

# 防火漆 Steelguard FM 550 方案书

## Steelguard FM 550 Solution

PPG 涂料钢结构纤维素类膨胀型防火涂料  
PPG Intumescent Coatings System for  
Cellulosic Fire Protections of Structural Steel



|                           |  |
|---------------------------|--|
| 项目 Project                | 机场   |
| 日期 Date                   | July 2015  |
| 地点 Location               |  |
| 提交人 Submitter             |  |
| 涂料公司<br>Coatings Supplier | 庞贝捷涂料（昆山）有限公司<br>PPG Coatings (Kunshan) Co., Ltd |
| 版本 Version                | V1   |

## 1. 介绍 Introduction

### 1.1 PPG 工业防护与船舶涂料有限公司 PPG Protective & Marine Coatings

提供无以伦比的性能和保护Unrivaled performance and protection

#### 全球广泛的业绩经验，可靠的产品Global experience and reliability

PPG工业与防护涂料有限公司是一家世界领先的工业与船舶涂料公司。我们开发的产品能够有效保护用户财产，所涉及的领域包括PPG Protective & Marine Coatings (PPG) is a world leader in protective and marine coatings. We develop products that protect customers' assets in some of the world's most demanding markets and environments including:

- 民用基础设施Civil Infrastructure
- 海洋工程Offshore
- 石化Petrochemical
- 电力Power
- 船舶新造Marine New-Build
- 船舶维修Marine Dry Dock
- 港机Port Machinery
- 铁路Rail

PPG涂料产品具有优异的性能，无论是业主、承包商、建造商还是施工单位，我们的宗旨是解决客户的后顾之忧Our coatings provide unrivaled performance for asset owners, contractors, fabricators and applicators across the globe, helping our customers meet the challenges they face today and tomorrow.



**STEELGUARD®**

经验、创新、诚信 - PPG是您最理想的合作伙伴 **Experience, innovation and integrity** - that is what makes PPG the ideal coatings partner.

## 1.2 在纤维素火灾中保护钢结构 **Protection of steel structures from cellulosic fire**

特殊的配方帮助挽救生命和保护财产安全

### **Specially formulated to help save lives and protect assets**

Steelguard产品系列属于膨胀型防火涂料，适合不同等级的防火需求、耐候性和施工工艺。

*STEELGUARD* is a complete range of intumescent coating systems for various grades of fire protection, climatic exposure conditions and application techniques.

作为市场领先的优秀涂料产品，Steelguard FM 550是一种特殊配方，提供优越防火性能的防火涂料。它适合各种民用建筑，尤其适合外露（户外）钢结构比如购物中心、机场航站楼、体育馆和学校等。火灾一旦发生其破坏性是不可低估的。如果钢结构未得到任何保护，那么通常会在短短的几分钟内受高温影响失去稳定性而造成垮塌。These market-leading coatings are specifically formulated to provide superb fire protection for civil buildings, particularly appropriate where exposed steel structures have been used as part of the design in buildings such as shopping centers, airport terminals, sports stadia and schools. But if a fire strikes, the potential for disaster is frightening. Within minutes unprotected steel can reach the critical temperature that causes it to lose stability and collapse.

Steelguard FM 550防火涂料产品的价值就在于，在火灾中，它能够提供额外的或延长人们至关重要的逃生和灭火的时间，从而有效保护人生安全与财产安全。The value of *STEELGUARD FM 550* intumescent coatings is that they provide the vital extra time to help people escape and also allow fire fighters to save the building itself.

### **第三方认证-全球认可 Independent certification - international approval**

PPG获得ISO 9001的认证，生产的产品质量在全球范围内广受好评。Steelguard FM 550产品在符合各类国际性的防火标准和规范的同时也通过了中国国内的消防的认证。另外，因为PPG每个产品的批次都是经过统一的原材料管理、生产程序和质控过程，所以在任何时候都能确保您获得的产品，是具备同样优异的产品品质，并确保防火涂料应有的防火性能等级。

PPG is certified to ISO 9001, recognized around the world as a sign of quality. *STEELGUARD* intumescent coatings meet international and Chinese standards in fire protection, with each product undergoing a rigorous, exhaustive testing process. In addition, every production batch is checked against its specifications -so you can be assured of consistent quality and accurate fire protection levels at all times.

**Steelguard FM 550将给您带来 Benefits of the STEELGUARD<sup>®</sup> FM 550:**

- 提供钢结构优异的防火性能 Excellent fire protection for steel structures
- 在合适的面漆保护下提供高等级的大气环境下的防锈性能 High levels of corrosion protection against atmospheric conditions with suitable top coat
- 通用性更好、性价比更高 Economical and versatile
- 更平整的装饰性外观 Smooth surface – excellent aesthetics
- 面漆可以有更多颜色的选择 Topcoats available in many colors to match building design
- 提供工程咨询支持 Engineering support
- 全球通行标准测试并符合中国本土规范 Tested to various standards & certified to local requirements
- 获得第三方独立机构的质量和性能认证 Independently approved



**STEELGUARD<sup>®</sup>**

民用建筑防火方案的领导者

The leading fire protection solution for civil building projects

**Steelguard – 专为民用建筑研发**

**STEELGUARD – specifically developed for civil buildings**

- 机场航站楼 Airport terminals
- 音乐厅 Concert halls
- 厂房钢结构 Factories
- 医院 Hospitals
- 酒店 Hotels
- 学校 School buildings
- 购物中心 Shopping centers



- 体育馆Sports stadia
- 火车站Train stations
- 仓库钢结构Warehouses

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### 防火工程技术咨询支持 **Engineering support**

我们的工程师是PPG打造的膨胀型防火保护方案的专家，并且与市场的最新需求与防火等级需求顺应。他们所具备的工程经验能够帮助我们的客户，无论是在项目设计和开发初期，还是在项目开展的过程中，都能提供必要的涂层解决方案，直到项目完工。Our engineers are fully trained in intumescent fire protection and are up to date with all relevant industry standards and fire ratings. They also have the engineering capability to help customers from the early stages of development, guiding them through the specification process and providing continuing support right through to project completion and beyond.



### **STEELGUARD®**

#### 提供最大程度的防护 – 漂亮的装饰性外观 **Maximum protection – superb aesthetics**

*Steelguard*防火涂层符合当今建筑师和设计师对于外观的理想需求，尤其当外露钢结构成为主流时。高效的防火涂料*Steelguard*同样也提供非常平整的表面，配合多彩的面漆，可以广泛的满足建筑学上的装饰性外观需求。*STEELGUARD* coatings are ideally suited for today' s architects and designers, where any exposed steel is used as a design feature. These highly protective intumescent coatings also provide an extremely smooth surface that can be top-coated with colors to suit a wide range of aesthetic requirements.

*Steelguard* FM 550的防火机理（也即它能带来的好处）：是在高温下，膨胀涂层防火涂料从一层薄薄的、轻质的涂层开始，受热然后涂层内部逐步发生化学反应，整个涂层膨胀，最后生成一层厚的、泡沫

状炭层，这个炭层产生隔热作用，最终能够在一定时间内有效降低火灾<sup>6025</sup>温度对受保护钢结构的破坏。也正是这个隔热作用个，使得钢结构在一定时间内保持足够的稳定性，产生额外的抢救时间来挽救生命和保护财产安全。The great benefit of intumescent coatings work is that they<sup>6025</sup> expand at high temperatures, from a very thin, lightweight coating, into a thick, foam-like layer that insulates the steel from fire. It is this insulation that maintains the steel' s stability and helps to deliver the additional rescue time that can prove decisive in terms of saving lives and property.

### 优异的耐候性能

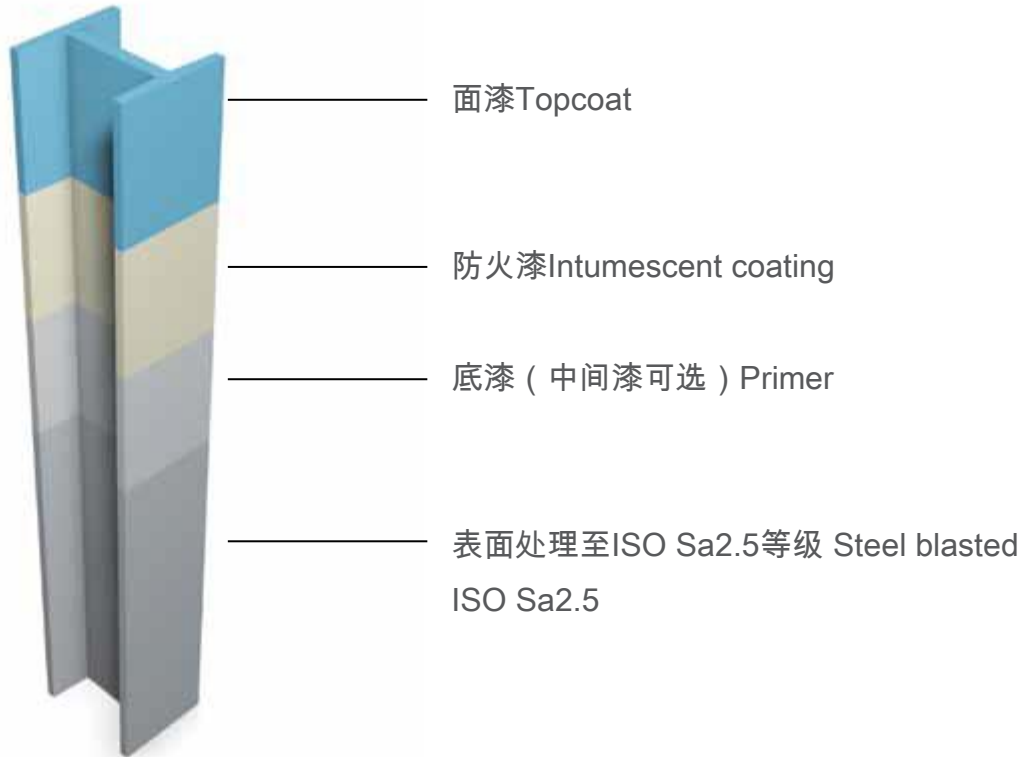
#### **Excellent Weathering Resistance**

Steelguard FM 550 具有当今薄型膨胀防火涂料市场中最好的耐候性能，并广受业主、总包和施工单位的好评。比如重庆机场T3A、上海迪斯尼乐园项目和朗盛（常州）项目。Steelguard FM 550可以在没有面漆的情况下，在户外暴露（非浸水）长达12个月。Steelguard FM 550 has the best performance of weathering resistance in the thin-film intumescent coatings and been praised by Owners, Contractors and Applicators, with its best reputation in the market, such as Chongqing Airport T3A, Shanghai Disney and Lanxess (Changzhou) Projects.

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### 1.3 典型的防火漆配套 Typical Intumescent Coatings System

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## 2. PPG 膨胀型防火涂料方案 for Atlantis Project

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### 2.1 项目背景 Project Background

|                        |                      |
|------------------------|----------------------|
| 项目名 Project Name:      | 宁波机场                 |
| 业主 Project Owner:      |                      |
| 承建商 Fabrication Place: |                      |
| 预计开始 Est. Start /      | 2015                 |
| 项目地址 Project           | /中国                  |
| 防火等级 Fire Rating:      | 120 分钟及 150 分钟纤维素类防火 |
| 防火面积 PFP Area:         |                      |
| 认可规范 Certifying:       | GB 14907 (中国钢结构防火标准) |

### 2.2 室外或室内钢结构纤维素火膨胀型防火涂层系统 (120 分钟) Intumescent Fire Proofing Coatings System for 120min Cellulosic Fire

| No | 产品名称<br>Product   | 膜厚<br>DFT<br>μm | 固体份<br>含量<br>Solid<br>Content | 理论涂布<br>率<br>Theory<br>Spray Rate<br>m <sup>2</sup> /L | 每平米用<br>量<br>Volume<br>Spray Rate<br>L/m <sup>2</sup> | 涂装间隔<br>Interval 20°C |               | Thinner |
|----|-------------------|-----------------|-------------------------------|--|---|-----------------------|---------------|---------|
|    |                   |                 |                               |  |   | Min<br>hours          | Max<br>months |         |
| 1  | SigmaCover 280    | 50              | 58%                           | 11.60  | 0.09  | 4                     | 3             | 91-92   |
| 2  | Steelguard FM 550 | 1850            | 68%                           | 0.37   | 2.70  | 6                     | No limit      | 21-06   |
| 3  | SigmaDur 550      | 50              | 55%                           | 11.00  | 0.09  | 6                     | No limit      | 21-06   |
| 4  | SigmaDur 550 *    | 50              | 55%                           | 11.00  | 0.09  | 6                     | No limit      | 21-06   |

Notes:

- 碳钢或镀锌底材都可使用SigmaCover 280作为底漆，无论碳钢或镀锌件底材在施工底漆前必须经过适当的表面处理，详情请参见产品说明书或相关施工工艺Galvanized steel must be proper degreasing and abrading to remove any contaminants prior to apply SigmaCover 280.
- **PPG涂料的防火漆Steelguard FM550在室外和室内情况下都适用Steelguard FM 550 can be used for both exterior of interior steel structures.**
- 需要进一步的项目具体设计和相关信息来确定最终的防火漆方案Details must be provided by owner to determine the final coatings spec.



- 以上厚度基与120分钟的中国GB14907的标准防火等级证书Above thickness is based on 120min fire rating by Chinese GB standard.
- 以上防火配套适合防腐等级ISO 12944 C4环境，需要至少两道面漆SigmaDur 550，总共100微米Above system is suitable for corrosive level C4 in accordance with ISO 12944, the topcoat shall be 2 times SigmaDur 550 total min 100 microns.
- 最后一道面漆可以采用PPG高性能氟碳面漆SigmaDur 2800以取得最佳保光保色性能  
The last coat of topcoat of above system can be substituted by SigmaDur 2800 for optimum gloss and color retention.
- Total thickness of the Primer and Midcoat must be not exceed 150 microns.

