilst the oven is fully loaded. The air temperature in the curing zone must not deviate from the adjusted nominal temperature by more than ± 10°C.

Post cure handling

Coated components must be cooled to below 40°C before handling. Precaution must be taken to avoid damage on the finished coating during stacking, packaging, storing and transportation.

Final inspection and quality control

Thorough inspection and coordination with the other application steps are essential for a quality coating. Inspection must 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, dry film thickness, visual color assessment, adhesion and other mechanical properties and physical appearance of the coating. Cure test can be carried out using a suitable solvent e.g. Methyl Ethyl Ketone (MEK).

Packing

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

To prevent any damage during transportation, each coated component must be packed individually and isolated from other components by crepe paper, with a weight of 150 grams/m2, or other suitable cellulose based packaging. Additionally, polyolefin packaging can also be used. Laboratory tests shows low density polyethylene (LDPE) with a film thickness of >60 microns can be used for this purpose. However, due to several manufacturers/brands of packing materials having varying packaging properties, it is the responsibility of the powder coating applicator to quality assure the use of any packaging materials prior to any use.

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

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

Should protective tape be required, then only tape designed for the protection of the coated component must be used. No residue of any nature must 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.

Caution

This product is for professional use only. The applicators and operators shall be trained, experienced and have the capability and equipment to mix/stir and apply the coatings correctly and according to Jotun's technical documentation. Applicators and operators shall use appropriate personal protection equipment when using this product. This guideline is given based on the current knowledge of the product. Any suggested deviation to suit the site conditions shall be forwarded to the responsible Jotun representative for approval before commencing the work.
For further advice please contact your local Jotun office.

Health and safety

Please observe the precautionary notices displayed on the container. Use under well ventilated conditions. Do not inhale spray mist. Avoid skin contact. Spillage on the skin should immediately be removed with suitable cleanser, soap and water. Eyes should be well flushed with water and medical attention sought immediately.

Accuracy of information

Always refer to and use the current (last issued) version of the TDS, SDS and if available, the AG for this product. Always refer to and use the current (last issued) version of all International and Local Authority Standards referred to in the TDS, AG & SDS for this product.

Colour variation

When applicable, products primarily meant for use as primers or antifoulings may have slight colour variations from batch to batch. Such products and epoxy based products used as a finish coat may chalk when exposed to sunlight and weathering.

Colour and gloss retention on topcoats/finish coats may vary depending on type of colour, exposure environment such as temperature, UV intensity etc., application quality and generic type of paint. Contact your local Jotun office for further information.

Reference to related documents

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.

When applicable, refer to the separate application procedure for Jotun products that are approved to classification societies such as PSPC, IMO etc.

Symbols and abbreviations

min = minutes
h = hours
d = days
°C = degree Celsius
° = unit of angle
µm = microns = micrometres
g/l = grams per litre
g/kg = grams per kilogram
m²/l = square metres per litre
mg/m² = milligrams per square metre
psi = unit of pressure, pounds/inch²
Bar = unit of pressure
RH = Relative humidity (% RH)
UV = Ultraviolet
DFT = dry film thickness
WFT = wet film thickness
kV = kilovolts
µA = microampere

TDS = Technical Data Sheet
AG = Application Guide
SDS = Safety Data Sheet
VOC = Volatile Organic Compound
MCI = Jotun Multi Colour Industry (tinted colour)
RAQ = Required air quantity
PPE = Personal Protective Equipment
EU = European Union
UK = United Kingdom
EPA = Environmental Protection Agency
ISO = International Standards Organisation
ASTM = American Society of Testing and Materials
AS/NZS = Australian/New Zealand Standards
NACE = National Association of Corrosion Engineers
SSPC = The Society for Protective Coatings
PSPC = Performance Standard for Protective Coatings
IMO = International Maritime Organization
ASFP = Association for Specialist Fire Protection
AAMA = American Architectural Manufacture Association
CSA = Canadian Standards Association

Disclaimer

The information in this document is given to the best of Jotun's knowledge, based on laboratory testing and practical experience. Jotun's products are considered as semi-finished goods and as such, products are often used under conditions beyond Jotun's control. Jotun cannot guarantee anything but the quality of the product itself. Minor product variations may be implemented in order to comply with local requirements. Jotun reserves the right to change the given data without further notice.

Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.

This Application Guide supersedes those previously issued.

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For your nearest local Jotun office, please visit our website at www.jotun.com.