MARINE COATINGS

NON-SKID COATING SERIES

HF-05 NON-SKID COATING FOR HELICOPTER DECK

Properties & Uses

HF-05 Non-skid Coating for Helicopter Deck is composed of D-31 Anticorrosive Primer, Z-2 Elastic Intermediate Layer, M-31 Non-skid Topcoat, M-33 Maintenance Topcoat and Non-skid Granules (16 mesh). The primer, intermediate layer, topcoat and maintenance finish are two-components polyurethane coatings, and the components are mixed evenly according to the specified ratio before use.

△Excellent anti-rust and corrosion resistance, and good elasticity and toughness.

△Excellent weather resistance.

△ Excellent solvent and chemical resistance, atmospheric aging resistance and wear resistance and large non-skid friction.

△Good adhesion of the coating/matrix and that of the coating/coating

Due to the thick coated elastic intermediate layer with excellent comprehensive performance, the coating has excellent impact resistance, and can adapt to thermal expansion and cold caused by heavy load impact and environmental temperature difference, and will not crack or fall off after long-term use.

It is mainly used for non-skid and protection of ship decks, helicopter take-off and landing decks and hangars, drilling platforms, ship gangways, etc. It can also be used for non-skid and protection of metal, wood, cement floor, and other devices and facilities. Especially suitable for non-skid and protection of steel equipment in the ocean and harsh environment.

Physical parameters

Product	**HF-05 Non-skid Coating for Helicopter Deck D-31 Primer**	**HF-05 Non-skid Coating for Helicopter Deck Z-2 Intermediate Layer**	**HF-05 Non-skid Coating for Helicopter Deck M-31 Topcoat**	**Polyurethane Deck Maintenance Finish (M-33)**
Color	Brown yellow	Iron red	Dark gray	Dark gray
Gloss	semi-gloss	semi-gloss	matt	semi-gloss
Standard Film(dry) Thickness, μm	77	1000-2000	180	40
Standard Film(wet)	142	1087-2174	360	80

Product	HF-05 Non-skid Coating for Helicopter Deck D-31 Primer	HF-05 Non-skid Coating for Helicopter Deck Z-2 Intermediate Layer	HF-05 Non-skid Coating for Helicopter Deck M-31 Topcoat	Polyurethane Deck Maintenance Finish (M-33)
Thickness, μm				
Theoretical Spreading Rate, g/m^2	200	1100-2200	466	150
Flash Point, ℃	29	52	29	28
Density, g/m^3(after mixing the two components)	1.4	1.1	1.2	1.1

Note: The spreading rate of M-31 topcoat is related to the particle size of non-skid sand. The theoretical spreading rate in the above table is calculated according to 16 mesh sand. The larger the particle size of sand, the more amount of coating.

Application Instruction

Product	Mixing Ratio（mass ratio）	23℃ Pot Life（h）
HF-05 Non-skid Coating for Helicopter Deck D-31 Primer	A:B=2:1	1.5
HF-05 Non-skid Coating for Helicopter Deck Z-2 Intermediate Layer	A:B=1:1	0.5
HF-05 Non-skid Coating for Helicopter Deck M-31 Topcoat	A:B=2:1	4
Polyurethane Deck Maintenance Finish (M-33)	A:B=4:1	7

Thinner

Special thinner

Application method

	Airless spray	Air spray	brush/roller
Spray Hole(Graco)	163T-621/623	1~2mm	
Spray Pressure(Mpa)	10~15	0.3~0.5	
Dilution Amount(volume)	0~5%	10~30%	0~30%
Tool cleaning	Special thinner		

Note: Airless spraying is for reference only, and can be adjusted when practical.

Drying Time

Product	Substrate Temperature (℃)	Surface Drying Time(min)	Hard Drying Time(h)	Recoating Interval	
				The Shortest Time(h)	The Longest Time(d)
HF-05 Non-skid Coating for Helicopter Deck D-31 Primer	5	80	12	12	30
	23	65	6	6	30
	35	50	3	3	30
HF-05 Non-skid Coating for Helicopter Deck Z-2 Intermediate Layer	5	1440	48	48	3
	23	360	16	16	2
	35	180	4	4	1
HF-05 Non-skid Coating for Helicopter Deck M-31 Topcoat	5	90	24	24	7
	23	80	20	20	5
	35	25	3	3	3
Polyurethane Deck Maintenance Finish (M-33)	5	100	5	8	Not required
	23	50	2.6	4	Not required
	35	30	1.5	2	Not required

Surface treatment

Steel plate should generally be blasted (blasted) to remove rust. Requires to achieve the white (according to the national standard GB / T8923-2011 to reach Sa 2.5 or higher). For small area construction or repair, only manual and power tools can be used to remove rust, and all floating rust can be removed and polished by knocking, shoveling, scraping, grinding, and brushing (according to national standard GB / T8923-2011 to reach St3.0 level). The roughness should not be lower than M level according to GB / T13288-2008. As long as the pre-coated steel with inorganic zinc paint is intact, it is not necessary to remove the pre-coat primer, but the rust, damage and oil and dust contaminated areas should be re-polished and cleaned.

