



مصنع الشارقة للصناعة وطلاء المعادن ذ.م.م.
SHARJAH METAL COATING & IND. L.L.C.
PROTECTIVE & DECORATIVE POWDER COATING
حماية وطلاء الاسطح الخارجية ببودرة الديكور

Company Profile



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ABOUT US

Sharjah Metal Coating & Industries LLC. to cope up with the ever increasing demands of the industry. This Divisions is backed by a team of professionals, engineers, and skilled labours. The following works are done under their supervision, using both traditional and modern technology to ensure customers of high quality, good price and on-time delivery.

We are leading approved applicators for M/S. Jotun Powder Coatings, Norway. We offer the best job coatings for PE-EF and PE-SDF range that guarantees the highest quality at a very competitive price. All our pre-treatment chemicals are imported from M/s. Henkel KGAA, Germany. All the material coated by us has to go through a stringent quality testing by our fully equipped chemical testing laboratory.

We assure a tough, durable and anti-corrosive coating being one of the largest and oldest coating plants running with a total capacity of 11000 tonnes of aluminum coatings per annum from both our lines.



Company Profile:



Name Of Organization

Sharjah Glass Store LLC

Date Of Estbalishment

1976

Address:

P.O. Box: 1633, Sharjah, UAE:

Contact:

Glass & Trading

Showroom:

Tel: +971 6 5686681

Factory:

Tel:+971 6 5422668

Email: shjglass@eim.ae

Website: www.shjglass.com

**Sharjah Metal Coating
& Ind. LLC**

Main Factory: Ind. Area 13

Sharjah UAE

Tel: +971 6 5351585

Branch: Ind. Area 3

Sharjah, UAE

Tel: +971 6 5421968

Email: info@shjmetalcoating.com

Managing Director:

Mr. Yousuf A. Ustad

Mr. Hussain A. Ustad

Coating Plant Manager

Mr. Vikhar Ali Khan

No. Of Employees:

Management

8

Adminstration

10

Skilled

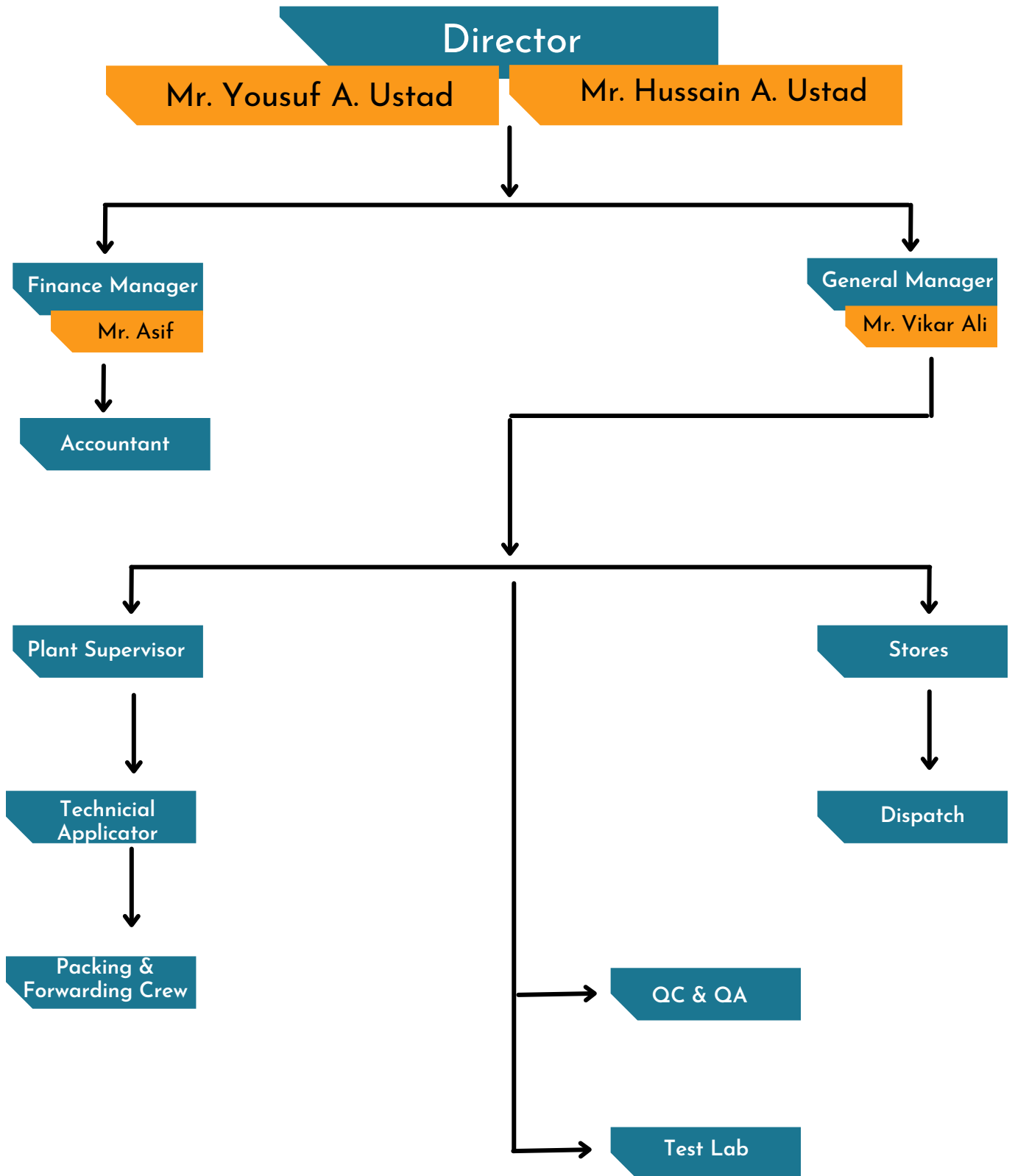
40

Others

68

Organization Chart

Sharjah Metal Coating Ind. Ilc





POLICY STATEMENT

Sharjah Glass Stores LLC. is fully committed to being the leading provider of glass products & powder coatings.