### 2.3 室外或室内钢结构纤维素火膨胀型防火涂层系统（150 分钟）Intumescent Fire Proofing Coatings System for 150min Cellulosic Fire

| No | 产品名称<br>Product   | 膜厚<br>DFT<br>μm | 固体份<br>含量<br>Solid<br>Content | 理论涂布<br>率<br>Theory<br>Spray Rate<br>m <sup>2</sup> /L | 每平方米用<br>量<br>Volume<br>Spray Rate<br>L/m <sup>2</sup> | 涂装间隔<br>Interval 20°C |               | Thinner |
|----|-------------------|-----------------|-------------------------------|--|--|-----------------------|---------------|---------|
|    |                   |                 |                               |  |  | Min<br>hours          | Max<br>months |         |
| 1  | SigmaCover 280    | 50              | 58%                           | 11.60  | 0.09   | 4                     | 3             | 91-92   |
| 2  | Steelguard FM 550 | 2490            | 68%                           | 0.37   | 3.66   | 6                     | No limit      | 21-06   |
| 3  | SigmaDur 550      | 50              | 55%                           | 11.00  | 0.09   | 6                     | No limit      | 21-06   |
| 4  | SigmaDur 550 *    | 50              | 55%                           | 11.00  | 0.09   | 6                     | No limit      | 21-06   |

**Notes:**

- 碳钢或镀锌底材都可使用Sigmacover 280作为底漆，无论碳钢或镀锌件底材在施工底漆前必须经过适当的表面处理，详情请参见产品说明书或相关施工工艺Galvanized steel must be proper degreasing and abrading to remove any contaminants prior to apply Sigmacover 280.
- PPG涂料的防火漆Steelguard FM550在室外和室内情况下都适用Steelguard FM 550 can be used for both exterior of interior steel structures.
- 需要进一步的项目具体设计和相关信息来确定最终的防火漆方案Details must be provided by owner to determine the final coatings spec.
- 以上厚度基与150分钟的中国GB14907的标准防火等级证书Above thickness is based on 150min fire rating by Chinese GB standard.
- 以上防火配套适合防腐等级ISO 12944 C4环境，需要至少两道面漆SigmaDur 550，总共100微米Above system is suitable for corrosive level C4 in accordance with ISO 12944, the topcoat shall be 2 times SigmaDur 550 total min 100 microns.

- 最后一道面漆可以采用PPG高性能氟碳面漆SigmaDur 2800以取得最佳保光保色性能  
The last coat of topcoat of above system can be substituted by SigmaDur 2800 for optimum gloss and color retention.
- Total thickness of the Primer and Midecoat must be not exceed 150 microns.

Regarding the details of the working procedures of this project, please refer the relevant products data sheets (PDS), material safety data sheet (MSDS), and Project Coatings Specification and relevant Working Procedures or Guidelines which will be provided before project starting.

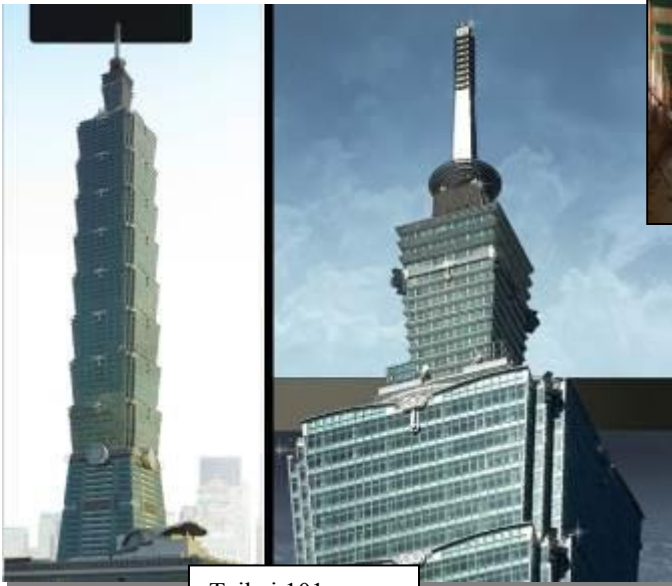
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Please also see following contents of Steelguard FM 550 and especially will bring you:

- **Best Fireproofing Performance**
- **Excellent Weather Resistance**
- **Easier Application & Best Workability**

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**3.Track Records**

Hongyanhe & Yangjiang NPP



Taibei 101



Disney Shanghai & Hongkong

Steelguard FM550 在中国有超过  
 200 个公司业绩 Over 220 projects  
 in Great China Since 1990s

**3.1 业绩证明（迪斯尼上海） Proven Letter of Disney Shanghai Project for PPG Steelguard FM 550**

## 质量反馈证明

上海国际主题乐园有限公司华特迪斯尼幻想工程(上海)在 2013 年上海建设过程中,钢结构用钢量为 2500 吨,防火涂装工程造价超过 350 万人民币。

该项目所涉及防火涂料的区域采用了贵公司生产的超薄型钢结构防火涂料(型号为:室外型超薄防火涂料 SteelGuard FM 550),受到工程单位的一致好评。

庞贝捷(PPG)涂料(昆山)有限公司生产的超薄型防火涂料在我迪斯尼项目使用过程中,施工性能表现优异,未发现防火涂层有任何起壳、开裂及粉化等不良现象。

特此证明!

单位: 上海建科建设发展有限公司

日期: 2014/3/10

电话号码: 021-61273430

**Proven Letter Translation (English):****Proven Letter of Quality Feedback** 6025  
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There are around 2500 tons of steel and fireproofing coatings application total cost is exceeded RMB3,500,000 for Walt Disney Imagineering Shanghai Park Project during 2013.

PPG thin film intumescent fire protection coatings - Steelguard FM 550 was applied on the fireproofing areas and achieve applicators praise in this project.

Hereby to Prove that there are no any defects such as peeling-off, cracks or chalking are found and the workability of the intumescent fireprotection coatings Steelguard FM 550 of PPG Coatings (Kunshan) Co. has excellent performance in Disney project.

Jianke Construction Development Shanghai  
Mar of 2014  
Tel: 021-64273430



### 3.2 Steelguard FM 550 中国业绩纪录 (部分) Steelguard FM 550 Reference List in Great China (Partly)

| No | Project Name                             | Location           | Owner                     | Applicator                | Year | Quantities                                |
|----|--|--------------------|---------------------------|---------------------------|------|---|
| 1  | CGNPC Hongyanhe NPP                      | LiaoNing           | CGNPC                     | CNNC Huaxing              | 2011 | 4,500L                                    |
| 2  | CGNPC Ningde NPP                         | Fujian             | CGNPC                     | CNNC Huaxing              | 2012 | 4,500L (under construction)               |
| 3  | CGNPC Yangjiang NPP                      | Guangdong          | CGNPC                     | CNNC Huaxing              | 2012 | 4,000L                                    |
| 4  | CGNPC Fangchenggang NPP                  | GuangXi            | CGNPC                     | CNNC Huaxing              | 2012 | 5,000L                                    |
| 5  | Nantong Acetic Acid Fiber Factory        | Nantong            | Nantong Acetic Acid Fiber | Nanjing Shenrui           | 2012 | 2,500L                                    |
| 6  | KZ PKOP                                  | Zhuhai             | PKOP                      | Zhuhai Jutal              | 2012 | 3,000L                                    |
| 7  | West Kowloon Railway Station -810A       | Hongkong           | XRT                       | Fashun Engineering        | 2012 | >5000m <sup>2</sup> (under construction)  |
| 8  | Lanxess EPDM (Changzhou) II              | Jiangsu            | Lanxess                   | CSCEC No.2                | 2013 | 15,000L                                   |
| 9  | Cotai Automotive Inspection Center       | Macau              | Macau                     | New Jiye                  | 2014 | 6000m <sup>2</sup>                        |
| 10 | Disney Shanghai Park                     | Shanghai           | Walt Disney               | SCG                       | 2014 | >20000m <sup>2</sup> (under construction) |
| 11 | Bayer Shanghai Garbage Warehouse         | Shanghai           | Bayer BTS                 | Jiangsu Qian Construction | 2014 |   |
| 12 | Chongqing Airport T3A                    | Chongqing Jiangbei | Chongqing Airport         | Roeder Hansen (Beijin)    | 2014 | >180,000L(under construction)             |
| 13 | Sweden TTS Port                          | Sweden             | TTS Sweden                | Tsuji Shanghai            | 2014 | 1000m <sup>2</sup>                        |
| 14 | Wuhan Huaxing – Samsung T3 new LED Plant | Wuhan              | Huaxing/Samsung           | CSCEC No.3                | 2015 | 45,000m <sup>2</sup> (under construction) |
| 15 | Shenyang Shifu Henglong Plaza            | Shenyang           | Henglong                  | CSCEC No.3                | 2015 | 20,000m <sup>2</sup> (under construction) |

### Other Earlier Main Projects Reference List in Taiwan

#### 其他台湾地区更早的主要项目业绩表

| No  | Project Name                         | Location     | Owner                 | Applicator     | Year | Quantities |
|-----|--------------------------------------|--------------|-----------------------|----------------|------|------------|
| 4   | Maritime Museum                      | Checheng     | Ministry of Education | Tongshun       | 1998 | 2,226 m2   |
| 15  | Baiyun SZ Swimming Pool              | XiZhi        | BYSZ                  | Dongdishi      | 2000 | 10,000 m2  |
| 35  | Acer Computer Project II             | Taipei       | B&Q                   | Hengyue        | 2001 | 51,680 m2  |
| 55  | B&Q South Taiwan Rende Shopping Mall | South Taiwan | B&Q                   | Tongying       | 2003 | 14,723 m2  |
| 94  | Jintai Shopping Mall                 | Taipei       | Mainland              | Tongying       | 2005 | 34,238 m2  |
| 104 | Taiwan Xiaosong 300MM                | Mailiao      | Taiwan Xiaosong       | Fanxuan System | 2005 | 87097 m2   |

| No  | Project Name                           | Location | Owner                | Applicator | Year | Quantities |
|-----|--|----------|----------------------|------------|------|------------|
| 117 | Lijing Semiconductor 12C               | Taizhong | Lijing Semiconductor | Huzhu      | 2006 | 178,589 m2 |
| 127 | Lijing Semiconductor 12C SUP           | Xinzhu   | Lijing Semiconductor | Qingbang   | 2007 | 154,653m2  |
| 207 | B&Q Teli Home Furnishing Shopping Mall | Taoyuan  | HOLA                 | Tongying   | 2010 | 21,276m2   |
| 212 | FORMOSA Shenggao PWC2                  | Mailiao  | FORMOSA Shenggao     | Qingbang   | 2011 | 53,000m2   |

**防火涂料大中华区应用业绩 - 中国大陆项目业绩表 (Chinese)**

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**中国大陆地区项目业绩表**

| 编号 | 项目名称                      | 地点    | 业主           | 施工单位      | 年度   | 数量/单位                     |
|----|---------------------------|-------|--------------|-----------|------|---------------------------|
| 1  | 中广核红沿河核电站                 | 辽宁红沿河 | 中广核          | 中核华兴公司    | 2011 | 4,500L                    |
| 2  | 中广核宁德核电站                  | 福建宁德  | 中广核          | 中核华兴公司    | 2012 | 4,500L (在建)               |
| 3  | 中广核阳江核电站                  | 广东阳江  | 中广核          | 中核华兴公司    | 2012 | 4,000L                    |
| 4  | 中广核防城港核电站                 | 广西防城港 | 中广核          | 中核华兴公司    | 2012 | 5,000L                    |
| 5  | 南通醋酸纤维厂                   | 南通    | 南通醋酸纤维       | 南京申瑞      | 2012 | 2,500L                    |
| 6  | 哈萨克斯坦 PKOP 公司             | 珠海    | PKOP 脱硫装置    | 珠海巨涛      | 2012 | 3,000L                    |
| 7  | 香港西九龙北站-810A 项目           | 香港    | 港铁公司         | 发顺工程      | 2012 | >5000m <sup>2</sup> (在建)  |
| 8  | 朗盛 EPDM (常州 ) 二期          | 江苏常州  | Lanxess (常州) | 中建钢构      | 2013 | 15,000L                   |
| 9  | 澳门氹仔汽车检验中心                | 澳门    | 澳门           | 新基业       | 2014 | 6000m <sup>2</sup>        |
| 10 | 上海迪斯尼                     | 上海    | 华特迪斯尼        | 上海建工      | 2014 | >20000m <sup>2</sup> (在建) |
| 11 | 拜耳上海基地废物存储库房              | 上海    | 拜耳 BTS       | 江苏启安建设    | 2014 |                           |
| 12 | 重庆机场 T3A 航站楼              | 重庆江北  | 重庆机场         | 罗德汉森      | 2014 | >150,000L(在建)             |
| 13 | 瑞典 TTS 港口项目               | 瑞典    | TTS          | 社产业 (上海)  | 2014 | 1000m <sup>2</sup>        |
| 14 | 武汉光谷华星 (TCL/三星) LED T3 新厂 | 武汉    | 武汉华星         | 中建三局/江苏帝邦 | 2015 | 45,000m <sup>2</sup> (在建) |
| 15 | 沈阳市府恒隆广场                  | 沈阳    | 恒隆           | 中建三局      | 2015 | 20,000m <sup>2</sup>      |

