

INDUSTRIAL COATINGS

FLAME RETARDANT COATINGS

INDOOR INTUMESCENT FLAME RETARDANT COATINGS FOR STEEL

STRUCTURES

Functions & Applications

High performance, ultra-thin intumescent flame-retardant coatings, when applied on steel structures, the fire resistance could be greatly improved.

- △Fire resistance, easy for application
- △None asbestos fibres
- △Harmless during operation
- △Passed “GB 14907 Flame retardant coatings for steel structures” test
- △With thickness of 2 mm, fire resistance capacity is 2 hours. With thickness of 1 mm, fire resistance capacity is 1 hour.

Technical Data

Color	White and other colors
Gloss Level	Flat light
Typical Thickness	Wet film: 500 μm per layer Dry film: 350 μm per layer
Density	1.4 g/cm ³
Flash Point	26 °C
Theoretical Coverage	2 m ² /L

Applications

Ratio	One component
Thinner	Special thinner for intumescent coatings
Airless Spray	Aperture (Graco): 163T-621/623; Pressure: 10-15 MPa; 0%-5% Thinner
Air Spray	Aperture: 2-3 mm; Pressure: 0.3-0.4 MPa; 5%-15% Thinner
Trowel	5% Thinner

Cleaner

Special thinner for intumescent coatings

Parameters of airless spray are for recommendation and can be adjusted when application.

Drying Time

Surface temperature (°C)	To touch (h)	Hardness (h)	Recommended over coating intervals	
			Min (h)	Max(d)
5	8	24	24	Extended
20	4	16	8	Extended
30	2	8	4	Extended

Surface Treatment

Surface coated with primer or intermediate paint should be cleaned, dried, non-polluted pre-painting surface, use proper cleaner or pressure water to remove pollution. When application on epoxy or PU, surface should be roughed.

Construction Conditions

Application temperature 5~40°C, max humidity $\leq 85\%$, steel temperature at least 3°C (5 °F) higher than air dew point. When surface temperature higher than 40 ° C, application should suspend. Raining, snowing, heavy storm, or other inclement weather, application should stop.

System Matching

1. Primer: Matching various primer coatings, priority of epoxy amide undercoat and epoxy zinc-rich undercoat, not exceed 75 μm in thickness.
2. Topcoat: Generally, topcoat is needed, particularly for constructions outdoor and offshore. The product could match most of the top coatings, especially epoxy top finish and polyurethane top finish. Top finish should be paint after the product curing and surface cleaned.

Package 25kg

Storage

The product should be stored in cool, dry, ventilated and indoor, room temperature for 12 months.

Safety

Mixing and application site must out of any fire source and ventilated. Construction workers should wear protective equipment to protect from spray fog which will harm eyes and skin. When splashed on skin, detergent must be used to clean. When splashed into eyes, rinse immediately with plenty of water, and seek medical attention.

Declaration

1. Any protecting results are mostly relied on operation, surface treatment, film thickness and other operation conditions will affect coating lifetime. Clients should following the application conditions during operation.
2. Parameters in the instruction were obtained by theory or experience, with the improvement of products, some parameters might be adjusted without notification.
3. When the technician is absent, MCRI is only responsibility for the product itself.



INDUSTRIAL COATINGS

FLAME RETARDANT COATINGS

OUTDOOR INTUMESCENT FLAME RETARDANT COATINGS FOR STEEL

STRUCTURES

Functions & Applications

Used outdoor, high performance, ultra-thin intumescent flame-retardant coatings, when applied on steel structures, the fire resistance could be greatly improved.

- △Fire resistance, easy for application
 - △None asbestos fibres
 - △Harmless during operation
 - △Passed “GB 14907-2018 Flame retardant coatings for steel structures” test
 - △With thickness of 3 mm, fire resistance capacity is 2 hours.
- When applied outdoor, should use topcoat.

Technical Data

Color	White and other colors
Gloss Level	Flat light
Typical Thickness	Wet film: 500 μm per layer Dry film: 350 μm per layer
Density	1.4 g/cm ³
Flash Point	26 °C
Theoretical Coverage	2 m ² /L

Applications

Ratio	One component
Thinner	Special thinner for intumescent coatings
Airless Spray	Aperture (Graco): 163T-621/623; Pressure: 10-15 MPa; 0%-5% Thinner
Air Spray	Aperture: 2-3 mm; Pressure: 0.3-0.4 MPa; 5%-15% Thinner

Trowel 5% Thinner
 Cleaner Special thinner for intumescent coatings

Parameters of airless spray are for recommendation and can be adjusted when application.

Drying Time

Surface temperature (°C)	To touch (h)	Hardness (h)	Recommended over coating intervals	
			Min (h)	Max (d)
5	8	24	24	Extended
20	4	16	8	Extended
30	2	8	4	Extended

Surface Treatment

Surface coated with primer or intermediate paint should be cleaned, dried, non-polluted pre-painting surface, use proper cleaner or pressure water to remove pollution. When application on epoxy or PU, surface should be roughed.