A primary goal of Sharjah Glass is to achieve the highest standards of quality in all business units' practices and operations without compromise. Our objective is to continually improve our company performance, while offering our customers a safe, cost effective and professional service.

Quality performance is one of the cornerstones of our company culture, and is considered a personal responsibility of all employees. To maintain quality performance of all business units at the highest level, the following aims are pursued:

- To fulfill or exceed Customer needs and expectations by delivering a quality product in a consistent and timely manner;
- To cultivate and maintain the commitment to continual improvement and communicate our goals and objectives to every employee;
- To promote a working environment where training and tools are provided for all work to proceed in a safe and efficient fashion;
- To furnish a system of policies which are periodically reviewed to ensure the ability of all groups to perform their work effectively.
- To provide Quality Aluminium Product and Services to satisfy the customers by establishing proper training & developing strategic plan.



Our Quality Control Procedure

- 1- **Color comparison** : To insure the color matching with the reference samples.
 - 2- **Gloss test**: According to ISO 2813 (using incident light 60 degrees), then compare the results with the required values.
 - 3- **Film thickness**: According to the ISO 2360, this test is done by using film thickness gauge to ensure the film thickness is range of (60:90 microns)
 - 4- **Adhesion test**: According to ISO 2409, by using cross hatching cutter with 2mm blades gaps to insure the adhesion between powder and substrate surface.
 - 5- **Pencil hardness test**: According to ISO 15184, by using pencils with various hardness values to insure scratching resistance.
 - 6- **Impact test**: According to ISO 6267 by using impact tester to insure the coating resistance for impact action without failure.
 - 7- **Bending Test**: According to ISO 6860, by using conical using conical mandrel to insure the flexibility of the coating when bending action happens.
 - 8- **Polymerization test**: By using solvents to insure the curing process fto the coating film.
 - 9- * **Resistance to humidity**: to insure the humidity resistance for the coating by using special weather stimulator for 1000 hours.
 - 10- * **Salt spray test**: by using salt spray cabinet for 1000 hours test period to insure media resistance for the coating.
 - 11- **Machu Test**: Resistance to boiling water.
- * The Quality tests number 9 and 10 are made in JOTUN laboratory in Dubai.

FACTORY OVERVIEW



(JIGGING AREA)



(PRE TREATMENT)

FACTORY OVERVIEW



(HANGING MATERIAL FOR POWDER COATING)



(POWDER BOOTH)

FACTORY OVERVIEW



(PACKAGING)



(READY FOR DISPATCH)



Certificate of Approval

Sharjah Metal Coatings

is certified as an Approved Applicator to coat

Jotun Facade

a product from Jotun Powder Coatings

This Company fulfils the requirements set by Jotun Powder Coatings for pre-treatment and application of powder coatings. These include having the necessary equipment, process controls and technical knowledge to comply with Jotun Powder Coatings' standards.



December 31, 2024
(Certificate valid until above date)


Authorised Signatory
Jotun Powder Coatings UAE (LLC)



Certificate of Approval

Sharjah Metal Coatings

is certified as an Approved Applicator to coat

Jotun SuperDurable

a product from Jotun Powder Coatings

This Company fulfils the requirements set by Jotun Powder Coatings for pre-treatment and application of powder coatings. These include having the necessary equipment, process controls and technical knowledge to comply with Jotun Powder Coatings' standards.



December 31, 2024

(Certificate valid until above date)

Authorised Signatory
Jotun Powder Coatings UAE (LLC)



Certificate of Approval

Sharjah Metal Coatings

is certified as an Approved Applicator to coat

Jotun Durasol

a product from Jotun Powder Coatings

This Company fulfils the requirements set by Jotun Powder Coatings for pre-treatment and application of powder coatings. These include having the necessary equipment, process controls and technical knowledge to comply with Jotun Powder Coatings' standards.



December 31, 2024

(Certificate valid until above date)

[Signature]
Authorised Signatory
Jotun Powder Coatings UAE (LLC)

OUR PROJECTS



(MOSQUE-AL DHAID)

OUR PROJECTS



(AL HIKMA)

OUR PROJECTS



(BAYS EDGE)

OUR PROJECTS



(DISTINCTION TOWER)



(DUBAI CLINIC)

OUR PROJECTS



(NMC HOSPITAL)



(PORSCHE SHOWROOM)

OUR PROJECTS



(SOBHA)



(DRAGON MALL)



Technical Data Sheet



Jotun Protects Property

Jotun Super Durable 2003

PRODUCT DESCRIPTION

This lead-free TGIC powder coating is specifically designed to meet stringent requirements of the construction industry. It provides longevity to the projects and building components by ensuring high levels of gloss retention, colour stability and corrosion protection along with aesthetic performance. This powder enables efficient application and provides uniform flow and attractive finish even after recycling.

Jotun Super Durable 2003 is formerly known as Corro-Coat PE-SDF 2003.

Application areas

These products are highly recommended to meet gloss retention and colour stability requirements. Primary areas of application are architectural aluminium extrusions and claddings.

When screen printing or sealants are used, it is advised to run separate trials to ensure compatibility and to meet the required performance criteria.

POWDER PROPERTIES

Storage

Keep in a dry cool area. Maximum temperature 25 °C. Maximum relative humidity 60 %. Under these mentioned conditions, product shelf life is 12 months from date of manufacture.

APPLICATION

Pretreatment

The overall performance of the coating system is largely dependent on the nature of the substrate and the type and quality of the pretreatment. For optimal results, it is recommended to follow the pretreatment supplier's instructions and recommendations.