**台湾地区主要项目业绩表**

| 编号 | 案名         | 地点 | 业主   | 营造厂   | 年度   | 数量/单位               |
|----|------------|----|------|-------|------|---------------------|
| 1  | 花莲中学游泳池    | 花莲 | 花莲中学 | 达盈兴营造 | 1997 | 700 m <sup>2</sup>  |
| 2  | 空中英语教室     | 大直 | 空中英语 | 泉钢企业  | 1997 | 60 m <sup>2</sup>   |
| 3  | 广三 SOGO 二馆 | 台中 | 广三建设 | 千友营造  | 1998 | 227 m <sup>2</sup>  |
| 4  | 海博馆        | 车城 | 教育部  | 同顺营造  | 1998 | 2226 m <sup>2</sup> |
| 5  | 新宇汽电共生厂    | 新竹 | 中宇环保 | 大陆工程  | 1998 | 1394 m <sup>2</sup> |
| 6  | 乾坤科技厂房     | 新竹 | 乾坤科技 | 启昊企业  | 1998 | 780 m <sup>2</sup>  |

| 编号 | 案名            | 地点 | 业主     | 6025<br>2661<br>营造厂 | 年度   | 数量/单位                |
|----|---------------|----|--------|---------------------|------|----------------------|
| 7  | 仁宝电子大楼        | 内湖 | 仁宝电子   | 互助营造                | 1999 | 1300 m <sup>2</sup>  |
| 8  | 南京企业大楼        | 台北 | 大华建设   | 互助营造                | 1999 | 10 m <sup>2</sup>    |
| 9  | 太平洋光电大楼       | 内湖 | 太平洋光电  | 达欣营造                | 1999 | m <sup>2</sup>       |
| 10 | 中科院 671A-3 号馆 | 龙潭 | 中科院    | 幸扬营造                | 1999 | m <sup>2</sup>       |
| 11 | 桂冠酒店          | 台北 | 长荣     | 国功营造                | 1999 | 4 m <sup>2</sup>     |
| 12 | 大润发           | 内湖 | 大润发    | 评辉营造                | 2000 | 1330 m <sup>2</sup>  |
| 13 | 技嘉科技二厂        | 平镇 | 技嘉科技   | 国功营造                | 2000 | 1000 m <sup>2</sup>  |
| 14 | 达荣工业厂房        | 竹东 | 达荣工业   | 国云营造                | 2000 | 3200 m <sup>2</sup>  |
| 15 | 白云山庄游泳池       | 汐止 | 白云山庄   | 东帝士营造               | 2000 | 10000 m <sup>2</sup> |
| 16 | 茂德科技 D 厂      | 新竹 | 茂德科技   | 钢成营造                | 2000 | 12000 m <sup>2</sup> |
| 17 | 华鸿科技          | 竹北 | 华鸿科技   | 擘顺营造                | 2000 | 1346 m <sup>2</sup>  |
| 18 | B&Q 特力翠丰基河店   | 士林 | B&Q    | 欣普力                 | 2000 | 7704 m <sup>2</sup>  |
| 19 | 正修技术学院南侧停车场   | 高雄 | 正修技术学院 | 膜钢                  | 2000 | 10310 m <sup>2</sup> |
| 20 | B&Q 特力翠丰彰美店   | 彰化 | B&Q    | 欣普力                 | 2000 | m <sup>2</sup>       |
| 21 | 中科院核能所 035 馆  | 龙潭 | 中科院    | 宇宙营造                | 2000 | 93 m <sup>2</sup>    |
| 22 | 大众银行天母分行      | 台北 | 大众银行   | 太孚实业                | 2001 | m <sup>2</sup>       |
| 23 | 茱丽亚幼儿园        | 台中 | 茱丽亚幼儿园 | 成铭营造                | 2001 | m <sup>2</sup>       |
| 24 | 精业内湖厂办大楼      | 内湖 | 精业计算机  | 石川工程                | 2001 | 457 m <sup>2</sup>   |
| 25 | 普立尔大楼         | 内湖 | 普立尔    | 台湾弯管                | 2001 | 2227 m <sup>2</sup>  |
| 26 | 京华城           | 台北 | 京华城    | 中华工程                | 2001 | 3900 m <sup>2</sup>  |
| 27 | 橡荣电子杨梅厂       | 杨梅 | 橡荣电子   | 国云营造                | 2001 | 4728 m <sup>2</sup>  |
| 28 | 台科大综研大楼       | 台北 | 台科大    | 鼎巨营造                | 2001 | 251 m <sup>2</sup>   |
| 29 | 文山特殊教育实验学校    | 木栅 | 教育部    | 谦信企业                | 2001 | 4743 m <sup>2</sup>  |
| 30 | 碧悠电子彩色 STN 厂房 | 新丰 | 碧悠电子   | 基泰营造                | 2001 | 37017 m <sup>2</sup> |
| 31 | 天文馆           | 台北 | 天文馆    | 圣陆营造                | 2001 | 1600 m <sup>2</sup>  |
| 32 | B&Q 北屯店       | 台中 | B&Q    | 统营营造                | 2001 | m <sup>2</sup>       |
| 33 | 正修技术学院北侧停车场   | 高雄 | 正修技术学院 | 膜钢                  | 2001 | 15294 m <sup>2</sup> |
| 34 | 台湾凸版国际彩光工厂    | 台南 | 凸版国际彩光 | 中鹿营造                | 2001 | 42878 m <sup>2</sup> |
| 35 | 明基计算机二期新建工程   | 台北 | 明基     | 恒越实业                | 2001 | 51680 m <sup>2</sup> |
| 36 | 统昶营销仓库工程      | 基隆 | 统一企业   | 颖昌工程                | 2001 | 18677 m <sup>2</sup> |
| 37 | 高雄县消防局新建工程    | 高雄 | 高雄县消防局 |                     | 2001 | 409 m <sup>2</sup>   |

| 编号 | 案名                           | 地点 | 业主         | 6025<br>2661<br>营造厂  | 年度   | 数量/单位                |
|----|------------------------------|----|------------|----------------------|------|----------------------|
| 38 | 中晶光电观音厂一期<br>新建工程            | 观音 | 中晶光电       | 6025<br>2661<br>达欣营造 | 2001 | 14308 m <sup>2</sup> |
| 39 | 内政部宜兰教养院新建工程                 | 宜兰 | 内政部        | 达固营造                 | 2001 | 988 m <sup>2</sup>   |
| 40 | 树人女子家商                       | 树林 | 树人女子家商     | 良证工程                 | 2001 | 50 m <sup>2</sup>    |
| 41 | 台新银行新建大楼                     | 内湖 | 台新银行&大众计算机 | 惠光营造                 | 2001 | 750 m <sup>2</sup>   |
| 42 | 弘捷二期厂房<br>增建工程               | 桃园 | 弘捷电路       | 正阳营造                 | 2001 | 2402 m <sup>2</sup>  |
| 43 | 特力翠丰凤山瑞隆商场<br>新建工程           | 高雄 | B&Q        | 统营营造                 | 2001 | 7865 m <sup>2</sup>  |
| 44 | 中钢第一行政及运输财务大楼外<br>墙整修及外围美化工程 | 高雄 | 中钢结构       | 联钢营造                 | 2001 | 120 m <sup>2</sup>   |
| 45 | 美来七期新建工程                     | 台中 | 张廖贵兴       | 高邦营造                 | 2001 | 26 d                 |
| 46 | 金瓜石金铜博物馆改建工程                 | 金山 | 台北县政府      | 松联营造                 | 2002 | 1638 m <sup>2</sup>  |
| 47 | 仁爱翡翠大楼                       | 台北 | 永泰祥开发      | 松友建筑                 | 2002 | 62.3 m <sup>2</sup>  |
| 48 | 盈溢电子                         | 桃园 | 盈溢电子       | 利晋工程                 | 2002 | 100 m <sup>3</sup>   |
| 49 | 苹果日报新屋厂房新建工程                 | 桃园 | 苹果日报       | 木成营造                 | 2002 | 11936 m <sup>3</sup> |
| 50 | 陆军新店营区设施整建工程                 | 新店 | 联勤总部营工署    | 汉龙营造                 | 2002 | 22261 m <sup>3</sup> |
| 51 | 澎湖尖山发电厂 CI 标结构装修工程           | 澎湖 | 台湾电力公司     | 尚鼎营造                 | 2002 | 3093 m <sup>2</sup>  |
| 52 | 高雄市旗津区中兴市场停车场及<br>外围配合改善工程   | 高雄 | 高雄市政府      | 双汉企业                 | 2002 | 505 m <sup>2</sup>   |
| 53 | 台东航空站航站大厦<br>扩建工程            | 台东 | 交通部民用航空局   | 洲义营造                 | 2002 | 3250 m <sup>2</sup>  |
| 54 | 台湾华可贵第二工厂<br>二期增建            | 中坜 | 台湾华可贵      | 中鹿营造                 | 2002 | 6248 m <sup>2</sup>  |
| 55 | B&Q 台南仁德商场                   | 台南 | B&Q        | 统营营造                 | 2003 | 14723 m <sup>2</sup> |
| 56 | 胜华科技台中工业区<br>厂房扩建            | 台中 | 胜华科技       | 德昌营造                 | 2003 | 6854 m <sup>2</sup>  |
| 57 | 光林电子股份有限公司厂房                 | 桃园 | 光林电子       | 长青工程                 | 2003 |                      |
| 58 | 台大动物医院增建工程                   | 台北 | 台大动物医院     | 力拓营造                 | 2003 | 4635 m <sup>2</sup>  |
| 59 | 101 台北国际金融中心                 | 台北 | 台北国际金融公司   | 新日铁/中钢构              | 2003 | 1132 m <sup>2</sup>  |
| 60 | 国立艺术学院音乐厅                    | 台北 | 国立艺术学院     | 冠溢工程                 | 2003 | 7 d                  |
| 61 | 瀚邦企业大楼<br>新建工程               | 台北 | 瀚邦企业       | 诠发建设                 | 2003 | 1366 m <sup>2</sup>  |
| 62 | 飞捷科技内湖厂                      | 台北 | 飞捷科技       | 禾进营造                 | 2003 | 164 d                |
| 63 | 台达弯管内湖厂办                     | 台北 | 台达弯管       | 禾进营造                 | 2003 | 37 d                 |
| 64 | 凯旋八期新建工程                     | 台北 | 长虹建设       | 宏林营造                 | 2003 | 39 d                 |



| 编号 | 案名                  | 地点 | 业主      | 6025<br>2661<br>营造厂  | 年度   | 数量/单位                |
|----|---------------------|----|---------|----------------------|------|----------------------|
| 65 | 余荣珍、余荣芬补习班          | 高雄 | 余荣珍     | 余荣芬                  | 2003 | 7 d                  |
| 66 | 三宝长春大楼              | 台北 | 三宝建设    | 6025<br>2661<br>中熊营造 | 2003 | 25 d                 |
| 67 | 中国纺织土城厂             | 台北 | 中国纺织    | 建博工程                 | 2003 | 6 d                  |
| 68 | 台湾高铁新竹站新建工程         | 新竹 | 台湾高铁    | 大丰营造                 | 2003 | 5041 m <sup>2</sup>  |
| 69 | 慈济土城清水国小校舍<br>新建工程  | 土城 | 清水国小    | 伟伦营造                 | 2003 | 25 d                 |
| 70 | 芦竹乡体育馆羽训场<br>新建工程   | 桃园 | 桃园县政府   | 桃鼎营造                 | 2003 | 94 d                 |
| 71 | 永达技术学院 3F 增建工程      | 高雄 | 永达技术学院  | 明正营造                 | 2004 | 3850 m <sup>2</sup>  |
| 72 | 怀恩堂纪念馆              | 新竹 | 怀恩堂     | 怀恩堂                  | 2004 | 6 d                  |
| 73 | 新庄化成加油站             | 新庄 | 佳满企业    | 汉铨营造                 | 2004 | 2 d                  |
| 74 | 嘉义市政中心              | 嘉义 | 嘉义市政府   | 兴亚营造                 | 2004 | 10 d                 |
| 75 | 台湾板保科技玻璃台南<br>工厂三期  | 台南 | 板保科技    | 中鹿营造                 | 2004 | 12085 m <sup>2</sup> |
| 76 | 致茂电子增建工程            | 林口 | 致茂电子    | 中麟营造                 | 2004 | 11744 m <sup>2</sup> |
| 77 | 基隆裕隆仓储              | 基隆 | 伸鸿公司    | 德峰营造                 | 2004 | 17369 m <sup>2</sup> |
| 78 | 台湾高铁 D290 燕巢总机厂     | 燕巢 | 台湾高铁    | CCTJV                | 2004 | 3935 m <sup>2</sup>  |
| 79 | 捷盟营销(股)台中 DC 仓储     | 台中 | 捷盟营销    | 亿达营造                 | 2004 | 16327 m <sup>2</sup> |
| 80 | 高雄高都汽车              | 高雄 | 高都汽车    |                      | 2004 | 72 d                 |
| 81 | 硅品中山 C 厂工程          | 台中 | 硅品科技    | 锦标营造                 | 2004 | 45 d                 |
| 82 | 台中鱼市场               | 台中 | 台中鱼市场   | 瑞年机械                 | 2004 | 302 d                |
| 83 | 台南柳营变电所             | 台南 | 台湾电力公司  | 和昌营造                 | 2004 | 55 d                 |
| 84 | 台湾凸版国际彩光 H12 工厂     | 台南 | 台湾凸版    | 中鹿营造                 | 2004 | 12473 m <sup>2</sup> |
| 85 | 台湾板保科技玻璃台南工厂四期      | 台南 | 板保科技    | 中鹿营造                 | 2004 | 10553 m <sup>2</sup> |
| 86 | 台湾高铁 D295 左营仓库      | 高雄 | 台湾高铁    | 东元百利 JV              | 2004 | 6429 m <sup>2</sup>  |
| 87 | 行政院家畜卫生<br>试验生技中心   | 新竹 | 行政院农委会  | 合欣营造                 | 2004 | 800 m <sup>2</sup>   |
| 88 | 政大附中新建工程            | 台北 | 政治大学    |                      | 2004 | 210 d                |
| 89 | 旭硝子厂房新建             | 台南 | 旭硝子     | 泛亚营造                 | 2004 | 110 d                |
| 90 | 台湾富士奥麒二期            | 新竹 | 台湾富士奥麒  | 长清工程                 | 2004 | 143 d                |
| 91 | 和乔科技(股)3F 无尘室<br>改建 | 新竹 | 和乔科技(股) | 俐炜机械                 | 2004 | 21 d                 |
| 92 | 交通大学校舍改建            | 新竹 | 交通大学营缮组 | 长清工程                 | 2004 | 143 d                |
| 93 | 七堵车站月台防火漆工程         | 台北 | 中华顾问    | 俐炜机械                 | 2004 | 21 d                 |
| 94 | 金泰段商业购物大楼           | 台北 | 大陆工程    | 统营营造                 | 2005 | 34238 m <sup>2</sup> |

