INTRODUCE

GREENTEAM, which is located in An Nan District, Tainan city, produces paint as our main products. GREENTEAM has advanced technology, testing method, facilities, professional and experienced technical team, and cooperation with advanced coating companies for years. We are focusing on more efficient production and new products investigation.

GREENTEAM follows the principle “Green, environment friendly and advanced quality”, and focuses on affection on human beings and environment by coating. The unchangeable target is to let everyone live with harmless and quality environment. Our products used widely on internal and external wall, floor, road, metal, fireproof, plastic fireproof, and industry usage, etc. Based on safety, and environment friendly, we made products various, and gorgeous of color, anti mould and bacteria, and durable. Not only gained the certificate of SGS test, but also UKAS, ISO9001, and 2000, global standard test. We have been selling our products to several advanced cities and look for more business partners around the world.

PRODUCT SERIES

- Water based heat resistant, and heat preservation paint
- Rock paint
- Epoxy floor coating
- Water based heat resistant, and energy saving mortar
- Road mark paint
- All kind of package primer
- Water proof & heat resistant paint
- Water based paint
- Anti-bacterial and heat preservation paint
- Rubber Paint
- Anti-corrosion paint
- High temperature tolerant paint
- waterproof paint
- fire retardant paint
- transparent waterproofing coating
- water based environmental friendly nano paint
**MEET THE FIRE-RETARDANT PAINTS**

- Fire retardant coating is used on wood, MDF, paper board, plastic, wire and metal. It offers the benefits for not only decoration but also fire protection. With fire resistant coating, fire is limited and can not expand wildly. It can not only protect the building but also gain more valuable time for firefighters.

- Why fire resistant coating works?

  It needs 3 factors to continue fire. Oxygen, heat, and combustible objects. We can remove 1 of 3 factors to extinguish fire.

  1. Coating is non-combustible or hard-combustible, and can isolate subjects from air.
  2. Heated coating will release non-combustible noble gas, reduce the percentage of Oxygen in the air.
  3. Burning is considered that chain reaction occurred by Radicals.

    Fire retardant paint which contains nitrogen or Phosphor, will release some active Radicals and bond with organic radicals of objects. It will block the chain reaction and reduce the speed of flame.

  4. Intumescing fire retardant coating will foam by fire, and heat can not penetrate a thick layer of non-combustible foam to subjects.

- Intumescing fire retardant coating is the main part of fire retardant products. It will conduct cross-linking by fire and foam a thick foam layer. It not only blocks the oxygen but also retards the heat to objects. Moreover, it is a heat consuming process during foaming. That makes the object cooler. That is why it performs excellent fire retard.

- According different objects, we developed ENV-3G18, ENV-3G28, and ENV-3G68 three foaming fire retardant paints. The process is as follows,

  ENV series paint is normal paint in room temperature. With heat or fire, the film will foam a thick Honeycomb-like, carbon layer. The thickness is 10~100 times thicker than the original. It can but the heating from the flame, then perform the retardance. On the other hand, the physical and chemical interactions by flame will absorb considerable heat, and also perform the retardance. The organic foam layer will turn into carbon and isolate the objects from air. Moreover, in high temperature, it releases non-combustible gas, like Ammonia, water, etc, and decreases the density of oxygen, and then retards the flame.
ENV-3G18III is a decorative fire retardant paint. When it is applied on combustible objects, it can decorate the objects and protect them from flame and slow down the spread speed of fire, then protect the objects.

ENG-3G68III quality meets “General Technical Specification for Fire Retardant in Surface coating” of GB12441-1998, and approved by the Fire Department of Municipal Public Security, and SGS CNS6532. This product is applied on combustible objects like wood, plastic, paper board, fiber board, etc, in buildings, such as hotels, restaurants, factories, companies, theaters, hospitals, schools, and so on.

Components: special fire resistant resin, fire retardant additives, pigment, and several special additives

Characteristics: non-halogen, asbestos free, little smoke, no poison, excellent bonding strength, high hardness, variety of colors, and easy to use

<table>
<thead>
<tr>
<th>Item</th>
<th>Index</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time of fire retardance</td>
<td>24 min</td>
<td>Pass the first grade</td>
</tr>
<tr>
<td>Flame spread rate</td>
<td>10</td>
<td>Pass the first grade</td>
</tr>
<tr>
<td>Weight lost</td>
<td>2.8g</td>
<td>Pass the first grade</td>
</tr>
<tr>
<td>Carbonated volume</td>
<td>0</td>
<td>Pass the first grade</td>
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</table>

Coating weight: 500-750g/m2
Coating thickness: at least 0.45mm
Dry time: 30 minutes for finger dry, and 12 hours for complete dry
Packing: 1 gallon, 4kg/ tin, or 5 gallon, 20kg/ tin
Application method
1. Make sure surface of object is clean. If there are any cracks or holes, oil free, it is needed to be fixed.
2. Add 10% pure water and mix them even.
3. Use roller brush, or brush to the standard thickness
4. Apply 0.1~0.25mm only every time. Apply the 2nd layer when the 1st layer is dry. After that, apply every 4 hours in circle until the layer reaches the standard thickness.
5. In condition, the temperature is 5~38°C and moisture is lower then 90%, the layer is not able to be contacted by water.