The recommended types of pretreatment for the most frequently used substrates are:

Substrate	Pretreatment
Aluminium	Chromate conversion
Final rinse (deionized)	The last running water from the object should be tested at 20 °C. The readings obtained should measure below 30 µS/cm.

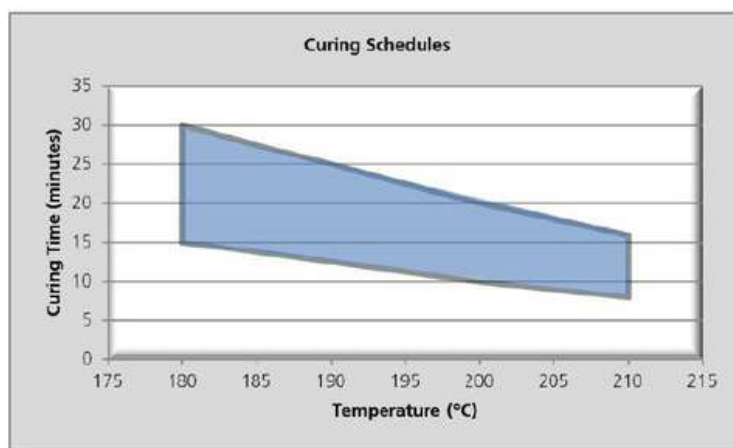
Suitable chrome-free pretreatment for aluminium is also recommended. Due to the variety of chrome-free pretreatments available today, only the approved systems from Qualicoat and GSB should be used. Detailed advice should be sought from the pretreatment supplier.

Curing



Technical Data Sheet

Jotun Super Durable 2003



Equipment

Suitable for Corona or Tribo charging equipment.

APPEARANCE

Colour

Selected range of RAL colours. This product is also available in the Cool Shades Collection, a selection of colours with heat-reflective properties. Other colours can be custom-made upon request.

Gloss

EN ISO 2813 (60°) 35±7

If the significant surface is too small or unsuitable for the gloss to be measured with the glossmeter, the gloss should be compared visually with the reference sample (from the same viewing angle).

Gloss measurements of metallic effect coatings can show deviation from original levels specified in this document and visual comparison with the reference sample is recommended.

Gloss range used in TDS and on the label of the metallic effect coatings represents gloss of the base and not of the final finish.

PERFORMANCE

The technical data provided below are typical for this product when applied as follows:

Substrate	Chromated aluminium panels
Substrate thickness (mm)	0.8
Film thickness (µm)	60-90

Typical values when tested.

Property	Standard	Result
Adhesion	EN ISO 2409 (2 mm)	Cross-cut rating Gt0 (100 % adhesion)
Impact resistance*	EN ISO 6272 /ASTM D2794 (impactor diameter 15.9 mm)	Passes 2.5 Nm without detachment after tape pull test.
Cupping test*	EN ISO 1520	Passes 2 mm indentation without cracking. Passes 5 mm indentation without detachment after tape pull test.
Flexibility*	EN ISO 1519	Passes 12 mm cylindrical Mandrel bend test without cracking. Passes 5 mm cylindrical Mandrel bend test without detachment after tape pull test.



Technical Data Sheet

Jotun Super Durable 2003



Jotun Protects Property

Film hardness	EN ISO 2815	Indentation resistance according to Buchholz: > 80
Mortar resistance	EN 12206-1	The mortar must be easy to remove without leaving any residues.
Drilling, milling and sawing test		No flaking of coating.
Neutral salt spray resistance	ASTM B117	No blistering or loss of gloss after 3000 hours
Humidity resistance containing SO₂	EN ISO 3231 (0.2 I SO ₂)	No infiltration exceeding 1 mm on both sides of the scratch after 30 cycles.
Humidity resistance	EN ISO 6270-2	No infiltration exceeding 1 mm on both sides of the scratch after 3000 hours.
Acetic acid salt spray resistance	ISO 9227	After 1000 hours testing – maximum 16 mm ² infiltration over a scratch length of 10 cm.
Accelerated weathering	DIN EN ISO 11507 (UVB - 313)	Cycle: 4 hours at 50 °C UV and 4 hours at 40 °C condensation. No chalking, excellent gloss retention and colour stability after 600 hours testing.
Accelerated weathering	DIN EN ISO 11507 (UVA - 340)	Cycle: 8 hours at 60 °C UV and 4 hours at 45 °C condensation. No chalking, excellent gloss retention and colour stability after 3000 hours testing.
Natural weathering test	ISO 2810 (South Florida, 27 °N)	No chalking, excellent gloss retention and colour stability after 36 months exposure (angle of 5 ° to South).
Flame spread index	ASTM E 84-06a	Class 1 or A
Smoke development	ASTM E 84-06a	Class 1 or A
Total Solar Reflectance**	ASTM C 1549	TSR ≥ 0.25

* According to Qualicoat Class 2 test procedures.

** Only applicable for the colours featured in 'The Cool Shades Collection'.

Approval

This product is certified according to Qualicoat Class 2 and has weathering performance in line with AAMA 2604. Qualicoat: P-1298 (TH)



Product warranty

This product is backed by a 25-year product warranty system when used on an architectural aluminium substrate, subject to terms and conditions.

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.



بودرة جوتن للطلاء



Jotun Powder Coatings

20th May 2010

DETERMINATION OF VOLATILE ORGANIC COMPOUNDS (VOC) CONTENT

ASSESSMENT CONDUCTED BY JOTUN POWDER COATINGS

Volatile Organic Compounds is one of the areas of focus within the Green Seal - GS 11 Standard and Green Star Man-5 Building Users Guide. Although these standards cover decorative paints and coatings, it does not, as yet, include industrial coatings. However, in order for Jotun to reply our customer's questions on this subject, a VOC analysis was performed on PE-F series powder coating. This was carried out to indicate whether VOC requirement highlighted in the standards could be met.

