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**Paint System Rating C5I/C5M
Color TBD**

PURPOSE / LOCATION		
TYPICAL APPLICATIONS	INTERIOR	EXTERIOR
C5I	Buildings or areas with high probability of condensation and high pollution	Industrial areas with high humidity and aggressive atmosphere
C5M	Buildings or areas with permanent condensation and high pollution	Coastal and offshore with high alkalinity

Table 1 – (ISO 12944-5/ ASTM 117B)

Test procedures for paint systems applied to ferrous and non-ferrous materials

Corrosivity Category as defined in ISO 12944-2	Durability ranges	ISO 2812-1 ¹ (chemical resistance) Hrs.	ISO 2812-2 (water immersion) Hrs.	ISO 6270 (water condensation) Hrs.	ISO 7253 (neutral salt spray) Hrs.	Standards Typical
C5I	Low	168	-	240	480	1500+
	Medium	168	-	480	720	
	High	168	-	720	1440	
C5M	Low	-	-	240	480	1500+
	Medium	-	-	480	720	
	High	-	-	720	1440	

SURFACE PREPARATION, PRETREATMENT

PRETREATMENT:

Sandblasting is the only approved surface preparation

A. Solvent clean per SSPC-SP-1 (Solvent Cleaning) prior to sand blasting.

B. Prior to abrasive blasting:

1 Metal plugs must be placed in grease inlets, drain fittings and conduit openings.


2 Plug and / or blind all openings that are not to be coated.

3 Round-off by grinding all excessively sharp corners.

C. It is imperative that the abrasive be prevented from entering the motor

D. All exterior surfaces of the motor and the top and side hoods, if so equipped, must be abrasive blasted per SSPC-SP-10 (Near White Metal Blast Cleaning) with a 1-3 mil (25-75 micron) surface profile.

E. Apply primer as soon as possible, but not longer than 2 hours, to prevent blasted surfaces from

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rusting. Spot re-blast to remove any newly formed surface oxidation or contamination.

Note: Removal of oil, soil, lubrication greases, metal oxides, welding scales etc. is essential prior to any coating process. It can be done by a variety of chemical and mechanical methods. The selection of the method depends on the size and the material of the part to be coated, the type of soil to be removed and the performance requirement of the finished product. The most effective preparation methods include;

◆ Shot Blasting	◆ Chemical Cleaning Process	◆ Mechanical abrasion
◆ Grit Blasting	◆ Impact Needle Guns	◆ Flame Cleaning

Chemical pre-treatments involve the use of phosphates or chromates in submersion or spray application. These often occur in multiple stages and consist of [degreasing](#), etching, de-smutting, various rinses and the final [Phosphating](#) or [chromatins](#) of the substrate. The pre-treatment process both cleans and improves bonding to the metal.

Another method of preparing the surface prior to coating is known as abrasive blasting or [Sandblasting](#) and shot blasting. Blast media and blasting abrasives are used to provide surface texturing and preparation, etching, finishing, and degreasing for products. The most important properties to consider are chemical composition and density; particle shape and size; and impact resistance. See appropriate SSPC / NACE standard to insure material has been treat to meet the primer/paint suppliers Technical Data Sheet or TDS requirement to assure system is prepared properly.

Silicon carbide grit blast media is brittle, sharp, and suitable for grinding metals and low-tensile strength, non-metallic materials. Plastic media blast equipment uses plastic abrasives that are sensitive to substrates such as aluminum, but still suitable for de-coating and surface finishing. Sand blast media uses high-purity crystals that have low-metal content. Glass bead blast media contains glass beads of various sizes.

Cast steel shot or steel grit is used to clean and prepare the surface before coating. Shot blasting is a method of preparation and is highly efficient on steel parts.

Prime all exposed areas of metal with the appropriate primer. Allow to dry complete prior to wrapping or stacking. Prime or treat aluminum, steel or cast iron should be checked by supplier for any damaged coating prior to shipment to Baldor.

NOTE: All Primer coating shall be tested by Baldor Electric looking at the marriage between the primed substrate to various top coats to assure proper Adhesion, Creepage, Abrasion & Blister ratings per appropriate ASTM or ISO standards to validate performance. Once approved, changes can only occur by submitting sample material per the Company's process requiring new samples submission.