| 编号  | 案名                | 地点 | 业主         | 6025<br>2661<br>营造厂  | 年度   | 数量/单位                 |
|-----|-------------------|----|------------|----------------------|------|-----------------------|
| 95  | 吴凤技术学院新建工程        | 嘉义 | 吴凤技术学院     | 6025<br>2661<br>丽明营造 | 2005 | 200 d                 |
| 96  | 新竹县立体育馆新建工程       | 新竹 | 新竹县政府      | 6025<br>2661<br>日富营造 | 2005 | 300 d                 |
| 97  | 北市南港分局新建工程        | 台北 | 台北市政府      | 安仓营造                 | 2005 | d                     |
| 98  | 慈济志业中心桃园分会        | 中坜 | 慈济桃园分会     | 慈济营建部                | 2005 | 43 d                  |
| 99  | 台湾高铁 D250 标乌日主仓库  | 台中 | 台湾高铁       | CCTJV                | 2005 | 4750 m <sup>2</sup>   |
| 100 | 台湾凸版国际彩光 H12 通廊   | 台南 | 台湾凸版       | 中鹿营造                 | 2005 |                       |
| 101 | 丽林国小新建工程          | 台北 | 丽林国小       | 索罗门营造                | 2005 | 39 d                  |
| 102 | 国瑞汽车(股)公司观音厂      | 观音 | 国瑞汽车       | 中鹿营造                 | 2005 | 800 m <sup>2</sup>    |
| 103 | 捷运新店线沅利新天地        | 台北 | 台北市捷运局     | 久年营造                 | 2005 | 20 d                  |
| 104 | 台湾小松 300MM 一期统包工程 | 麦寮 | 台湾小松       | 帆宣系统科技               | 2005 | 87097 m <sup>2</sup>  |
| 105 | 板保第二厂 5 期工程       | 台南 | 板保科技       | 中鹿营造                 | 2005 |                       |
| 106 | 威力盟电子厂办新建工程       | 湖口 | 威力盟电子      | 基扬营造                 | 2005 |                       |
| 107 | 静修女中教学综合大楼新建工程    | 台北 | 静修女中       | 福住建设                 | 2006 |                       |
| 108 | 台北市南港区市民活动中心      | 台北 | 台北市政府      | 地桦营造                 | 2006 |                       |
| 109 | 中研院体育馆修缮工程        | 台北 | 中研院        | 昆得营造                 | 2006 |                       |
| 110 | 国立暨南大学管理学院大楼一期    | 南投 | 国立暨南大学     | 东岳营造                 | 2006 |                       |
| 111 | 宝成企业总部新建工程        | 台中 | 宝成企业       | 王矣营造                 | 2006 |                       |
| 112 | 财团法人佛教慈济综合医院      | 台中 | 财团法人佛教慈济医院 | 慈济营建部                | 2006 |                       |
| 113 | 台北市万华区市民运动中心      | 台北 | 台北市政府      | 成中恒营造                | 2006 |                       |
| 114 | BR4 木栅线共构新建大楼     | 台北 | 宏通综合(股)公司  | 远扬营造                 | 2006 |                       |
| 115 | 新日兴树林厂房新建工程       | 树林 | 新日兴(股)公司   | 统营营造                 | 2006 |                       |
| 116 | 侨威科技厂办新建工程        | 桃园 | 新日兴(股)公司   | 统营营造                 | 2006 |                       |
| 117 | 力晶半导体 12C 厂新建工程   | 台中 | 力晶半导体(股)公司 | 互助营造                 | 2006 | 178589 m <sup>2</sup> |
| 118 | 幕夏四季              | 台北 | 桓邦建设       | 清水营造                 | 2006 |                       |
| 119 | 交通部暨中华电信仁爱综合大楼    | 台北 | 中华电信       | 尚鼎营造                 | 2006 |                       |
| 120 | 富村食品冷冻有限公司厂房      | 台北 | 富村食品       | 评辉营造                 | 2006 |                       |
| 121 | 台中市国际标准棒球场        | 台中 | 台中市政府      | 兴亚营造                 | 2006 |                       |
| 122 | 精英计算机             | 台北 | 精英计算机(股)公司 | 亿东营造                 | 2006 |                       |
| 123 | 花莲慈济行政研究大楼        | 花莲 | 花莲慈济       | 理成营造                 | 2006 |                       |
| 124 | 华新科技(股)高雄厂        | 高雄 | 华新科技       | 统营营造                 | 2006 |                       |

| 编号  | 案名                        | 地点 | 业主         | 6025<br>2661<br>营造厂  | 年度   | 数量/单位                 |
|-----|---------------------------|----|------------|----------------------|------|-----------------------|
| 125 | 展颂(股)公司纺纱厂                | 斗六 | 展颂(股)公司    | 6025<br>2661<br>丽明营造 | 2006 |                       |
| 126 | 汉磊科技联光厂增建                 | 新竹 | 汉磊科技       | 6025<br>2661<br>启翔营造 | 2006 |                       |
| 127 | 力晶 12M 厂 SUP 栋增建工程        | 新竹 | 力晶半导体(股)公司 | 启翔营造                 | 2007 | 154,653               |
| 128 | 台湾美格厂办新建工程                | 桃园 | 台湾美格(股)公司  | 中鹿营造                 | 2007 |                       |
| 129 | 新丰德志发屠宰场新建工程              | 新竹 | 德志发屠宰场     | 万辉机械                 | 2007 |                       |
| 130 | 三义天下一家住宅新建工程              | 新竹 | 天下一家       | 建来成营造                | 2007 |                       |
| 131 | 高雄市现代化综合体育馆商场栋            | 高雄 | 汉威巨蛋开发(股)  | 联钢营造                 | 2007 |                       |
| 132 | 台湾工业银行总部大楼                | 台北 | 台湾工业银行     | 大陆工程                 | 2007 |                       |
| 133 | 台湾小松电子二期工程                | 麦寮 | 台湾小松       | 工台工程                 | 2007 |                       |
| 134 | 捷运新店线七张站联合开发大楼            | 台北 | 台北市捷运局     |                      | 2007 |                       |
| 135 | 台塑胜高 B Line 扩建案           | 麦寮 | 台湾小松       | 帆宣系统科技               | 2007 |                       |
| 136 | 丽山國小活动中心含游池新建暨旧校舍结构补强工程   | 台北 | 台北市内湖区丽山國小 | 中麟营造团队               | 2007 |                       |
| 137 | 马祖珠山电厂发电计划 A2-2 标发电区土建工程  | 马祖 | 台湾电力公司     | 靖玮营造                 | 2007 |                       |
| 138 | 国立嘉义大学昆虫资源生态馆新建工程         | 嘉义 | 国立嘉义大学     | 盛晖营造                 | 2007 | 24                    |
| 139 | 高雄捷运橘线 CD1 机场统包工程         | 高雄 | 高雄捷运公司     | 荣民工程                 | 2007 | 40                    |
| 140 | 耕莘健康管理专校-宜兰校区整体规划及兴建第一期工程 | 宜兰 | 耕莘专科学校     | 俊贸营造                 | 2007 | 60                    |
| 141 | 台塑麦寮碳纤厂二期原丝区建设统包工程        | 麦寮 | 台塑         | 擎邦国际                 | 2007 | 4                     |
| 142 | 麦寮碳纤三期-碳纤维厂 F,G 列扩建工程     | 麦寮 | 台塑         | 擎邦国际                 | 2007 |                       |
| 143 | 明源工业厂房新建工程                | 台中 | 明源工业       | 丽明营造                 | 2007 |                       |
| 144 | 近代塑料厂房新建工程                | 彰化 | 近代塑料       |                      | 2007 |                       |
| 145 | 台北金融中心新建工程                | 台北 | 东亚建经       | 中麟营造                 | 2007 |                       |
| 146 | 台北内湖市民运动中心暨科学园区服务中心新建工程   | 台北 | 台北市政府      | 皇昌营造                 | 2007 |                       |
| 147 | 长乐国小体育馆                   | 基隆 | 长乐国小       | 彦伟营造                 | 2007 |                       |
| 148 | 郑栋梁宅                      | 宜兰 | 郑栋梁        |                      | 2007 |                       |
| 149 | 德律科技林口厂新建工程               | 台北 | 德律科技       | 中麟营造                 | 2007 |                       |
| 150 | 台元立体停车场新建主体工程             | 竹北 | 台元科技       | 中麟营造                 | 2007 |                       |
| 151 | 长庚医院                      | 嘉义 | 长庚医院       | 荣民工程                 | 2007 | 201169 m <sup>2</sup> |
| 152 | 乐山雷达站                     | 新竹 | PB         | 荣民工程                 | 2007 |                       |

| 编号  | 案名                     | 地点 | 业主        | 6025<br>2661<br>营造厂  | 年度   | 数量/单位  |
|-----|------------------------|----|-----------|----------------------|------|--------|
| 153 | 国立新店高中学生活动中心新建工程       | 台北 | 国立新店高级中学  | 6025<br>2661<br>益东营造 | 2008 |        |
| 154 | 士林电机新建工程               | 台北 | 士林电机      | 中鹿营造                 | 2008 |        |
| 155 | 高雄市现代化综合体育馆蛋区          | 高雄 | 汉威巨蛋开发(股) | 联钢营造                 | 2008 |        |
| 156 | 益睿科技厂办大楼新建工程           | 五股 | 益睿科技      | 里旺营造                 | 2008 |        |
| 157 | 花莲特色畜禽肉品示范加工场兴建工程      | 花莲 | 花莲县光丰地区农会 | 民儒营造                 | 2008 |        |
| 158 | 兰阳博物馆新建工程              | 宜兰 | 宜兰县政府     | 利晋工程                 | 2008 |        |
| 159 | 长亨精密南科高雄园区一期厂办         | 高雄 | 长亨精密(股)公司 | 大信营造                 | 2008 |        |
| 160 | 台北市体育场(田径场)整建统包工程      | 台北 | 台北市政府     | 润弘精密                 | 2008 |        |
| 161 | 台北市大安区和平国小校舍暨地下停车场新建工程 | 台北 | 台北市政府     | 日富营造                 | 2008 |        |
| 162 | 台北信息产业大楼新建工程           | 台北 | 台北市政府     | 华州营造                 | 2008 |        |
| 163 | 内政部警政署刑事警察局刑事科技中心新建工程  | 台北 | 内政部警政署    | 德昌营造                 | 2008 |        |
| 164 | 台元科技园区三期工业厂房新建工程       | 新竹 | 台元科技      | 中麟营造                 | 2008 | 9,485  |
| 165 | 联合报汐止厂房增建工程            | 台北 | 联合报系      | 中麟营造                 | 2008 | 13,220 |
| 166 | 三峡蛋品加工厂及蛋品物流中心新建工程     | 台北 | 吴记蛋品      | 统营营造                 | 2008 | 5,174  |
| 167 | 国立宜兰大学生物资源学院大楼新建工程     | 宜兰 | 国立宜兰大学    | 达固营造                 | 2008 |        |
| 168 | 大同重电一厂新电机厂房新建工程        | 桃园 | 尚志资产开发    | 志勤营造                 | 2008 | 1,106  |
| 169 | 台肥苗栗市福星段厂房新建工程         | 苗栗 | 台湾肥料(股)   | 立华营造                 | 2008 | 4,361  |
| 170 | FSM 餐饮服务联合大楼           | 台北 |           | 统营营造                 | 2008 | 332    |
| 171 | 华航园区开发新建工程             | 桃园 | 华航园区(股)   | 理成营造                 | 2008 | 55,688 |
| 172 | 北斗台湾菌菇工厂新建工程           | 屏东 | 日商北斗生技    | 中鹿营造                 | 2008 |        |
| 173 | 吴英吉住宅新建工程              | 宜兰 | 吴英吉       | 日昌营造                 | 2008 |        |
| 174 | T-91 步枪射击模训教室新建工程      | 宜兰 | 国防军备局     | 集英营造                 | 2008 |        |
| 175 | 升阳光电                   | 湖口 | 升阳光电      | 瑞助营造                 | 2008 | 43,914 |
| 176 | 实践大学体育馆及图书馆主体新建工程      | 台北 | 实践大学      | 理成营造                 | 2009 |        |
| 177 | 台塑汽车货运林口调度场理货台新建工程     | 林口 | 台塑        | 涌立营造                 | 2009 |        |