Application conditions

The coating temperature range is -5~35 ℃, the humidity is less than 85%, and the bad weather such as rain, snow sand etc, which are not suitable for application. Construction sites, containers tools also shall not come into contact with water, alcohol, acid, alkali or amine substances, and special attention shall be paid to the prohibition of water. The construction site must be well ventilated.

Coating requirements

D-31 Primer is mixed evenly and then applied to the steel that has been derusted and oil-free in advance. It applied with two to three coats until it reaches the required thickness (generally 120 microns). The interval between channels should be short, and can be wet-on-wet application.

The mixed Z-2 is roller-coated on the primed steel, leveled, and the thickness is controlled to achieve the specified value. The interval between the intermediate layer and the last primer is as short as possible. If the interval time is too long, under the guidance of the technicians, the intermediate layer can only be applied after the primer surface has been treated. Generally, the first channel topcoat should be applied within 72 hours after the application of the intermediate layer, and the two components should be applied after mixing. During the construction of the first topcoat, throw anti-slip granules. After the topcoat is dry, remove the non-adherent granules and apply the second topcoat (dilution 30%). After hard drying, apply a coat of topcoat (20-30% dilution) to fix the anti-skid sand. The non-skid sand is sprinkled by hand during the first topcoat. Generally, the amount of the sand is about 5kg/m2. After the topcoat dries, sweep away and collect the excess sand, leaving it to be used in the next area. It takes 7 to 15 days to fully cure the supporting coating, and it should not be put into use prematurely.

Dosage reference

Primer: Three layers Dosage: 0.6 kg/㎡

Intermediate Layer: thickness about 1 mm Dosage: 1.1 kg/㎡

(For every 1 mm increase in the thickness, the dosage increases by 1.1 kg/m^2)

Topcoat: three or four layers Dosage: 1.3~1.5 kg/㎡

Non-skid granules: (16 mesh emery) Dosage: 3.0~3.5kg/m^2

Thinner: Dosage: 0.25kg/㎡

Coating systems

The primer and topcoat of the non-skid paint on the deck are well matched. When applying primer, the substrate should be derusted to remove the old paint film. However, as long as the coating is pre-coated with inorganic zinc paint, it is not necessary to remove the pre-coat primer.

Packing specification

Main agent: 20L or 10L

Curing agent: 10L or 2L

Product	**HF-05 Non-skid Coating for**	**HF-05 Non-skid Coating for**	**HF-05 Non-skid**	**Polyurethane Deck**

	Helicopter Deck D-31 Primer	Helicopter Deck Z-2 Intermediate Layer	Coating for Helicopter Deck M-31 Topcoat	Maintenance Finish (M-33)
Main agent（component A）	20L	10L	20L	10L
Curing agent（component B）	10L	10L	10L	2L

Storage

This product should be stored in a cool, dry and ventilated indoor warehouse, avoiding heat and fire sources. The packaging container must be kept closed, and the storage period at normal temperature is 18 months.

Safety

Coating ingredients and construction site are strictly prohibited from all fire sources, and maintain good ventilation. The application personnel must wear protective equipment to prevent inhalation of paint mist and damage to eyes and skin. It should be immediately washed with soapy water if the coating is splashed on the skin. If it is splashed into the eyes, it should be immediately rinsed with plenty of water, and then consult a doctor.

Statement

1. The protective effect of coatings depends largely on the coating application; Applcation factors such as surface treatment and coating film thickness will directly affect the service life of the coating. The user should meet the agreed construction conditions when using this product.

2. The data in this manual are obtained from theoretical values or accumulated through experiments. As the product continues to improve, some data may change without notice.

3. When the technical staff of the company is not on the application site, the company is only responsible for the quality of the coating product itself.

INDUSTRIAL COATINGS

NON-SKID COATING SERIES

HF-07 NON-SKID COATING

Properties & Uses

△Excellent anti-rust and anti-corrosion performance, excellent impact resistance, excellent medium resistance, atmospheric aging resistance and wear resistance, excellent non-skid properties.

△Good adhesion strength of the coating/matrix and that of the coating/coating.

△ It can adapt to thermal expansion and contraction caused by heavy load impact and environmental temperature difference.

△Long-term use will not crack or fall off.