Notes
1. Add 10% pure water is necessary to avoid crack. It is not suggested to add water more then 12%, it will decrease the bonding strength and hardness.
2. The best way to apply is using brushes or rollers. The layer is not suggested to be thinker than 0.25mm, or it will finalize in bubbles or cracks.
3. Solid content of the painting is high. Mix it even before application to avoid sediment and reach the best result.
4. The product is not water-proof. A water-proof coating is necessary, if the water-proof performance is needed.
5. Avoid splashing paint on eyes, and wash with water if the paint contacts eyes.
6. Store in cool and dry place. Shelf life: 1 year
Steel is non-combustible material. It has anti-earthquake, anti bending, etc strong features. In present application, it can increase many aspects of buildings and fix the disadvantages of concrete or other raw materials. Also, it offers mordent, and stylish feelings to construction. Therefore, it is used widely in big buildings, such as Skyscrapers, factories, warehouses, airports, etc. However, there are some unchangeable disadvantages of steel regarding fire retardant. Many physical conditions will become weaker dramatically, according the increase of temperature.

Steel will be bended and weaken by the temperature 450-650 °C. Therefore, it will become unable to take the weight of all structures. It is the main reason to cause collapse. In average, it takes at most 15 minutes to damage the strength of normal steel pillars.

In order to fix the disadvantages of steel applications, it is necessary to add fire retardant process. The purpose is to increase the steel ability of fire tolerance to reach the standards. One of the best ways is using paint. Fire retardant paint can protect and decorate steel objects, apply easily, light, and economical. It is an advanced fire retardant measure.

ENG-3G28III quality meets “General Technical Specification for Fire Retardant in Steel” of GB14907-2002, and approved by the Fire Department of Municipal Public Security, and SGS CNS6532. This product can be applied on steel pillars in clean rooms, airports, museums, factories, hotels, shopping malls, sport centers, power plants, theaters, etc.

Components: special fire resistant resin, fire retardant additives, pigment, and several special additives
Characteristics: non-halogen, asbestos free, little smoke, no poison, excellent bonding strength to steel, anti-corrosion, anti-rusty, decorative, variety of colors, and easy to use
### Fire retardant limit and coating weight

<table>
<thead>
<tr>
<th>Fire retardant limit (min)</th>
<th>30</th>
<th>60</th>
<th>90</th>
<th>120</th>
<th>150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness (mm)</td>
<td>0.6</td>
<td>1.2</td>
<td>1.8</td>
<td>2.4</td>
<td>3</td>
</tr>
<tr>
<td>Coating weight (kg/m²)</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
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#### BEFORE TEST

![Before Test Image](image1.png)

照片 1 耐火试验前试件情况

#### AFTER TEST

![After Test Image](image2.png)

照片 2 耐火试验结束时试件情况
Fire retardant coating for cable is one kind of special coating and applied to surface of cable. When heated by flame, it will intumesce, and then become an insulating layer of foam with the thickness of 20mm~30mm to stop the fire spread and keep the cable in good condition with specific time.

Because fire retardant cable coating is used for important power system, they request good physical and weather resistance. Fire retardant cable coating is solvent based intumescing coating. Apply standard thickness to ensure fire retardant performance.

ENG-3G68III quality meets “General Technical Specification for Fire Retardant Coating of Cable” of GA181-1988, and approved by the Fire Department of Municipal Public Security. This product is applied on electric power facilities, such as power plants, power stations, factories, etc.

- Components: special fire resistant resin, fire retardant additives, pigment, and several special additives
- Characteristics: non-halogen, asbestos free, little smoke, no poison, excellent bonding strength to cable, excellent elongation, anti-corrosion, weather resistance, variety of colors, decorative and easy to use
- Dry time: 60 minutes for finger dry
- Coating thickness: 2mm±0.2
- Packing: 1 gallon, 4kg/ tin, or 5 gallon, 20kg/ tin

<table>
<thead>
<tr>
<th>Flame retardancy (m)</th>
<th>1.4</th>
<th>1.1</th>
<th>0.8</th>
<th>0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thickness (mm)</td>
<td>0.6</td>
<td>1.2</td>
<td>1.8</td>
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<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Application method
1. Make sure the cable surface is clean, oil free, salt free and dry.
2. Roller brush, hand brush or spray.
3. Mixing with a stick before using, add thinners if necessary.
4. Every time apply 0.2~0.4mm only. Apply the 2nd layer when the 1st layer is dry. After that, repeat applying every 8 hours until the layer reaches the standard thickness.
5. The thickness of fire resistant coating is approximate 2mm±0.2
6. Curing days: 20 days.
7. The temperature of working condition is suggested between 5°C and 35°C

Notes
1. Avoid splashing paint on skin
2. Keep the environment ventilating
3. Storage in cool and dry condition and kept away from flame.
   Shelf life: 1 year
4. Solid contents of the painting is high, stir it even before application to avoid sediment

BEFORE TEST   AFTER TEST