The samples are to be weighed prior to and after exposure to provide a weight loss in grams. The test results are based on three parallel measurements and presented as average readings.

The samples are exposed at $115 \pm 1^\circ\text{C}$, after that, they shall be evaluated. The weight loss obtained represents the combined weight loss of VOC and water.

Sample Identification:

DESCRIPTION	SPECIFIC GRAVITY
Corro-Coat PE-F Facade Series 1307	1.67 g/cm ³



Jotun Powder Coatings U.A.E. (LLC)

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Tel +(971-4) 347-2515 | Fax +(971-4) 347-2815 | www.jotun.com

Bankers

The Main office
Emirates NBD Bank (PJSC)

A/C No. 1012008471404

R.C. No. 40096

Paid up capital AED. 3,000,000





بودرة جوتن للطلاء



Jotun Powder Coatings

Results:

Weight Loss

AVERAGE WEIGHT	INITIAL	AVERAGE WEIGHT LOSS (g/ kg sample)	AVERAGE WEIGHT LOSS (g/lt)
30.54 g		2.37 g / kg	1.45 g /lt

Conclusion:

Based on our measurements, the product Corro-Coat PE-F Series 1307 is in line with independent Bodycote test results already carried out on both Corro-Coat PE-SDF Series 2903 and Corro-Coat Durasol series. Corro-Coat PE-F Series 1307 is in the criteria given by Green Seal and Green Star regarding maximum VOC content.

Date: 20th May 2010

Nilufer Dilbil

Regional R&D Manager -ME

Jotun Powder Coatings UAE (LLC)



Jotun Powder Coatings U.A.E. (LLC)

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Paid up capital AED. 3,000,000





Technical Data Sheet



Corro-Coat PE-F 1301, 1303, 1307, 1308

PRODUCT DESCRIPTION

This lead-free TGIC powder coating is specifically designed to meet stringent requirements of the construction industry. It provides longevity to the projects and building components by ensuring gloss retention, colour stability and corrosion protection. This powder enables efficient application and provides uniform flow and attractive finish even after recycling.

Application areas

Primary areas of application are architectural aluminium extrusions and claddings. The overall excellent properties and attractive appearance of this product make it suitable for application to other ferrous and non-ferrous substrates.

When screen printing or sealants are used, it is advised to run separate trials to ensure compatibility and to meet the required performance criteria.

POWDER PROPERTIES

Storage

Keep in a dry cool area. Maximum temperature 25 °C. Maximum relative humidity 60 %. Under these mentioned conditions, product shelf life is 12 months from date of manufacture.

APPLICATION

Pretreatment

The overall performance of the coating system is largely dependent on the nature of the substrate and the type and quality of the pretreatment. For optimal results, it is recommended to follow the pretreatment supplier's instructions and recommendations.

The recommended types of pretreatment for the most frequently used substrates are:

Substrate	Pretreatment
Aluminium	Chromate conversion
Steel	Zinc phosphate
Zinc coated steel	Zinc phosphate or chromate conversion
Final rinse (deionized)	The last running water from the object should be tested at 20 °C. The readings obtained should measure below 30 µS/cm.

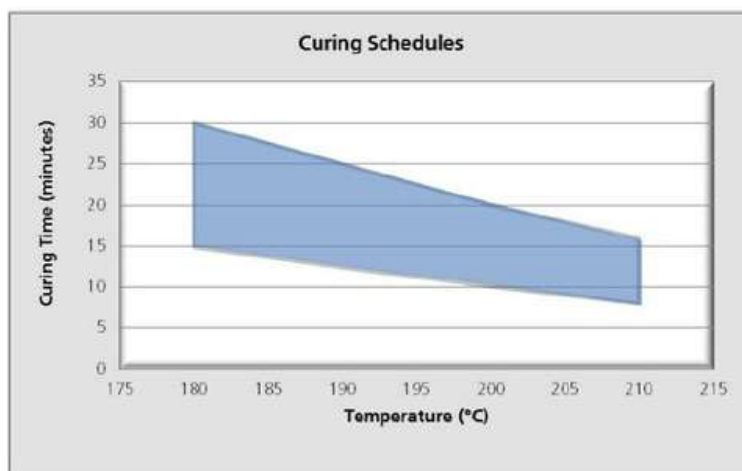
Suitable chrome-free pretreatment for aluminium is also recommended. Due to the variety of chrome-free pretreatments available today, only the approved systems from Qualicoat and GSB should be used. Detailed advice should be sought from the pretreatment supplier.

Curing



Technical Data Sheet

Corro-Coat PE-F 1301, 1303, 1307, 1308



Equipment

Suitable for Corona or Tribo charging equipment.

APPEARANCE

Colour

Available in RAL, NCS and in a wide assortment of custom-made colours, this coating provides a variety of effects, including metallic. Also available in the Cool Shades Collection - a selection of colours with heat-reflective properties.

Gloss

EN ISO 2813 (60°)	
Series 1301	12 ± 5
Series 1303	30 ± 5
Series 1307	77 ± 7
Series 1308	90 ± 10

If the significant surface is too small or unsuitable for the gloss to be measured with the glossmeter, the gloss should be compared visually with the reference sample (from the same viewing angle).

Gloss measurements of metallic effect coatings can show deviation from original levels specified in this document and visual comparison with the reference sample is recommended.

PERFORMANCE

The technical data provided below are typical for this product when applied as following:

Substrate	Chromated aluminium panels
Substrate thickness (mm)	0,8
Film thickness (µm)	60-90

Typical values when tested have not necessarily been recently revised.