| 编号  | 案名                       | 地点 | 业主         | 6025<br>2661<br>营造厂  | 年度   | 数量/单位 |
|-----|--------------------------|----|------------|----------------------|------|-------|
| 178 | 后备部训练场地新中,大内,三块厝训练设施新建   | 台南 | 国防部军备局     | 6025<br>2661<br>桦威营造 | 2009 |       |
| 179 | 陈仲连农舍新建工程                | 宜兰 | 陈仲连        |                      | 2009 |       |
| 180 | 后备部训练场地关西训练设施新建工程        | 新竹 | 国防部军备局     | 长宏营造                 | 2009 |       |
| 181 | 新光人寿 A12 新建工程            | 台北 | 新光人寿       | 互助营造                 | 2009 |       |
| 182 | 后备部训练场地中坑,精北,精南训练设施新建工程  | 嘉义 | 国防部军备局     | 六合营造                 | 2009 |       |
| 183 | 后备部训练场地斗焕坪,成功岭训练设施新建工程   | 台中 | 国防部军备局     | 向阳营造                 | 2009 |       |
| 184 | 空军司令部忠勇分案新建工程处           | 台北 | 空军总部       | 荣民工程(股)              | 2009 |       |
| 185 | 国防部博爱分案建筑工程              | 台北 | 国防部        | 启承营造                 | 2009 |       |
| 186 | 福聚太阳能 CUP1510 栋厂房新建工程    | 高雄 |            |                      | 2009 |       |
| 187 | 醒吾技术学院人文五楼屋顶型钢防火漆工程      | 林口 | 财团法人醒吾技术学院 |                      | 2009 |       |
| 188 | 台铁南科车站站体新建工程             | 台南 | 台南县政府      | 振挥营造                 | 2009 |       |
| 189 | 财团法人圣约翰科技大学行政与教学新建工程     | 台北 | 圣约翰科技大学    | 统营营造                 | 2009 |       |
| 190 | 仁德服务区机车棚及南区工程处人行步道雨遮新建工程 | 台南 | 交通部国道高速公路  | 新原营造                 | 2009 |       |
| 191 | 新店市工七立体停车场新建工程           | 台北 | 毅成建设       |                      | 2010 |       |
| 192 | 新竹县立自强国民中学文化馆新建工程        | 新竹 | 新竹县立自强国中   | 竟伦营造                 | 2010 |       |
| 193 | 台耀化学厂新建工程                | 桃园 | 台耀化学       | 日商国土开发               | 2010 | 8,952 |
| 194 | 南国 F2 高层住宅               | 台北 | 南国开发       | 中麟营造                 | 2010 |       |
| 195 | 昌晟厂办                     | 基隆 | 昌晟         | 涌立营造                 | 2010 |       |
| 196 | 737 联队航电工厂               | 台东 | 空军         | 达茂营造                 | 2010 |       |
| 197 | 松山工农学生活动中心               | 台北 | 松山工农       | 志勤营造                 | 2010 |       |
| 198 | 捷盟泛用型低温 DC               | 中坜 | 捷盟         | 立华营造                 | 2010 |       |
| 199 | 统一速达                     | 林口 | 统一速达       | 立华营造                 | 2010 |       |
| 200 | 万兴国小活动中心                 | 台北 | 万兴国小       | 春原营造                 | 2010 |       |
| 201 | 力丽 SSP、NCP 酯化系统钢构防火漆工程   | 彰化 | 力丽企业       | 泰成机械                 | 2010 |       |
| 202 | 松山机场货运仓储设置工程             | 台北 | 松山机场       | 黑石工程                 | 2010 |       |
| 203 | 台北县树林市大同国民小学无障碍升降设备工程    | 台北 | 树林国小       | 定丰营造                 | 2010 |       |
| 204 | 福聚太阳能 V1300 钢构新建工程       | 屏东 | 福聚太阳能(股)   | 升邦营造                 | 2010 |       |



| 编号  | 案名                       | 地点  | 业主           | 6025<br>2661<br>营造厂  | 年度   | 数量/单位  |
|-----|--------------------------|-----|--------------|----------------------|------|--------|
| 205 | 信昌公司 C 栋压缩机房钢构新建工程       | 高雄  | 信昌化学工业(股)    | 6025<br>2661<br>擎邦国际 | 2010 |        |
| 206 | W5 第三主变电所油浸式变压器原有防火墙增建工程 | MF3 | 中国钢铁(股)      | 日高工程                 | 2010 |        |
| 207 | B&Q 特力家居南崁商场新建工程         | 桃园  | 特力屋(股)       | 统营营造                 | 2010 | 21,276 |
| 208 | 国立中央大学人文社会科学大学新建工程       | 桃园  | 国立中央大学       |                      | 2010 |        |
| 209 | 华山红砖区建筑修复工程              | 台北  | 行政院文化建设委员会   | 欣隆成工程                | 2011 | 30,257 |
| 210 | 退辅会台北荣民总医院高压氧舱整修工程       | 台北  | 行政院退除役官兵辅导委员 |                      | 2011 | 7,596  |
| 211 | 松山国小校舍扩建暨附建地下停车场新建工程     | 台北  | 松山国小         | 建国工程                 | 2011 | 30,297 |
| 212 | 台塑胜高 PWC2 栋新建工程          | 麦寮  | 台塑胜高科技(股)    | 擎邦国际                 | 2011 | 53,000 |
| 213 | 台塑 SAP 厂新建工程             | 麦寮  | 台湾塑料工业(股)    | 擎邦国际                 | 2011 | 40,355 |
| 214 | 基隆七堵区行政大楼新建工程            | 基隆  | 基隆市政府        | 协泰营造(股)              | 2011 | 23,167 |
| 215 | 升阳光电 II                  | 湖口  | 升阳光电         | 瑞助营造                 | 2011 | 53,082 |

#### 4. 优异的耐候性能 **Excellent Weathering Resistance**

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Steelguard FM 550 具有非常优越的耐候性能，原因在于 Steelguard FM 550 采用了目前最先进的高技术配方以及防火原材料，这使得 Steelguard FM 550 可以具备最优异的耐候性能，尤其在无面漆保护的情况下可以暴露在大气环境下并其在项目的建造中也能体现比同级更优越的防范雨水或其他恶劣的气候条件的性能。Steelguard FM 550 在无面漆的情况下可以在户外暴露长达 12 个月。Steelguard FM 550 has very excellent weathering resistance because of its high tech formulation and raw material and it make Steelguard FM 550 to be the best intumescent product which is with best weathering resistance especially when there is no topcoat applied and necessary to be expose to the outdoor condition when there has temporary no roof which can prevent the steel structures from raining or other bad climates during construction. And there is up to 12 months for Steelguard FM 550 can be exposed to outdoor environment by practice.

**4.2 真实案例-优异的耐候 Real Project Cases – Excellent Natural Weathering Resistance**



**常州朗盛新工厂 Lanxess EPDM (Changzhou):**



地点: 中国常州: Location: Changzhou, China  
 防火涂层 Fireproof: Steelguard FM 550

项目施工经验描述 Description: 在没有任何面漆的情况下, Steelguard FM 550 在自然干燥 48 小时后接触到雨水, 没有发现任何漆膜缺陷 (请见下面图片, 白色的即为没有面漆情况下的 Steelguard FM 550 本身的颜色) Without any topcoat applied and other shelters protection, Steelguard FM 550 have no any defects when expose to rain water after 48 hours natural drying. (Please see below picture of steel structures where white color coatings is PPG's Steelguard FM 550.)



**迪斯尼乐园 Disney Shanghai Park:**

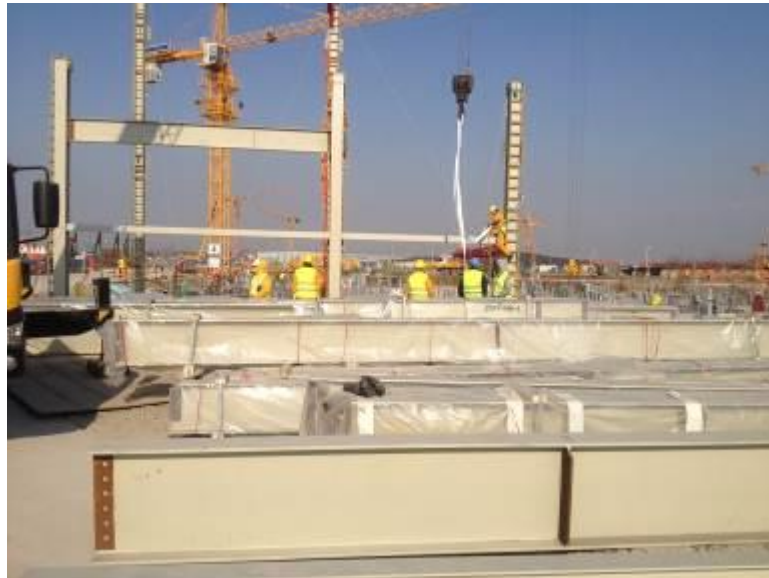
地点: 中国上海 Location: Shanghai, China

防火涂层: Fireproofing: Steelguard FM 550

防火等级: 2.5 小时

**Description:**

没有面漆的 Steelguard FM 550 在现场户外暴露情况下, 经历结构 2 个月的组装工作后, 未见任何缺陷 Without any topcoat applied and other shelters protection, Steelguard FM 550 has stand on site above 2 months and no any defects are found.

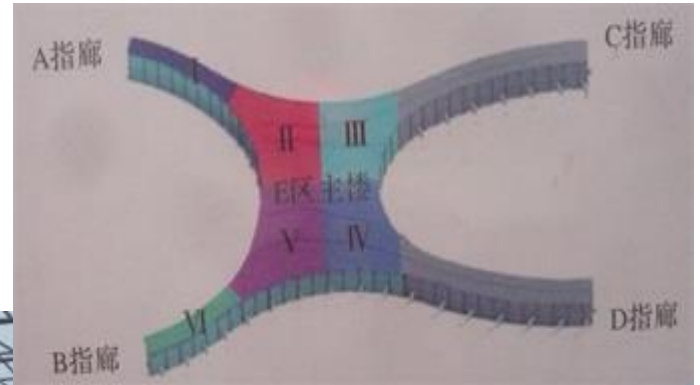




**重庆机场 T3A 航站楼 Chongqing Airport T3A**

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防火等级: 1.5 小时/2.0 小时  
 防火涂料产品: 超薄型膨胀型 Steelguard FM 550  
 面积:12.5 万平米  
 防火涂料用量: 14 万公升