HF-07 Non-skid Coating is mainly used in places where the surface of metal substrate has non-skid requirements, including ship decks, offshore oil drilling platforms, highway weighing equipment, helicopter platforms, safe passages, etc. It is also suitable for the safe non-skid driving of heavy-duty vehicles(machines) on the substrate surface.

HF-07 Non-skid Coating is divided into two types, type I is flat type, type Ⅱ is rough type. Both types of paint are composed of anticorrosion primer, non-skid topcoat and finish. The primer is a two-component modified epoxy coating, and the non-skid topcoat consists of two-component epoxy coating and non-skid granules (type I non-skid granules are individually packaged, type II non-skid granules are included in the main agent), the finish is a two-component acrylic polyurethane coating. Two-component paints must be mixed uniformly in accordance with the specified ratio before use.

Physical Parameter

	Properties	**HF-07 I Modified Epoxy Anticorrosive Primer**	**HF-07 I Modified Epoxy Non-skid Topcoat**	**HF-07 Finish**
HF-07 I Non-skid Coating	Color	Brown yellow	Dark gray	Dark gray
	Flash Point, ℃	30	34	38
	Gloss	High gloss	High gloss	Semi gloss
	Standard Film(dry) Thickness, μm	120	220	40
	Standard Film(wet)	200	350	80

	Properties	HF-07 I Modified Epoxy Anticorrosive Primer	HF-07 I Modified Epoxy Non-skid Topcoat	HF-07 Finish
HF-07 I Non-skid Coating	Thickness, μm			
	Theoretical Spreading Rate, g/m^2	300	400	150
	Density, g/m^3(after mixing the two components)	1.4	1.1	1.1

	Properties	HF-07 Modified Epoxy Primer	HF-07-II Non-skid Topcoat	HF-07 Finish
HF-07 II Non-skid Coating	Color	Orange	Dark gray	Dark gray
	Gloss	High gloss	High gloss	Semi gloss
	Standard Film(dry) Thickness, μm	160	750-3000 (with sand)	40
	Standard Film(wet) Thickness, μm	200	750-3000 (with sand)	80
	Theoretical spreading rate, g/m^2	300	3300	150
	Flash point, ℃	34	65	28
	Density, g/m^3(after mixing the two components)	1.4	1.8	1.1

Note: The spreading rate of the non-skid topcoat and the finish is related to the particle size of non-skid sand. The theoretical spreading rate in the above table is calculated according to 16 mesh sand. The larger the particle size of sand, the more amount of coatings.

Application Instruction

Product	Mix Ratio (mass ratio)	23 ℃ Pot Life (h)	Thinner and Tool Cleaning
HF-07 Ⅰ Modified Epoxy Anticorrosion Primer	A:B=20:3.5	3	Epoxy Thinner
HF-07 Ⅰ Modified Epoxy Non-skid Topcoat	A:B=2:1	4	Epoxy Thinner
HF-07 Modified Epoxy Primer	A:B=4:1	1	Epoxy Thinner
HF-07 Ⅱ Non-skid Topcoat	A:B=5:1	1	Epoxy Thinner
HF-07 Finish	A:B=4:1	7	Polyurethane Thinner

Application Method

	Airless spraying	air spraying	brushing/rolling
Spray Hole:(Graco)	163T-619/625	2~3mm	
Spray Pressure(Mpa):	15~35	0.3~0.4	
Dilution Amount(volume):	0~5%	5~15%	5~15%

Note: Airless spraying is for reference only and it can be adjusted in actual application.

Drying Time

Product	Substrate Temperature (℃)	Surface Drying Time(min)	Hard Drying Time(h)	Recoating Interval	
				The Shortest Time(h)	The Longest Time(d)
HF-07 I Modified Epoxy Anticorrosion Primer	5	120	24	24	5
	23	60	5	5	3
	35	40	3	3	1
HF-07 Ⅰ Modified Epoxy Non-skid Topcoat	5	1440	72	72	7
	23	960	21	24	5
	35	240	8	8	2
HF-07 Modified Epoxy Primer	5	840	48	48	5
	23	240	7	7	3
	35	150	4	4	1
HF-07 Ⅱ Non-skid Topcoat	5	780	42	-	-
	23	240	7	-	-
	35	140	4	-	-
HF-07 Finish	5	100	5	8	-
	23	50	2.6	4	-
	35	30	1.5	2	-

Surface Treatment

△Before the application of type II coating, the substrate must be sandblasted (pill) treated, and the rust removal requirements should reach Sa 2.5 level in GB/T8923.

△ Type I coatings can moderately relax the surface treatment level. If the area where sandblasting is not possible, manual and power tools can be used to remove rust, and all floating rust can be removed and polished by knocking, shoveling, scraping, grinding, and brushing.

△The roughness of the substrate which has been derusted, should not be lower than M level in GB/T13288.