Property	Standard	Result
Adhesion	EN ISO 2409 (2 mm)	Cross-cut rating Gt0 (100 % adhesion)
Impact resistance	EN ISO 6272 /ASTM D2794 (Impactor diameter 15.9 mm)	More than 23 Inch-pounds or 2.5 Nm without film cracking
Cupping test	EN ISO 1520	Indentation depth in excess of 5 mm without film cracking
Flexibility	EN ISO 1519	Cylindrical Mandrel bending test, passes 5 mm Mandrel diameter



Technical Data Sheet

Corro-Coat PE-F 1301, 1303, 1307, 1308



Film hardness	EN ISO 2815	Indentation resistance according to Buchholz: > 80
Mortar resistance	EN 12206-1	The mortar must be easy to remove without leaving any residues.
Drilling, milling and sawing test		No flaking of coating.
Neutral salt spray resistance	ASTM B117	No blistering or loss of adhesion after 1000 hours
Humidity resistance containing SO₂.	EN ISO 3231 (0.2 l SO ₂)	No infiltration exceeding 1 mm on both sides of the scratch after 30 cycles.
Humidity resistance	EN ISO 6270-2	No infiltration exceeding 1 mm on both sides of the scratch after 1000 hours
Acetic acid salt spray resistance	ISO 9227	After 1000 hours testing – maximum 16 mm infiltration over a scratch length of 10 cm.
Accelerated weathering	DIN EN ISO 11507 (UVB - 313)	Cycle: 4 hours at 50 °C UV and 4 hours at 40 °C condensation. No chalking, excellent gloss retention and colour stability after 300 hours testing.
Accelerated weathering	DIN EN ISO 11507 (UVA - 340)	Cycle: 8 hours at 60 °C UV and 4 hours at 45 °C condensation. No chalking, excellent gloss retention and colour stability after 1000 hours testing.
Natural weathering test	ISO 2810 (South Florida, 27 °N)	No chalking, excellent gloss retention and colour stability after 12 months exposure (angle of 5° to South).
Surface spread of flame	BS 476 Part 7 – 1997	Class 1
Fire propagation test	BS 476 Part 6 – 1989	Excellent index of performance (I=1)
Total Solar Reflectance*	ASTM C 1549	Grades 1303R, 1307R and 1308R: TSR ≥ 0.25

* Only applicable for the colours featured in 'The Cool Shades Collection'.

Approval

This product is certified according to Qualicoat Class 1 and GSB Standard requirements, and has weathering performance in line with AAMA 2603. The approval is specific to colour and local Jotun Powder Coatings unit.

Product warranty

This product is backed by a 10-year product warranty system when used on an architectural aluminium substrate, subject to terms and conditions.

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.



Technical Data Sheet



Jotun Protects Property

Jotun Durasol

PRODUCT DESCRIPTION

This lead-free powder coating is designed to withstand the most stringent weather conditions and meet industry requirements for high performance and long lasting attractive finishes. This TGIC-free product combines outstanding gloss retention and colour stability properties and ensures highest corrosion resistance levels.

Application areas

This product is highly recommended for architectural aluminium extrusions and claddings where climatic conditions put severe strain on exterior surface and where advanced corrosion protection, gloss and color retention are essential.

When screen printing or sealants are used, it is advised to run separate trials to ensure compatibility and to meet the required performance criteria.

POWDER PROPERTIES

Storage

Keep in a dry cool area. Maximum temperature 25 °C. Maximum relative humidity 60 %. Under these mentioned conditions, product shelf life is 6 months from date of manufacture.

APPLICATION

Pretreatment

The overall performance of the coating system is largely dependent on the nature of the substrate and the type and quality of the pretreatment. For optimal results, it is recommended to follow the pretreatment supplier's instructions and recommendations.

The recommended types of pretreatment for the most frequently used substrates are:

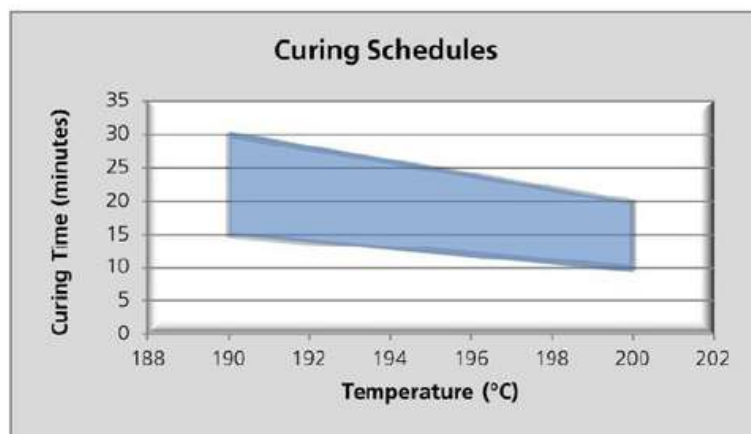
Substrate	Pretreatment
Aluminium	Chromate conversion
Final rinse (deionized)	The last running water from the object should be tested at 20 °C.

Curing



Technical Data Sheet

Jotun Durasol



Equipment

Suitable for Corona or Tribo charging equipment.

APPEARANCE

Colour

Selected range of RAL colours. Additional colours can be made upon request.

Gloss

EN ISO 2813 (60°) 22 ± 5

If the significant surface is too small or unsuitable for the gloss to be measured with the glossmeter, the gloss should be compared visually with the reference sample (from the same viewing angle).

Gloss measurements of metallic effect coatings can show deviation from original levels specified in this document and visual comparison with the reference sample is recommended.

PERFORMANCE

The technical data provided below are typical for this product when applied as following:

Substrate Chromated aluminium panels
Substrate thickness (mm) 0,8
Film thickness (µm) 50-70

Typical values when tested have not necessarily been recently revised.

Property	Standard	Result
Adhesion	EN ISO 2409 (2 mm)	Gt 0
Impact resistance	EN ISO 6272 /ASTM D2794 (Impactor diameter 15.9 mm)	Passes 2.5 Nm without detachment after tape pull test.
Cupping test	EN ISO 1520	Passes 5 mm indentation without detachment after tape pull test.
Flexibility	EN ISO 1519	Passes 5 mm cylindrical Mandrel bend test without detachment after tape pull test.
Film hardness	EN ISO 2815	Indentation resistance according to Buchholz: > 80
Mortar resistance	EN 12206-1	The mortar must be easy to remove without leaving any residues.