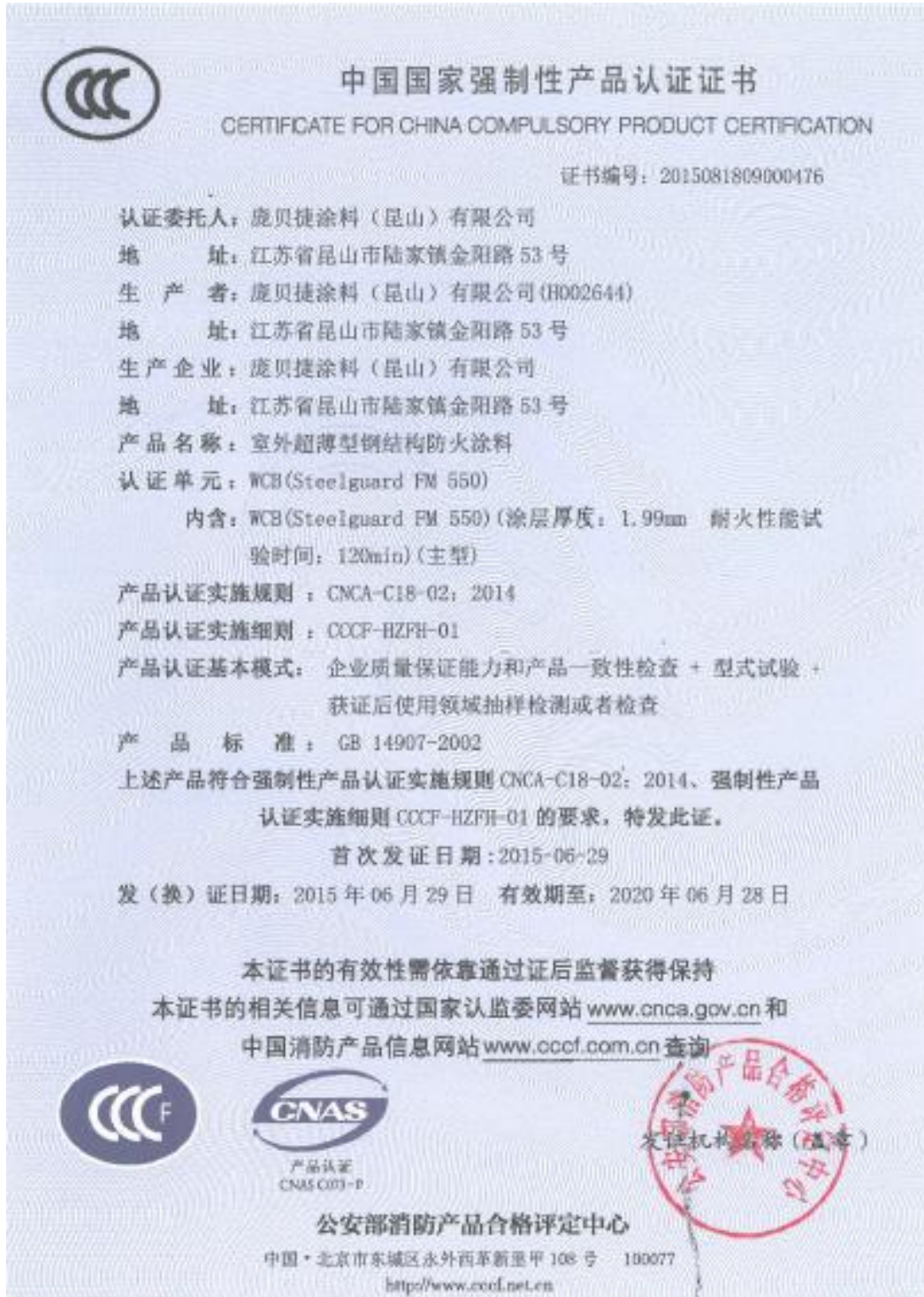




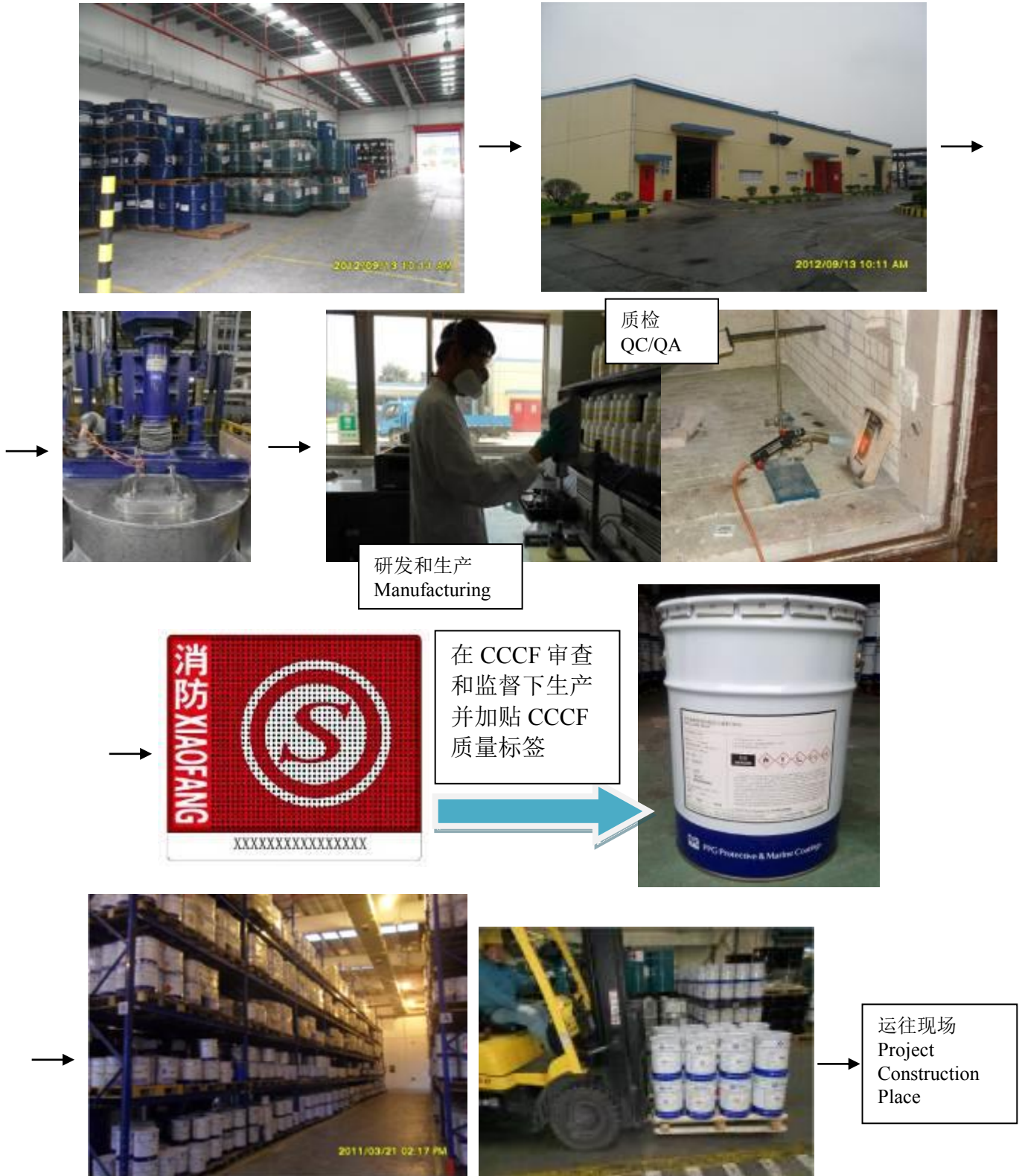
## 5.型式认可证书和防火测试报告 Certificate & Test Reports<sup>6025</sup><sub>2661</sub>

### 5.1 Steelguard FM 550 中国 CCCF 型式认可证书和国内测试报告 Steelguard FM 550 CCCF Type Approval Certificate and fire testing reports

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**6. Steelguard FM 550 在中国的生产、质量检验和供应 Manufacture, QC & Supply in China**  
**6.1 Coatings manufacturing under CCCF & NFTC Control Procedures**





## 7. 产品说明书 Product Data

### 7.1. Steelguard FM 550

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#### DATA

## 室外超薄型钢结构防火涂料FM550

4 页

 2014年1月  
 2013年2月修订版

|                        |   |
|------------------------|---|
| <b>描述</b>              | 适用于钢结构防火专用的双组分超薄漆膜的溶剂型膨胀防火涂料  |
| <b>主要性能</b>            | <ul style="list-style-type: none"> <li>- 可为纤维类火灾提供150分钟 ( 2.5小时)的防护</li> <li>- 在建设工程现场或非工地现场的涂装施工</li> <li>- 单道涂层的干膜厚度可高达1500微米(60密尔)</li> <li>- 适用于国际标准ISO 12944定义的C1至C4腐蚀环境的内外表面；C1腐蚀环境下的干燥内表面则通常不需要加涂面漆。</li> <li>- 只要严格按照信息表 1222的规范要求涂装施工，在不受水淋、不处于高温高湿环境或浸没环境的情况下，涂层耐候高达12个月，可不覆涂外面漆。</li> <li>- 按照国家标准GB 14907和多项通行的国际标准如BS 476-20/21, UL 263, AS 1530:4进行了试验和评判，并获取了相应的证书，符合许多国家的规范要求。</li> </ul> |
| <b>颜色与光泽</b>           | 白色 - 平光   |
| <b>基本数据 20 °C</b>      | ( 1克/厘米 <sup>3</sup> = 8.35磅/美加仑 · 1米 <sup>2</sup> /升=40.7英尺 <sup>2</sup> /美加仑 )<br>(调配混合后的数据)  |
| 密度                     | 1.3克/厘米 <sup>3</sup>  |
| 体积固体含量                 | 68% ± 3%  |
| 挥发性有机物浓度 ( 实测值 )       | 最大值 293 克/千克 (按1999/13/EC, SED标准)<br>最大值 325 克/升 (英国标准UK PG 6/23(92) 附录3)   |
| <b>推荐干膜厚度</b>          | 正常情况下200 - 1500 微米 · 单道涂层<br>注释：涂层干膜厚度必须符合型式认可证书的规定要求。  |
| 理论涂布率                  | 0.97 米 <sup>2</sup> /升 涂层厚度为 700 微米 *   |
| 表干时间                   | 30 分钟 *   |
| 覆涂间隔                   | 自身涂层间覆涂的最短间隔时间为6小时*<br>适合覆涂后道面漆涂层的最短时间为48小时*<br>最大：无限制 *  |
| <b>贮藏有效期 ( 阴凉干燥处 )</b> | 至少12个月<br>*见附表  |
| <b>推荐底材状况与温度</b>       | <ul style="list-style-type: none"> <li>- 认可的底漆，漆膜坚固，表面干燥且无任何污染物。</li> <li>- 在涂装施工和涂层干燥过程中应保证底材表面至少高于露点温度摄氏 3°C以上</li> <li>- 当环境温度低于摄氏5°或高出摄氏40°C时，则不应进行涂装施工。</li> <li>- 涂装施工过程中相对湿度必须低于85%</li> </ul>   |
| <b>使用说明</b>            | <ul style="list-style-type: none"> <li>- 充分搅拌至完全混合均匀的状态，无任何结块。</li> <li>- 过多稀释剂会导致抗流挂性能降低</li> </ul>  |

**DATA**
**室外超薄型钢结构防火涂料FM550**

2014年1月

**无气喷涂**  
 推荐稀释剂

如有必要，可用稀释剂21-06进行兑稀。

**喷嘴扁面角度**  
**喷嘴孔径**  
**喷嘴压力**

 角度为20 - 50°,依据钢板的形状而定。  
 约 0.48 - 0.63 毫米 (=0.019 - 0.025 英寸)  
 20 兆帕 (= 约 200 巴; 2901 磅/英寸<sup>2</sup>)  
**注释**：-包括压力稳定器和喷枪在内的所有滤网都要卸除—推荐  
 30目/500微米的内置滤网

**刷涂/辊涂**  
 推荐稀释剂  
 清洗溶剂

 仅适用于小面积涂装 (预涂和修补)  
 不用稀释剂  
 稀释剂 21-06

**另外数据**
**膜厚与涂布率**

|                         |      |      |      |      |
|-------------------------|------|------|------|------|
| 理论涂布率 米 <sup>2</sup> /升 | 3.40 | 1.70 | 0.97 | 0.68 |
| 干膜厚度 微米                 | 200  | 400  | 700  | 1000 |

刷涂施工的最大干膜厚度: 300 微米

**干膜厚度为700微米(28密尔)的室外超薄型钢结构防火涂料  
 FM550涂层的覆涂间隔时间表**
**自身复涂**

| 底材温度     | 5°C   | 10°C  | 15°C | 20°C | 30°C |
|----------|-------|-------|------|------|------|
| 最短覆涂间隔时间 | 12 小时 | 10 小时 | 8 小时 | 6 小时 | 4 小时 |
| 最长覆涂间隔时间 | 无限制   | 无限制   | 无限制  | 无限制  | 无限制  |

**干膜厚度为1000微米(40密尔)的室外超薄型钢结构防火涂料  
 FM550涂层的覆涂间隔时间**
**用后道涂层**  
 Steelguard 2458进行覆涂

| 底材温度     | 5°C  | 10°C | 15°C  | 20°C  | 30°C  |
|----------|------|------|-------|-------|-------|
| 最短覆涂间隔时间 | 4 小时 | 2 小时 | 90 分钟 | 60 分钟 | 45 分钟 |
| 最长覆涂间隔时间 | 无限制  | 无限制  | 无限制   | 无限制   | 无限制   |



**DATA**

**室外超薄型钢结构防火涂料FM550**

2014年1月

干膜厚度为1000微米的室外超薄型钢结构防火涂料FM550涂层的覆涂间隔时间表

采用其它认可的面漆

| 底材温度     | 5°C    | 10°C  | 15°C  | 20°C  | 30°C  |
|----------|--------|-------|-------|-------|-------|
| 最短覆涂间隔时间 | 120 小时 | 72 小时 | 60 小时 | 48 小时 | 36 小时 |
| 最长覆涂间隔时间 | 无限制    | 无限制   | 无限制   | 无限制   | 无限制   |

固化

干膜厚度700微米(28密尔)的室外超薄型钢结构防火涂料FM550涂层的干燥时间表

| 底材温度 | 小面积修补  |
|------|--------|
| 5°C  | 120 分钟 |
| 10°C | 90 分钟  |
| 15°C | 60 分钟  |
| 20°C | 30 分钟  |
| 30°C | 20 分钟  |

涂层干燥时间可能随着环境条件、工作截面的A/V m<sup>-1</sup> (Hp/A) 和漆膜厚度的不同而发生变化

参考

|                |             |
|----------------|-------------|
| 转换表            | 参见附录信息1410  |
| 产品数据说明         | 请参阅表 1411   |
| 安全指导           | 请参阅信息表 1430 |
| 密闭场所安全和健康安全    |             |
| 爆炸危害 - 毒品危害    | 请参阅表 1431   |
| 钢材表面处理         | 请参阅表 1490   |
| 矿物磨料规范         | 请参阅表 1491   |
| 相对湿度-底材温度-空气温度 | 请参阅表 1650   |

安全防范

- 涂料及其推荐稀释剂参见安全事项表1430、1431 和相关的材料安全数据说明书
- 这是溶剂型涂料，必须避免吸入漆雾和溶剂；另外，皮肤和眼睛不宜接触未干的油漆。





**DATA**

**室外超薄型钢结构防火涂料FM550**

2014年1月

**担保**

庞贝捷涂料保证 (1) 拥有该产品的品名所有权, (2) 产品质量符合该产品生产日期所执行的相关技术质量规范, (3) 所供产品不存在第三方针对美国专利权的侵权行为的合法索赔。\$ 以上保证内容只限于庞贝捷涂料所作出的担保和其它依据现行法律、法规须对事务处理和高贸行为所作出明定或暗示的保证; 包括不遵循限制条件的滥用情况, 任何针对特殊诉求或用途的其它保证, 不属此列范围, 庞贝捷涂料将免于索赔责任。\$ 如需依据此份保函申请索赔, 购买者必须在发现质量问题起 5 天时间内, 同时须确认日期在该产品的有效储存期里或者自该产品交付给购买者之日后 1 年之内, 以书面型式通告庞贝捷涂料, 如果购买者未能按照以上要求通告所出现的缺陷问题, 将有碍于其依据本保函从庞贝捷涂料获取赔偿!