Construction Conditions

Application temperature 5~40°C, max humidity ≤85%, steel temperature at least 3°C (5 °F) higher than air dew point. When surface temperature higher than 40 °C, application should suspend. Raining, snowing, heavy storm, or other inclement weather, application should stop.

System Matching

1. Primer: Matching various primer coatings, priority of epoxy amide undercoat and epoxy zinc-rich undercoat, not exceed 75 μm in thickness.
2. Topcoat: Generally, topcoat is needed, particularly for constructions outdoor and offshore. The product could match most of the top coatings, especially epoxy top finish and polyurethane top finish. Top finish should be paint after the product curing and surface cleaned.

Package 25kg

Storage

The product should be stored in cool, dry, ventilated and indoor, room temperature for 12 months.

Safety

Mixing and application site must out of any fire source and ventilated. Construction workers should wear protective equipment to protect from spray fog which will harm eyes and skin. When splashed on skin, detergent must be used to clean. When splashed into eyes, rinse immediately with plenty of water, and seek medical attention.

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INDUSTRIAL COATINGS

FLAME RETARDANT COATINGS

EPOXY INTUMESCENT FLAME RETARDANT COATINGS

Functions & Applications

This is a kind of high performance, high build, solvent free, reinforced epoxy intumescent flame-retardant coatings. Used outdoor, especially in hydrocarbon fire, with excellent environment tolerance and solvent resistance. Fire resistance for inland petrochemical facilities and offshore platform.

△This intumescent coatings act as an insulating thermal protection from cellulose fire, hydrocarbon fire, and jet fire.

△This intumescent coating protects steel structures, diaphragm steel parts, and vessels to maintain capacity while under hydrocarbon fires.

△Passed “GB 14907-2018 Flame retardant coatings for steel structures” test.

△With thickness of 6 mm, hydrocarbon fire resistance capacity is 0.5 hour.

Technical Data

Color	White and other colors
Gloss Level	Not applicable
Typical Thickness	Depends on the requirement
Density	1.2 g/cm ³
Flash Point	Part A ≥110 °C Part B ≥110 °C

Applications

Each suit must be stored in 23 ° C (73 ° F) for 24 hrs, and under power stirring ultimately before mixing. Before painting, every suit in one serious must be mixed completely.

Ratio	Amount for each suit, except for scrape coating. A:B=5:1 (Weight)
Airless Spraying	Applied for extensive area painting
Scrape	Applied for small area painting

Diluent	Corollary diluent, applied for pre-mixture or scrape
Detergent	Corollary detergent
Suspension	Don't leave the coating inside flexible hose, spray gun, or other instruments. Clean all the instruments with corollary detergent thoroughly.
Clean	After painting, clean all the instruments with corollary detergent thoroughly

Parameters of airless spray are for recommendation and can be adjusted when application.

Drying Time

Surface temperature (°C)	To touch (h)	Hardness (h)	Recommended over coating intervals	
			Min (h)	Max(d)
15	8	18	4	7
25	5	16	3	7
40	2	6	2	4

Surface Treatment

It should be cleaned, dried, non-polluted pre-painting surface, treated and judged by ISO 8504: 1992. The intumescent coatings can only spray on the surface treated following Sa21/2 (ISO 8501-1: 1998) or SSPC-SP10 standard.

Construction Conditions

Application temperature 5~40°C, max humidity ≤85%, steel temperature at least 3°C (5 °F) higher than air dew point. When surface temperature higher than 40 °C, application should suspend. Raining, snowing, heavy storm, or other inclement weather, application should stop.

System Matching

1. Primer: Matching various primer coatings, priority of epoxy amide undercoat and epoxy zinc-rich undercoat, not exceed 75 μm in thickness.
2. Topcoat: Generally, topcoat is needed, particularly for constructions outdoor and offshore. The product could match most of the top coatings, especially epoxy top finish and polyurethane top finish. Top finish should be paint after the product curing and surface cleaned.

Package Part A 15kg; Part B 3kg

Storage

The product should be stored in cool, dry, ventilated and indoor, room temperature for 12 months.

Safety

Mixing and application site must out of any fire source and ventilated. Construction workers should wear protective equipment to protect from spray fog which will harm eyes and skin. When splashed on skin, detergent must be used to clean. When splashed into eyes, rinse immediately with plenty of water, and seek medical attention.

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INDUSTRIAL COATINGS

FLAME RETARDANT COATINGS

WATERBORNE INTUMESCENT FLAME RETARDANT COATINGS

Functions & Applications

Waterborne, high performance, ultra-thin intumescent flame-retardant coatings, when applied on steel structures, the fire resistance could be greatly improved.

- △Fire resistance, easy for application
- △None asbestos fibres
- △Harmless during operation
- △Passed “GB 14907-2018 Flame retardant coatings for steel structures” test
- △With thickness of 4 mm, fire resistance capacity is 1.5 hours.