SYSTEM C5 RATING

PRODUCT DESCRIPTION:



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1. A three-coat paint system specifically designed for industrial motors that will be subjected to harsh corrosive environments (C5M Marine Duty), consisting of the following:
 - A. Primer: Inorganic Zinc Rich Primer, applied at 1.5-2.5 mils DFT
 - B. Intermediate Coat: White Mastic, applied at 6.5-10 mils DFT
 - C. Topcoat: Polyurethane color TBD, applied at 1.5-2.5 mils DFT
 - D. All materials must be brought to ambient temperature prior to use.
2. Total Dry Film Thickness of the system shall be 9.5 mils minimum, 12.25 average, 15 mils maximum

SYSTEM	PRIMER	PERFORMANCE CHARACTERISTICS
High Performance Primer for Severe Duty Industrial/Marine Note: other systems are available which meets the performance criteria but not film build as noted per ISO12944-5 using special type epoxies as base coat	Organic or inorganic Zinc Primer - Zinc Phosphate	Bonds to mating surface allowing material to achieve ISO12944-5 (C5I, C5M rating) with addition intermediate coat and top coats. (Salt fog rating @ 1500+)

NOTE: all pretreat coating material and top coating materials shall be applied in accordance with the manufactures application instructions (TDS /PDS)

REPAIR PROCEDURE

REPAIR:

Damaged areas must be repaired using Epoxy Primer, Intermediate coat of Epoxy Mastic and topcoat of Polyurethane, sanding and application of all coats must be feather-edged. Always use a tack cloth to remove sanding dust and other contaminants before application of each coat. Large areas that have holidays in the primer shall be blasted to bare metal and properly recoated with Zinc Rich Primer, intermediate coat and topcoat.

A. Tape around affected area then sand using a 220-320 sand paper.

B. If the Inorganic Zinc Rich Primer is not showing, skip to Step C. If sanding removes all or part of the Inorganic Zinc Rich primer, apply a coat of Epoxy Primer to build up the total DFT of the zinc primer to 3-4 mils. Apply 1.25 wet mil thickness of Mastic to achieve 1 mil DFT. Allow to dry 15-30 minutes, then apply enough Mastic to build up the total DFT of the intermediate coat to 3-4 mils, followed by application of the topcoat.

C. If the intermediate coat of Mastic is not showing, go to step D, otherwise, apply an intermediate coat of Mastic over the Zinc Rich Primer. Apply enough Mastic to build up the total DFT of the intermediate coat to 3-4 mils, followed by application of the topcoat.



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- D. Superficial scratches that do not expose any primer or intermediate coat can be touched up by applying the topcoat using proper “feather edge” technique.
- E. Wait 3-4 days and use a rubbing compound to blend with the old coat and remove overspray

INSPECTION

INSPECTION:

- A. The Company’s Quality Team shall have designated inspectors to review the sandblasting and coating process and they must be given advance notice prior to the start of the process.
- B. The authorized inspector(s) will have the option to re-do any steps if they deem necessary
- C. Inspectors shall be given access to the work site during the progress of the work, and materials, equipment and any needed manpower shall be made available in order to properly conduct any inspection or testing
- D. The plant shall provide calibrated instruments that are in proper working order for use in the inspection
- E. Sand blast profile of 1.5-2.5 mils must be achieved, and this is determined by the use of surface profile comparator using visual comparison to SSPC-vis-1 color photographs, or NACE TM-01-70 visual standards and by use of KTA Press-O-Film
- F. Apply each coating using the recommended wet film thickness which is measured by using a wet film gauge. The dry film thickness of each coat shall be verified using a dry film thickness gauge (magnetic or electronic) before application of subsequent coats.
- G. The zinc rich coating must be tested for cure by using method described in Section 3.2 on Page 2.
- H. Each coat must be properly “flashed off” or dry before application of subsequent coats. The maximum dry time allowed per coat must not be exceeded.
- I. Time, Date, Temperature and Humidity must be recorded
- J. Properly Documented form must be submitted to Company Quality Assurance Department.
- K. Use Sample Inspection Log below, or other suitable form

MG9000-XM C5 SYSTEM INSPECTION LOG

Date:		Temperature:		Humidity:	
Procedure	Time Start	Time Finish	WFT / NWM	Profile / DFT	Inspected
Sandblasting					
Zinc Rich Primer					
Lot/Batch Numbers:					
Epoxy Mastic					
Lot/Batch Numbers:					
700 Series Polyurethane					



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Lot/Batch Numbers:					
Purchase Order Number:		Product Specification Number		Product Serial Number	
Specific color:					
Comments:					