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287673      产品说明书      7732  
               白色                      3000AM2200





## 7.2. SigmaCover 280

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**DATA**


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### SIGMACOVER 280

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6 pages

 October 2012  
 Revision of November 2010

|                                  |  |
|----------------------------------|--|
| <b>Description</b>               | two component polyamide cured epoxy primer   |
| <b>PRINCIPAL CHARACTERISTICS</b> | <ul style="list-style-type: none"> <li>- general purpose epoxy primer in protective coating systems for steel and non ferrous metals</li> <li>- good adhesion to steel and galvanised steel</li> <li>- good adhesion to non ferrous metals</li> <li>- good flow and wetting properties</li> <li>- good water and corrosion resistance</li> <li>- cures at temperatures down to +5°C</li> <li>- suitable for touching up of weld seams and damages of epoxy coatings</li> </ul> <p style="margin-left: 20px;">two component polyurethane coatings</p> <ul style="list-style-type: none"> <li>- suitable on wet blast cleaned substrates (damp or dry)</li> <li>- compatible with well designed cathodic protection systems</li> </ul> |
| <b>COLOURS AND GLOSS</b>         | yellow/green (redbrown on request) – eggshell  |
| <b>BASIC DATA AT 20 °C</b>       | (1 g/cm <sup>3</sup> = 8.35 lb/US gal; 1 m <sup>2</sup> /l = 40.7 ft <sup>2</sup> /US gal)<br>(data for mixed product)   |
| Mass density                     | 1.3 g/cm <sup>3</sup>  |
| Volume solids                    | 57% ± 2%   |
| VOC (Directive 1999/13/EC, SED)  | max. 327 g/kg (Directive 1999/13/EC, SED)  |
| VOC (UK PG 6/23(92) appendix 3)  | max. 432 g/l (approx. 3.6 lb/gal)<br>(UK PG 6/23(92) Appendix 3)   |
| Recommended dry film thickness   | 50 - 100 µm depending on system  |
| Theoretical spreading rate       | 11.4 m <sup>2</sup> /l for 50 µm<br>5.7 m <sup>2</sup> /l for 100 µm *   |
| Touch dry after                  | 1.5 hour at 20 °C  |
| Overcoating interval             | min. see tables *<br>max. see tables *   |
| Full cure after                  | 7 days *<br>(data for components)  |
| Shelf life (cool and dry place)  | at least 24 months<br>* see additional data  |

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**DATA**

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**SIGMACOVER 280**

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October 2012

**RECOMMENDED  
 SUBSTRATE CONDITIONS  
 AND TEMPERATURES**

- **for immersion exposure:**
  - steel or steel with not approved zinc silicate shop primer; blast cleaned (dry or wet) to ISO-Sa2½, blasting profile 30 - 75 µm
  - steel with approved zinc silicate shop primer; weld seams and areas of damaged shop primer or breakdown should be blast cleaned to ISO-Sa2½, blasting profile 30 - 75 µm or power tool cleaned to SPSS-Pt3
  - coated steel; hydrojetted to VIS WJ2 L (blasting profile 30 - 75 µm)
  
- **IMO-MSC.215(82) Requirements for Water Ballast Tanks:**
  - steel; ISO 8501-3:2006 grade P2, with all edges treated to a rounded radius of minimum 2 mm or subject to three pass grinding
  - steel or steel with not approved zinc silicate shop primer; blast cleaned to ISO-Sa2½, blasting profile 30 - 75 µm
  - steel with approved zinc silicate shop primer; weld seams and areas of damaged shop primer or breakdown should be blast cleaned to ISO-Sa2½, blasting profile 30 - 75 µm
    - for shop primer with IMO type approval; no additional requirements
    - for shop primer without IMO type approval; blast cleaned to ISO-Sa2 removing at least 70% of intact shop primer, blasting profile 30 - 75 µm
  - dust quantity rating "1 for dust size class "3", "4" or "5", lower dust size classes to be removed if visible on the surface to be coated without magnification (ISO 8502-3:1992)
  
- **for atmospheric exposure conditions:**
  - steel; blast cleaned to ISO-Sa2½, blasting profile 30 - 75 µm or according to ISO-St3
  - shop primed steel; pretreated to SPSS-Pt3
  - galvanised steel; cleaned from grease, salts, contamination and roughened up
  - substrate temperature should be above 5°C and at least 3°C above dew point during application and curing
  - maximum relative humidity during application and curing is 85%

**SYSTEM SPECIFICATION**

- marine system sheets: 3101, 3102, 3103, 3104,  
3105, 3106 (spec. 5,7), 3107, 3108



**DATA**

**SIGMACOVER 280**

October 2012

**INSTRUCTIONS FOR USE**

mixing ratio by volume: base to hardener 80 : 20

- the temperature of the mixed base and hardener should preferably be above 15°C, otherwise extra solvent may be required to obtain application viscosity
- too much solvent results in reduced sag resistance and slower cure
- thinner should be added after mixing the components

Induction time  
 Pot life

none  
 8 hours at 20 °C \*  
 \* see additional data

**AIR SPRAY**

Recommended thinner  
 Volume of thinner

Thinner 91-92  
 0 - 10%, depending on required thickness and application conditions, viscosity  
 - too much solvent results in reduced sag resistance and slower cure  
 - thinner should be added after mixing the components

Induction time  
 Pot life

none  
 8 hours at 20 °C \*  
 \* see additional data

**AIR SPRAY**

Recommended thinner  
 Volume of thinner  
 Nozzle orifice  
 Nozzle pressure

Thinner 91-92  
 0 - 10%, depending on required thickness and application conditions  
 1.5 - 2 mm  
 0.3 - 0.4 MPa (= approx. 3 - 4 bar; 44 - 58 p.s.i.)

**AIRLESS SPRAY**

Recommended thinner  
 Volume of thinner  
 Nozzle orifice  
 Nozzle pressure

Thinner 91-92  
 0 - 10%, depending on required thickness and application conditions  
 approx. 0.46 mm (= 0.018 in)  
 15 MPa (= approx. 150 bar; 2176 p.s.i.)

**BRUSH/ROLLER**

Recommended thinner  
 Volume of thinner

no extra thinner is necessary,  
 but up to 5% Thinner 91-92 can be added if desired

**CLEANING SOLVENT**

Thinner 90-53

**Film thickness and spreading rate**

|  |      |     |     |
|--|------|-----|-----|
| theoretical spreading rate m <sup>2</sup> /l | 11.4 | 7.6 | 5.7 |
| dft in µm                                    | 50   | 75  | 100 |

Maximum dft when brushing: 50 µm





**DATA**

**SIGMACOVER 280**

October 2012

**Overcoating table for SigmaCover 280 for dft up to 100 µm**

with various two pack epoxy- and polyurethane coatings

| substrate temperature  | 5°C      | 10°C     | 20°C     | 30°C     | 40°C     |
|--|----------|----------|----------|----------|----------|
| minimum interval   | 36 hours | 16 hours | 8 hours  | 6 hours  | 4 hours  |
| Max interval when exposed to direct sunshine maximum interval            | 3 months | 3 months | 3 months | 2 months | 2 months |
| Max interval when <b>not</b> exposed to direct sunshine maximum interval | 6 months | 6 months | 6 months | 4 months | 3 months |

- surface should be dry and free from any contamination

**Overcoating table for SigmaCover 280 for dft up to 100 µm**

with other types of paint like: most chlorinated rubber-, vinyl-, alkyd coatings

| substrate temperature | 5°C      | 10°C     | 20°C    | 30°C    | 40°C    |
|-----------------------|----------|----------|---------|---------|---------|
| minimum interval      | 16 hours | 10 hours | 5 hours | 3 hours | 2 hours |
| maximum interval      | 21 days  | 21 days  | 10 days | 7 days  | 4 days  |

- surface should be dry and free from any contamination
- glossy finishes require a corresponding undercoat

**Curing**

**Curing table for dft up to 100 µm**

| substrate temperature | touch dry | dry to handle | full cure |
|-----------------------|-----------|---------------|-----------|
| 5°C                   | 8 hours   | 13 hours      | 21 days   |
| 10°C                  | 4 hours   | 6 hours       | 14 days   |
| 20°C                  | 2 hours   | 2.5 hours     | 7 days    |
| 30°C                  | 1 hour    | 1.5 hour      | 5 days    |
| 40°C                  | 45 min.   | 1 hour        | 3 days    |

- adequate ventilation must be maintained during application and curing (please refer to sheets 1433 and 1434)



**DATA**

**SIGMACOVER 280**

October 2012

**Pot life (at application viscosity)**

|       |          |
|-------|----------|
| 15 °C | 10 hours |
| 20 °C | 8 hours  |
| 30 °C | 5 hours  |
| 35 °C | 4 hours  |

**Worldwide availability**

Whilst it is always the aim of Sigma Coatings to supply the same product on a worldwide basis, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances.  
 Under these circumstances an alternative product data sheet is used.

**REFERENCES**

Conversion labels see information sheet 1410  
 Explanation to product data sheets see information sheet 1411  
 Safety indications see information sheet 1430  
 Safety in confined spaces and health safety  
 Explosion hazard - toxic hazard see information sheet 1431  
 Safe working in confined spaces see information sheet 1433  
 Directives for ventilation practice see information sheet 1434  
 Cleaning of steel and removal of rust see information sheet 1490  
 Specification for mineral abrasives see information sheet 1491  
 Relative humidity - substrate temperature -  
 air temperature see information sheet 1650  
 PPG Protective & Marine Coatings Ballast Tank Working  
 Procedure New Building

**SAFETY PRECAUTIONS**

- for paint and recommended thinners see safety sheets 1430, 1431 and relevant material safety data sheets
- this is a solvent borne paint and care should be taken to avoid inhalation of spray mist or vapour as well as contact between the wet paint and exposed skin or eyes



**DATA**

**SIGMACOVER 280**

October 2012

**WARRANTY**

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product.

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Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

**LIMITATIONS OF LIABILITY**

IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT.

The information in this sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk. PPG has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, PPG does not accept any liability arising from any loss, injury or damage resulting from such use or the contents of this information (unless there are written agreements stating otherwise). Variations in the application environment, changes in procedures of use, or extrapolation of data may cause unsatisfactory results.

This sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this information is current prior to using the product. Current sheets for all PPG Protective & Marine Coatings products are maintained at [www.ppgpmc.com](http://www.ppgpmc.com).

The English text of this data sheet shall prevail over any translation thereof.

|        |              |   |
|--------|--------------|---|
|        | PDS          | 7417                                      |
| 179083 | yellow/green | 4009002200 (144497 base, 142014 hardener) |
| 179085 | redbrown     | 6137002200 (144493 base, 142014 hardener) |





### 7.3. SigmaCover 246

 6025  
 2661

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**DATA**


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## SIGMACOVER 246

4 pages

 September 2008  
 Revision of July 2006

|  |   |
|--|---|
| <b>DESCRIPTION</b>                                       | two component polyamide high build epoxy primer/build coat, containing zinc phosphate   |
| <b>PRINCIPAL CHARACTERISTICS</b>                         | <ul style="list-style-type: none"> <li>- general purpose epoxy coating in protective coating systems for the protection of steel structures in atmospheric exposure</li> <li>- good adhesion to steel</li> <li>- good flow and wetting properties</li> <li>- easy application by airless spray</li> <li>- cures at temperatures down to +5°C</li> <li>- good performance on top of zinc silicate primers</li> </ul> |
| <b>COLOURS AND GLOSS</b>                                 | redbrown, cream, grey - eggshell  |
| <b>BASIC DATA AT 20°C</b>                                | (1 g/cm <sup>3</sup> = 8.25 lb/US gal; 1 m <sup>2</sup> /l = 40.7 ft <sup>2</sup> /US gal)<br>(data for mixed product)  |
| Mass density   | 1.4 g/cm <sup>3</sup>   |
| Volume solids  | 64 ± 2%   |
| VOC (supplied)   | max. 241 g/kg (Directive 1999/13/EC, SED)<br>max. 337 g/l (approx. 2.8 lb/gal)  |
| Recommended dry film thickness                           | 75 - 150 µm   |
| Theoretical spreading rate                               | 8.5 m <sup>2</sup> /l for 75 µm   |
| Touch dry after  | 2 hours *   |
| Overcoating interval                                     | min. 10 hours *<br>max. 6 months *  |
| Full cure after  | 7 days *  |
|  | (data for components)   |
| Shelf life (cool and dry place)                          | at least 12 months<br>* see additional data   |
| <b>RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES</b> | <ul style="list-style-type: none"> <li>- steel; blast cleaned to ISO-Sa2½ or power tool cleaned to min. ISO-Si3</li> <li>- zinc silicate primer; (SigmaZinc 158, SigmaWeld 165 or SigmaWeld 199) a mist coat is required</li> <li>- substrate temperature should be at least 5°C and at least 3°C above dew point during application and curing</li> </ul>  |



**DATA**

**SIGMACOVER 246**

September 2008

**INSTRUCTIONS FOR USE**

mixing ratio by volume: base to hardener 80 : 20

- the temperature of the mixed base and hardener should preferably be above 15°C, otherwise extra solvent may be required to obtain application viscosity
- too much solvent results in reduced sag resistance and slower cure
- thinner should be added after mixing the components

on top of zinc silicates (SigmaZinc 158) a special spray technique is needed: application of two coats wet on wet with a flash off time of approx. 2 minutes in between

Pot life

8 hours at 20°C \*  
 \* see additional data

**AIRLESS SPRAY**

Recommended thinner  
 Volume of thinner  
 Nozzle orifice  
 Nozzle pressure

Sigma thinner 91-92  
 0 - 10%, depending on required thickness and application conditions  
 approx. 0.45 - 0.53 mm (= 0.018 - 0.021 in)  
 14 - 25 MPa (= approx. 140 - 250 bar; 2000 - 3500 p.s.i.)