Technical Data

Color	White and other colors
Gloss Level	Flat light
Typical Thickness	Wet film: 500 μm per layer Dry film: 350 μm per layer
Density	1.4 g/cm ³
Flash Point	26 °C
Theoretical Coverage	2 m ² /L

Applications

Ratio	One component
Thinner	Deionized water
Airless Spray	Aperture (Graco): 163T-621/623; Pressure: 10-15 MPa; 0%-5% Thinner
Air Spray	Aperture: 2-3 mm; Pressure: 0.3-0.4 MPa; 5%-15% Thinner
Trowel	5% Thinner
Cleaner	Tap water

Parameters of airless spray are for recommendation and can be adjusted when application.

Drying Time

Surface temperature (°C)	To touch (h)	Hardness (h)	Recommended over coating intervals	
			Min (h)	Max (d)
5	8	24	24	Extended
20	4	16	8	Extended
30	2	8	4	Extended

Surface Treatment

Surface coated with primer or intermediate paint should be cleaned, dried, non-polluted pre-painting surface, use proper cleaner or pressure water to remove pollution. When application on epoxy or PU, surface should be roughed.

Construction Conditions

Application temperature 5~40°C, max humidity $\leq 85\%$, steel temperature at least 3°C (5 °F) higher than air dew point. When surface temperature higher than 40 ° C, application should suspend. Raining, snowing, heavy storm, or other inclement weather, application should stop.

System Matching

1. Primer: Matching various primer coatings, priority of waterborne epoxy amide undercoat and waterborne epoxy zinc-rich undercoat, not exceed 75 μm in thickness.
2. Topcoat: Generally, topcoat is needed, particularly for constructions outdoor and offshore. The product could match most of the top coatings, especially waterborne epoxy top finish and waterborne polyurethane top finish. Top finish should be paint after the product curing and surface cleaned.

Package 25kg

Storage

The product should be stored in cool, dry, ventilated and indoor, room temperature for 12 months.

Safety

Mixing and application site must out of any fire source and ventilated. Construction workers should wear protective equipment to protect from spray fog which will harm eyes and skin. When splashed on skin, detergent must be used to clean. When splashed into eyes, rinse immediately with plenty of water, and seek medical attention.

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INDUSTRIAL COATINGS

FLAME RETARDANT COATINGS

CEMENT FLAME RETARDANT COATINGS

Functions & Applications

Composed with thermal insulation materials and inorganic hydrogel materials, waterborne, applied for architecture and steel structure, forming insulation layer, to improve the fire resistance for steel structure.

- △Low thermal conductivity, excellent fire resistance
- △Impact resistance, hard to peel off
- △Water resistance, environmental tolerance, impermeability, could use in humid environment
- △Trowel or spray, easy for application
- △None asbestos fibres
- △Harmless during operation
- △Passed “GB 14907-2018 Flame retardant coatings for steel structures” test
- △With thickness of 33 ± 2 mm, fire resistance capacity is 3 hours.

Technical Data

Color	Gray
Gloss Level	Matt
Dry Film Density	640 kg/cm ³

Applications

Pot Life	1 hr
Procedure	Trowel or spray, application should be taken out by multi layers, each layer should be 3-5mm, till the required thickness. Intervals through different layer is about 24h, surface of interlayer should be roughed to improve adhesion.
Airless Spray	Aperture: 6-8 mm; Pressure: 0.3-0.6 MPa
Cleaner	Tap water

Parameters of airless spray are for recommendation and can be adjusted when application.

Drying time To touch 24h

Surface Treatment

Surface should be cleaned and remove all the pollution before application, surface of the steel structure should be clean and coated with primer.

Construction Conditions

Application and after 24h, temperature should be 5~35°C. Ultra-dry or torridity, conserve by watering. Conservation period must over 28d. Not construction when environment temperature lower than 5°C, higher than 35 °C, or wind velocity over 5 m/s.

System Matching

1. Primer: Matching various primer coatings, priority of waterborne epoxy amide undercoat and waterborne epoxy zinc-rich undercoat, not exceed 75 μm in thickness.
2. Topcoat: Generally, topcoat is needed, particularly for constructions outdoor and offshore. The product could match most of the top coatings, especially waterborne epoxy top finish and waterborne polyurethane top finish. Top finish should be paint after the product curing and surface cleaned.

Remarks

Mix whole package for application.

It should be sealed during transport and storage, to avoid raining and wetting, materials will be damaged by damping.

Package Powder: 25kg; Emulsion: 25kg

Storage

The product should be stored in cool, dry, ventilated and indoor, room temperature for 12 months.

Safety

Mixing and application site must out of any fire source and ventilated. Construction workers should wear protective equipment to protect from spray fog which will harm eyes

and skin. When splashed on skin, detergent must be used to clean. When splashed into eyes, rinse immediately with plenty of water, and seek medical attention.

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