Technical Data Sheet Jotun Durasol



Drilling, milling and sawing test		No flaking of coating.
Neutral salt spray resistance	ASTM B117	No blistering or loss of adhesion after 4000 hours.
Humidity resistance containing SO₂.	EN ISO 3231 (0.2 l SO ₂)	No infiltration exceeding 1 mm on both sides of the scratch after 40 cycles.
Humidity resistance	EN ISO 6270-2	No infiltration exceeding 1 mm on both sides of the scratch after 4000 hours.
Acetic acid salt spray resistance	ISO 9227	After 2000 hours testing – maximum 16 mm ² infiltration over a scratch length of 10 cm.
Accelerated weathering	DIN EN ISO 11507 (UVB - 313)	Cycle: 4 hours at 50 °C UV and 4 hours at 40 °C condensation. No chalking, excellent gloss retention and colour stability after 1200 hours testing.
Accelerated weathering	DIN EN ISO 11507 (UVA – 340)	Cycle: 8 hours at 60 °C UV and 4 hours at 45 °C condensation. No chalking, excellent gloss retention and colour stability after 5000 hours testing.
Natural weathering test	ISO 2810 (South Florida, 27 °N)	No chalking, excellent gloss retention and colour stability after 10 years exposure (angle of 45 ° to South).
Flame spread index	ASTM E 84-06a	Class 1 or A
Smoke development	ASTM E 84-06a	Class 1 or A

Approval

This product is certified according to Qualicoat Class 3 standard and has weathering performance in line with AAMA 2605. The approval is specific to colour and local Jotun Powder Coatings unit.

Product warranty

This product is backed by a 30-year product warranty system when used on an architectural aluminium substrate, subject to terms and conditions.

Disclaimer

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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.



Bodycote Testing Limited. Coatings Division. 6 Coronet Way, Centenary Park,
Eccles, Manchester M50 1RE Tel 0161 787 3250 Fax 0161 787 3251

DETERMINATION OF VOLATILE ORGANIC COMPOUNDS (VOC) CONTENT

ASSESSMENT CONDUCTED ON BEHALF
JOTUN POWDER COATINGS

Date: 28th April 2009

Bodycote Testing ref: N950931 Issue 1

Client details

Bjorn Karlsen
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Bodycote Testing Limited
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L. BARRON
L. Barron
OPERATIONS MANAGER



Client Requirements:

Volatile Organic Compounds is one of the areas of focus within the *Green Seal Certification* as stated in the *GS 11 Standard* and *Green Star Compliance Criteria* as stated in *Office As Built v2, Man-5 Building Users Guide*.

Although the above mentioned standards cover decorative paints and coatings, it does not, as yet, include industrial coatings. The client requested Bodycote to perform a VOC analysis on specific powder coatings grades to indicate whether the VOC requirements highlighted in the standards could be met.

The samples are to be weighed prior to and after exposure to provide a weight loss in grams. The test results are based on two parallel measurements and presented as average readings.

The samples are exposed for 16 hours at $115 \pm 1^\circ\text{C}$, after which, they shall be evaluated. The weight loss obtained represents the combined weight loss of VOC and water.

Sample Identification:

BODYCOTE REF	DESCRIPTION	SPECIFIC GRAVITY
N950931	Corro-Coat PE-SDF Series 2903	1.47 g/cm ³ (Supplied by Jotun)

Results:

Weight Loss

BODYCOTE REF	AVERAGE INITIAL WEIGHT	AVERAGE WEIGHT LOSS (g/ kg sample)	AVERAGE WEIGHT LOSS (g/litre)
N950931	42.93 g	0.71 g	0.48 g/litre

Conclusion:

Based on the measurements above, the product Corro-Coat PE-SDF Series 2903 complies with the criteria issued by the GS 11 Standards of Green Seal and Office As Built v2, Man-5 Building Users Guide of Green Star regarding maximum VOC content.

All testing was conducted in accordance with client's instructions. Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. No individual sections of this report shall be reproduced except with the written permission of Bodycote Testing Ltd