△After derusting, carefully check that there should be no residue of water, oil, old paint, welding slag, etc. Pay special attention to the derusting quality of the weld.

Application conditions

The application temperature range is 5~35 ℃, the relative humidity is below 85%, the surface temperature of the substrate is higher than the dew point by 3 ℃, and the temperature and humidity should be measured near the substrate. When the surface temperature of the substrate is higher than 40 °C, it is recommended not to apply. It can not be painted in bad weather such as rain, snow, wind and sand.

Coating Systems

HF-07 non-skid coating is not compatible with other coating systems.

Packing Specification

Components	HF-07 Ⅰ Modified Epoxy Anticorrosion Primer	HF-07 Ⅰ Modified Epoxy Non-skid Topcoat	HF-07 Modified Epoxy Primer	HF-07 Ⅱ Non-skid Topcoat	HF-07 Finish
Main agent (component A)	20L	20L	10L	20L	10L
Curing agent (component B)	5L	10L	3L	4L	2L

Storage

This series of products should be stored in a cool, dry and ventilated indoor warehouse. Different single products have different storage periods. For details, see the product packaging.

Safety

Coating ingredients and construction site are strictly prohibited from all fire sources, and maintain good ventilation. The application personnel must wear protective equipment to prevent inhalation of paint mist and damage to eyes and skin. It should be immediately washed with soapy water if the coating is splashed on the skin. If it is splashed into the eyes, it should be immediately rinsed with plenty of water, and then consult a doctor.

Statement

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INDUSTRIAL COATINGS

NON-SKID COATING SERIES

HF-09 NON-SKID COATING

Properties & Uses

HF-09 Non-skid Coating adopts polyurethane system, cured with aliphatic isocyanate, and added light-weight sand as non-skid particles. It consists of four components: base material (A), curing agent (B), non-skid particles (C) and thinner (D).The density of the film is low, light, and the load on the substrate is small.

△Excellent non-skid, wear-resistant and scratch-resistant.

△Excellent weather resistance.

△Excellent solvent and chemical resistance, especially resistant to various highly corrosive aviation hydraulic oil, lubricating oil, fuel oil, etc.

It is suitable for places that require non-skid, but have strict requirements for coatings weight. The non-skid particles with corresponding particle size can be selected according to the requirements of the use environment to form a surface with a certain roughness.

Physical parameters

Color: white, yellow, green, etc., adjustable according to customer needs.

Gloss: flat

Standard Film Thickness: Single-pass dry film 60 μm～120 μm; applying 2～3 passes to dry film thickness 150 μm～250 μm

Theoretical Coverage: 240g / m^2 per pass

Flash Point: 27 ℃

Density: about 1.17g / cm^3

Mixing Ratio：HF-09Non-skid coating A: B: C = 28: 7: 4 (weight)

Pot Life(23 ℃): 3.5h

Thinner: HF-09 non-skid coating (D)

Application Method:	Air spray	brush / roller
Spray Hole:	2 ~ 3mm	
Spray Pressure(Mpa):	0.3~0.4	
Dilution Amount(volume):	5～15%	5～15%

Drying Time

Substrate Temperature (℃)	Surface Drying Time(min)	Hard Drying Time(h)	Recoating Interval	
			The Shortest Time(h)	The Longest Time(d)
5	360	20	24	15
23	120	5	5	7
35	60	3	3	4

Surface treatment

The surface of the substrate coated with primer or intermediate layer must be clean and dry, and the surface can be wiped with HF-09 non-skid coating (D).

Application conditions

The application temperature range is 5～35 ℃, the relative humidity is below 85%, the surface temperature of the substrate is higher than the dew point by 3 ℃, and the temperature and humidity should be measured near the substrate. When the surface temperature of the substrate is higher than 40 °C, it is recommended not to apply. It can not be painted in the bad weather such as rain, snow, wind and sand.

Coating Systems

Previous coating: HF-07 modified epoxy primer or HDY-H06-Y010 chrome-free high solid content epoxy primer.

Packing specification

HF-09 Non-skid Coating (A): 2.8kg/barrel

HF-09 Non-skid Coating (B): 0.7kg/barrel

HF-09 Non-skid Coating (C): 0.4kg/barrel

HF-09 Non-skid Coating (D): 1.1kg/barrel

Storage

This product should be stored in a cool, dry and ventilated indoor warehouse with a storage period of one year at room temperature.

Safety

Coating ingredients and construction site are strictly prohibited from all fire sources, and maintain good ventilation. The application personnel must wear protective equipment to prevent inhalation of paint mist and damage to eyes and skin. It should be immediately washed with soapy

water if the coating is splashed on the skin. If it is splashed into the eyes, it should be immediately rinsed with plenty of water, and then consult a doctor.

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