Product Data Sheet

Corro-Coat PE-F Series 1301, 1303, 1307 and 1308

Product Description	Corro-Coat PE-F Series 1301, 1303, 1307 and 1308 are exterior durable polyester TGIC powder coatings especially formulated to satisfy the most stringent requirements for colour stability, gloss retention and corrosion protection. Corro-Coat PE-F Series 1301, 1303, 1307 and 1308 provide a uniform flow and finish even after recycling.								
Application Areas	<p>Primary areas of application are architectural aluminum extrusions and claddings. The overall excellent properties and attractive appearance of Corro-Coat PE-F Series 1301, 1303, 1307 and 1308 make them suitable for application to other ferrous and non-ferrous substrates.</p> <p>When screen printing or sealants are used, it is advised to run separate trials to ensure compatibility and to meet the required performance criteria.</p>								
Pre-treatment	<p>The overall quality of the coating system is largely dependent on the type and quality of the pre-treatment. The recommended types of pre-treatment for the most frequently used substrates are:</p> <table><tr><td>Aluminum</td><td>Chromate conversion</td></tr><tr><td>Steel</td><td>Zinc phosphate</td></tr><tr><td>Zinc coated steel</td><td>Zinc phosphate or chromate conversion</td></tr><tr><td>Final rinse (deionized)</td><td>The last running water from the object should be tested at 20°C. The readings obtained should measure below 30µS/cm.</td></tr></table>	Aluminum	Chromate conversion	Steel	Zinc phosphate	Zinc coated steel	Zinc phosphate or chromate conversion	Final rinse (deionized)	The last running water from the object should be tested at 20°C. The readings obtained should measure below 30µS/cm.
Aluminum	Chromate conversion								
Steel	Zinc phosphate								
Zinc coated steel	Zinc phosphate or chromate conversion								
Final rinse (deionized)	The last running water from the object should be tested at 20°C. The readings obtained should measure below 30µS/cm.								
Curing Schedules	15 minutes at 180°C object temperature 10 minutes at 200°C object temperature 8 minutes at 210°C object temperature								
Colour Selection	Corro-Coat PE-F Series 1301, 1303, 1307 and 1308 are available in a wide assortment of custom-made colours and metallic finishes, including RAL and NCS.								
Powder Application	Corro-Coat PE-F Series 1301, 1303, 1307 and 1308 are available for Corona or Tribo charging equipment.								
Product Warranty	Corro-Coat PE-F Series 1301, 1303, 1307 and 1308 are backed by a 15-year product warranty system for exterior application and a 25-year product warranty system for interior application when used on architectural aluminum substrates.								
Storage Conditions	Keep in a dry cool area. Maximum temperature 25°C. Maximum relative humidity 60%. (Please refer to Section 7 of the "Recommended Process and Process Control Requirements for Architectural Aluminum Alloys' Coating" in Part 2 of the "Quality and Warranty" document).								
Maintenance	Please refer to "Powder Coated Façades' Maintenance" in Part 3 of the "Quality and Warranty" document.								
Approvals	Please consult your local Jotun Powder Coatings' production unit.								



Technical Data

The technical data provided below are typical for Corro-Coat PE-F Series 1301, 1303, 1307 and 1308 applied to 0.8 mm chromated aluminum panels (65 micron film thickness). Typical values when tested have not necessarily been recently revised.

Description	Norm	Series 1301	Series 1303	Series 1307	Series 1308
Gloss	EN ISO 2813 (60°)	12 ±5	30 ±5	77 ±7	90 ±10
Finish	Visual	Soft Texture	Smooth	Smooth	Smooth
Adhesion	EN ISO 2409 (2 mm)	Cross-cut rating Gt0 (100% adhesion).			
Impact resistance	ASTM D 2794 (5/8" ball)	More than 23 inch-pounds or 2.5 Nm without film cracking.			
Cupping test	EN ISO 1520	Indentation depth in excess of 5 mm without film cracking.			
Flexibility	EN ISO 1519	Cylindrical Mandrel bending test, passes 5 mm Mandrel diameter.			
Film hardness	EN ISO 2815	Indentation resistance according to Buchholtz: > 80.			
Mortar resistance	ASTM C 207	After 24 hours at specified conditions, mortar is easily removed from the coating resulting neither in loss of adhesion nor in surface marring.			
Drilling, milling and sawing test		No flaking of coating.			
Salt spray resistance	ASTM B 117	No blistering and maximum 1 mm corrosion creep from scratch after 3000 hours.			
Resistance to humid atmospheres containing SO ₂	EN ISO 3231 (0.2 l SO ₂)	No blistering and maximum 1 mm corrosion creep from scratch after 30 cycles.			
Resistance to humid atmospheres	DIN 50017	No blistering and maximum 1 mm corrosion creep from scratch after 3000 hours.			
UV resistance	ASTM G 154 (UVB-313)	Cycle: 4 hours at 50°C UV and 4 hours at 40°C condensation. No chalking, excellent gloss retention and colour stability after 300 hours testing.			
Accelerated weathering test	ASTM G 154 (UVA-340)	Cycle: 8 hours at 60°C UV and 4 hours at 45°C condensation. No chalking, excellent gloss retention and colour stability after 1000 hours testing.			
Natural weathering test	ASTM G 7 (South Florida, 27°N)	No chalking, excellent gloss retention and colour stability after 12 months exposure (angle of 5° to South).			
Surface spread of flame	BS 476 Part 7 - 1987	Class 1			
Fire propagation test	BS 476 Part 6 - 1989	Excellent index of performance.			

Note: The information on this Product Data Sheet is given to the best of the manufacturer's knowledge, based on laboratory testing and practical experience. However, as the product is often used under conditions beyond the manufacturer's control, only the quality of the product itself can be guaranteed. Jotun Powder Coatings reserves the right without notice to alter or change the contents of this Technical Data.

Jotun Powder Coatings. Revised January 2005.
THIS PRODUCT DATA SHEET SUPERSEDES ALL PREVIOUSLY ISSUED VERSIONS.



Recommended Process and Process Control Requirements for Architectural Aluminum Alloys' Coating

- 1. APPLICATION AREAS**
 - 1.1. Aluminum Pressings, Sheets and Extrusions for Exterior Application**
 - 1.1.1. The aluminum or aluminum alloy must be suitable for the pre-treatment and the coating's process. It should allow the coating properties to perform as specified in the relevant technical properties provided in the Product Data Sheets, 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.
 - 1.1.2. There must be no sharp edges. The edges radii must allow the coating to completely cover the whole object's surface to ensure adequate film thickness and prevent holidays.
 - 1.1.3. When assembling coated elements together or installing a coated object in place, it is recommended to avoid the combination of different substrates; this will prevent exposure to galvanic corrosion.
- 2. LABORATORY EQUIPMENT**
 - 2.1. Essential Equipment for Pre-treatment Chemicals' Test, Rinsing Water Test and Final Results' Test**
 - 2.1.1. Pre-treatment chemicals test must be performed according to the suppliers' instructions.
 - 2.1.2. Conductivity measurement gauge for final rinse evaluation.
 - 2.1.3. Temperature recorder.
 - 2.1.4. Coating weight equipment, DIN 50939 or equal.
 - 2.2. Necessary Equipment for Powder Coating Test**
 - 2.2.1. Film thickness gauge suitable for use on aluminum EN ISO 2360.
 - 2.2.2. Cross cut equipment EN ISO 2409 – 2 mm including Permacel 99 tape or Scotch 610.
 - 2.2.3. Bend test equipment EN ISO 1519 – 5 mm Mandrel.
 - 2.2.4. Indentation test equipment EN ISO 2815.
 - 2.2.5. Impact test equipment ASTM D 2794 (5/8" ball) or ER ISO 6272.
 - 2.2.6. Cupping test equipment EN ISO 1520.
 - 2.2.7. Gloss measurement equipment ISO 2813 (60°).
 - 2.2.8. Boiling water test equipment.
 - 2.2.9. Temperature recorder.
 - 2.2.10. Cure MEK (Methyl Ethyl Kethon) test equipment.
- 3. SURFACE TREATMENT PROCEDURE**
 - 3.1. Handling**
 - 3.1.1. Components or objects must be carefully handled. Avoid contamination with dust, oil, fat, finger marks, etc.



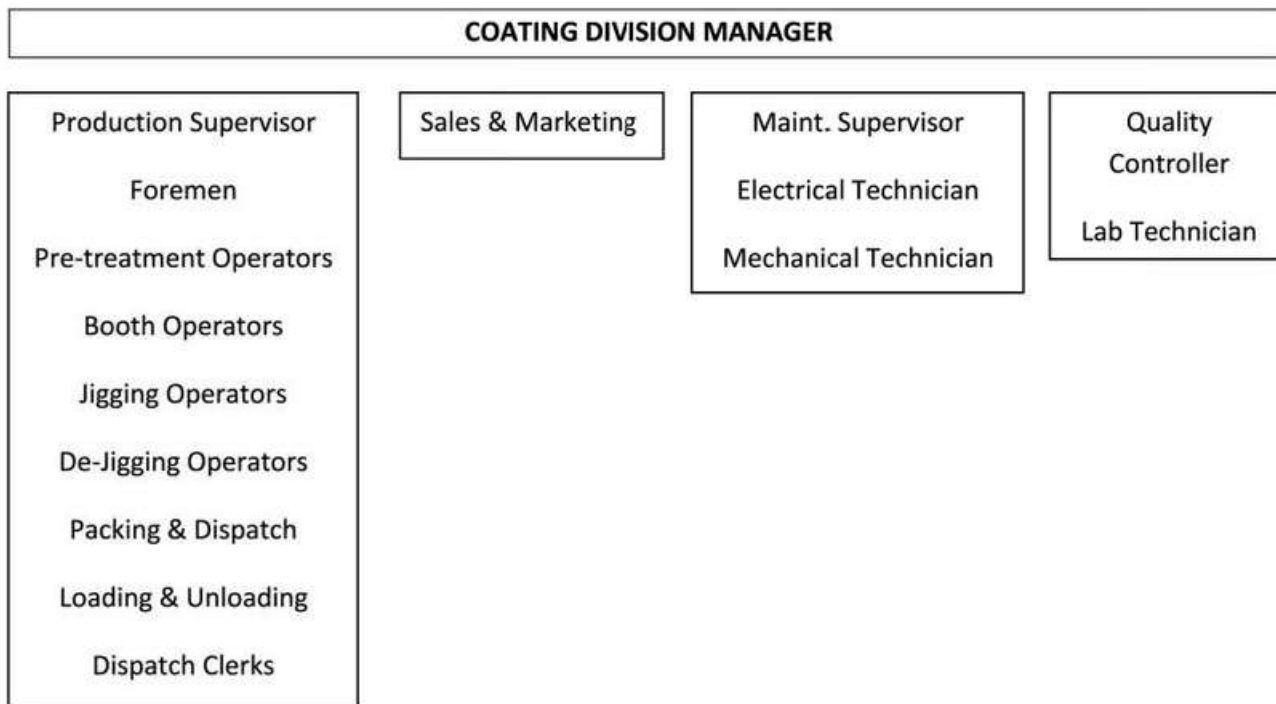
Jotun Powder Coatings



OVERVIEW OF RESOURCES

PERSONNEL:

The Coating Division consists of a total of 68 employees working in accordance to the Coating Division Organization Chart.



PLANT AND EQUIPMENTS:

Two Production Lines built in area of 66,000 sq ft equipped with the following:

SHARJAH GLASS LINE 1:

Conveyor belt, re-loading zone, well drying gas oven, infra-red zone, gas fired curing oven, electrostatic automatic powder coating booth, manual powder coating booth, chemical pre-treatment line, 2 over head crane hoists.

Installed and commissioned by ERCON PLANT SYSTEMS LTD., MIDACRE, WILLENHALL TRADING ESTATE, WEST MIDLANDS WV 13 2JW, ENGLAND, UNITED KINGDOM.

SHARJAH METAL LINE 2:

Conveyor belt, re-loading zone, well drying gas oven, infra-red zone, gas fired curing oven, electrostatic automatic powder coating booth, manual powder coating booth, chemical pre-treatment line, 2 over head crane hoists.

Installed and commissioned by ITALTECNO s.r.l, VIA MARINUZZI N. 38, 41100 MODENA ITALY.

Equipped with a high international standard "maintenance tool room", the plant equipment is effectively maintained by a well trained, qualified and experienced maintenance team.

Periodic preventive maintenance is strictly implied to all functional equipments.

A routine daily check as per "Daily Check List" is conducted each day for all production equipments and their working parameters.

Technical guidance from ERCON GROUP, U.K. & ITALTECNO, ITALY is sought for major break-downs only.



مصنع الشارقة للصناعة وطلاء المعادن ذ.م.م.

SHARJAH METAL COATING & IND. L.L.C.

PROTECTIVE & DECORATIVE POWDER COATING

حماية وطلاء الأسطح الخارجية ببودرة الديكور

(Scan to visit our website)



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