**BRUSH/ROLLER**

Recommended thinner  
 Volume of thinner

Sigma thinner 91-92  
 0 - 5%  
 Application by brush may show brush marking, due to the thixotropic nature of the paint and is most suitable to small areas, tight angle areas or for stripe coating or touch up.  
 Application by roller will leave roller marking and is suitable for minimum dft requirements only.  
 A roller suitable for epoxy application only must be used.

**CLEANING SOLVENT**

Sigma thinner 90-53

**SAFETY PRECAUTIONS**

for paint and recommended thinners see safety sheets 1430, 1431 and relevant material safety data sheets

this is a solvent borne paint and care should be taken to avoid inhalation of spray mist or vapour as well as contact between the wet paint and exposed skin or eyes

**ADDITIONAL DATA**

**Film thickness and spreading rate**

|  |     |     |     |
|--|-----|-----|-----|
| theoretical spreading rate m <sup>2</sup> /l | 8.5 | 6.4 | 4.2 |
| dft in µm                                    | 75  | 100 | 150 |





**DATA**

**SIGMACOVER 246**

September 2008

**Overcoating table for SigmaCover 246 for dft up to 150 µm**

| substrate temperature                            | 10°C     | 20°C     | 30°C     | 40°C     |
|--|----------|----------|----------|----------|
| minimum interval                                 | 24 hours | 10 hours | 8 hours  | 6 hours  |
| maximum interval                                 | --       | --       | --       | --       |
| maximum interval when exposed to direct sunshine | 3 months | 3 months | 3 months | 3 months |

\* This product has an unlimited maximum overcoating interval provided the surface is free from chalking and other contamination.  
 In cases of exposure to direct sunlight or when the surface is contaminated it is recommended that the surface be cleaned and roughened to ensure good adhesion of the subsequent coating.  
 The optimum intercoat adhesion is obtained when the subsequent coating is applied before the full cure time of the previous coating has elapsed.

**Curing table for dft up to 100 µm**

| substrate temperature | touch dry | dry to handle | full cure |
|-----------------------|-----------|---------------|-----------|
| 5°C                   | 12 hours  | 24 hours      | 20 days   |
| 10°C                  | 7 hours   | 18 hours      | 14 days   |
| 15°C                  | 5 hours   | 12 hours      | 10 days   |
| 20°C                  | 3 hours   | 6 hours       | 7 days    |
| 30°C                  | 2 hours   | 4 hours       | 3 days    |
| 40°C                  | 1 hour    | 3 hours       | 2 days    |

– adequate ventilation must be maintained during application and curing (please refer to sheet 1433 and 1434)

**Pot life (at application viscosity)**

|      |          |
|------|----------|
| 10°C | 16 hours |
| 15°C | 12 hours |
| 20°C | 8 hours  |
| 25°C | 6 hours  |
| 30°C | 4 hours  |
| 40°C | 2 hours  |



**DATA**

**SIGMACOVER 246**

September 2008

**Worldwide availability**

Whilst it is always the aim of PPG Protective & Marine Coatings to supply the same product on a worldwide basis, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

**REFERENCES**

|   |                            |
|---|----------------------------|
| Explanation to product data sheets          | see information sheet 1411 |
| Safety indications                          | see information sheet 1430 |
| Safety in confined spaces and health safety |                            |
| Explosion hazard - toxic hazard             | see information sheet 1431 |
| Safe working in confined spaces             | see information sheet 1433 |
| Directives for ventilation practice         | see information sheet 1434 |

**LIMITATION OF LIABILITY**

The information in this data sheet is based upon laboratory tests we believe to be accurate and is intended for guidance only. All recommendations or suggestions relating to the use of the Sigma Coatings products made by PPG Protective & Marine Coatings, whether in technical documentation, or in response to a specific enquiry, or otherwise, are based on data which to the best of our knowledge are reliable. The products and information are designed for users having the requisite knowledge and industrial skills and it is the end-user's responsibility to determine the suitability of the product for its intended use.

PPG Protective & Marine Coatings has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. PPG Protective & Marine Coatings does therefore not accept any liability arising from loss, injury or damage resulting from such use or the contents of this data sheet (unless there are written agreements stating otherwise).

The data contained herein are liable to modification as a result of practical experience and continuous product development.

This data sheet replaces and annuls all previous issues and it is therefore the user's responsibility to ensure that this sheet is current prior to using the product.

The English text of this document shall prevail over any translation thereof.

PDS 6821



## 7.4. SigmaCover 410

 6025  
 2661


**DATA**

### SIGMACOVER 410


**Globally Available**

4 pages

 August 2012  
 Revision of August 2011

|   |   |
|---|---|
| Description                                       | Two component high solids, high build, polyamide cured epoxy coating  |
| PRINCIPAL CHARACTERISTICS                         | <ul style="list-style-type: none"> <li>- general purpose epoxy build coat in protective coating systems for steel and concrete structures exposed to atmospheric land or marine conditions</li> <li>- excellent durability</li> <li>- can be recoated with various two component and conventional coatings even after long weathering periods</li> <li>- easy application by airless spray</li> <li>- available in MIO or conventional pigmented grade</li> </ul> |
| COLOURS AND GLOSS                                 | MIO and a selected range of colours – flat  |
| BASIC DATA AT 20 °C                               | (1 g/cm <sup>3</sup> = 8.35 lb/US gal; 1 m <sup>2</sup> = 40.7 ff/US gal)<br>(data for mixed product)   |
| Mass density                                      | 1.9 g/cm <sup>3</sup> (MIO), 1.5 g/cm <sup>3</sup> (conventional pigmented grade)   |
| Volume solids                                     | 80% ± 2%  |
| VOC (Directive 1999/13/EC, SED)                   | max. 126 g/kg (Directive 1999/13/EC, SED)   |
| VOC (UK PG 623(92) appendix 3)                    | max. 240 g/l (approx. 2.0 lb/gal)<br>(UK PG 623(92) Appendix 3)   |
| Recommended dry film thickness                    | 75 - 200 µm depending on system   |
| Theoretical spreading rate                        | 10.7 m <sup>2</sup> /l for 75 µm *  |
| Touch dry after                                   | 3 hours * at 20 °C  |
| Overcoating interval                              | min. 10 hours *<br>max. 6 months *  |
| Full cure after                                   | 7 days * at 20 °C   |
|   | (data for components)   |
| Shelf life (cool and dry place)                   | at least 12 months<br>* see additional data   |
| RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES | <ul style="list-style-type: none"> <li>- previous suitable primer; dry and free from any contamination and zinc salts, and sufficiently roughened if necessary</li> <li>- when applied to zinc silicate, a mist coat and full coat technique is required</li> <li>- substrate temperature should be at least 15°C and at least 3°C above dew point during application and curing</li> </ul>   |
| INSTRUCTIONS FOR USE                              | mixing ratio by volume: base to hardener 80 : 20<br><br><ul style="list-style-type: none"> <li>- the temperature of the mixed base and hardener should preferably be above 15°C, otherwise extra solvent may be required to obtain application viscosity</li> <li>- too much solvent results in reduced sag resistance and slower cure</li> <li>- thinner should be added after mixing the components</li> </ul>  |
| Induction time                                    | none  |

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**DATA**


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**SIGMA COVER 410**


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August 2012

 Pot life 6 hours at 20 °C \*  
 \* see additional data

**AIRLESS SPRAY**  
 Recommended thinner Thinner 91-92  
 Volume of thinner 0 - 10%, 30 - 40% when mist coat applied  
 Nozzle orifice approx. 0.45 - 0.53 mm (= 0.018 - 0.021 in)  
 Nozzle pressure 20 - 25 MPa (= 200 - 250 bar; 2901 - 3626 p.s.i.)

**BRUSH/ROLLER**  
 Recommended thinner Thinner 91-92  
 Volume of thinner 0 - 5%  
 Application by brush may show brush marking, due to the thixotropic nature of the paint and is most suitable to small areas, tight angle areas or for stripe coating or touch up.  
 Application by roller will leave roller marking and is suitable for minimum dft requirements only.  
 A roller suitable for epoxy application only must be used.

CLEANING SOLVENT - Thinner 90-53

ADDITIONAL DATA Film thickness and spreading rate

|  |      |     |     |
|--|------|-----|-----|
| theoretical spreading rate m <sup>2</sup> /l | 10.7 | 5.3 | 4   |
| dft in µm                                    | 75   | 150 | 200 |

Overcoating table for SigmaCover 410 for dft up to 200 µm

| substrate temperature | 5°C      | 10°C     | 20°C    | 30°C    | 40°C    |
|-----------------------|----------|----------|---------|---------|---------|
| minimum interval      | 36 hours | 24 hours | 8 hours | 6 hours | 4 hours |

for various two pack epoxy- or polyurethane paint

- \* This product has an unlimited maximum overcoating interval provided the surface is free from chalking and other contamination.
- In cases of exposure to direct sunlight or when the surface is contaminated it is recommended that the surface be cleaned and roughened to ensure good adhesion of the subsequent coating.
- The optimum intercoat adhesion is obtained when the subsequent coating is applied before the full cure time of the previous coating has elapsed.



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**DATA**


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**SIGMA COVER 410**


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August 2012

**Curing**

Curing table for dft up to 200 µm

| substrate temperature | touch dry | dry to handle | full cure |
|-----------------------|-----------|---------------|-----------|
| 5°C                   | 12 hours  | 30 hours      | 20 days   |
| 10°C                  | 6 hours   | 24 hours      | 14 days   |
| 15°C                  | 4 hours   | 10 hours      | 10 days   |
| 20°C                  | 3 hours   | 8 hours       | 7 days    |
| 30°C                  | 2 hours   | 6 hours       | 5 days    |
| 40°C                  | 1.5 hour  | 4 hours       | 3 days    |

- adequate ventilation must be maintained during application and curing (please refer to sheets 1433 and 1434)

Pot life (at application viscosity)

|       |          |
|-------|----------|
| 10 °C | 12 hours |
| 15 °C | 10 hours |
| 20 °C | 6 hours  |
| 25 °C | 4 hours  |
| 30 °C | 3 hours  |
| 40 °C | 2 hours  |

**Worldwide availability**

Whilst it is always the aim of Sigma Coatings to supply the same product on a worldwide basis, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

**REFERENCES**

|   |                            |
|---|----------------------------|
| Explanation to product data sheets                          | see information sheet 1411 |
| Safety indications  | see information sheet 1430 |
| Safety in confined spaces and health safety                 |                            |
| Explosion hazard - toxic hazard                             | see information sheet 1431 |
| Safe working in confined spaces                             | see information sheet 1433 |
| Directives for ventilation practice                         | see information sheet 1434 |
| Conversion labels   | see information sheet 1410 |
| Relative humidity - substrate temperature - air temperature | see information sheet 1660 |

**SAFETY PRECAUTIONS**

- for paint and recommended thinners see safety sheets 1430, 1431 and relevant material safety data sheets
- this is a solvent borne paint and care should be taken to avoid inhalation of spray mist or vapour as well as contact between the wet paint and exposed skin or eyes



**DATA**

**SIGMA COVER 410**

August 2012

**WARRANTY**

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product.

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Any claim under this warranty must be made by Buyer to PPG in writing within the (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

**LIMITATIONS OF LIABILITY**

IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT.

The information in this sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, at its sole discretion and risk. PPG has no control over either the quality or condition of the substrate, or the many factors affecting the use and application of the product. Therefore, PPG does not accept any liability arising from any loss, injury or damage resulting from such use or the contents of this information (unless there are written agreements stating otherwise). Variations in the application environment, changes in procedure of use, or extrapolation of data may cause unsatisfactory results.

This sheet supersedes all previous versions and it is the Buyer's responsibility to ensure that this information is current prior to using the product. Current sheets for all PPG Protective & Marine Coatings products are maintained at [www.ppgpmc.com](http://www.ppgpmc.com).

The English text of this data sheet shall prevail over any translation thereof.

PDS 6823



## 7.5. SigmaDur 550

6025  
2661

### DATA

## SIGMADUR 550



4 pages

May 2012  
Revision of December 2010

|  |   |
|--|---|
| <b>Description</b>                                       | two component aliphatic acrylic polyurethane finish   |
| <b>PRINCIPAL CHARACTERISTICS</b>                         | <ul style="list-style-type: none"> <li>- unlimited recoatable</li> <li>- excellent resistance to atmospheric exposure conditions</li> <li>- excellent colour and gloss retention</li> <li>- non-chalking, non-yellowing</li> <li>- cures at temperatures down to -5°C</li> <li>- resistant to splash of mineral and vegetable oils, paraffins, aliphatic petroleum products and mild chemicals</li> </ul>   |
| <b>COLOURS AND GLOSS</b>                                 | white and various other colours (see also the SigmaCare Shade Card of PPG Protective & Marine Coatings) – gloss   |
| <b>BASIC DATA AT 20 °C</b>                               | (1 g/cm <sup>3</sup> = 8.35 lb/US gal; 1 m <sup>2</sup> /l = 40.7 ft <sup>2</sup> /US gal)<br>(data for mixed product)  |
| Mass density   | 1.3 g/cm <sup>3</sup>   |
| Volume solids  | 55% ± 2%  |
| VOC (Directive 1999/13/EC, SED)                          | max. 334 g/kg (Directive 1999/13/EC, SED)   |
| VOC (UK PG 6/23(92) appendix 3)                          | max. 430 g/l (approx. 3.6 lb/gal)   |
| Recommended dry film thickness                           | 50 - 60 µm depending on system  |
| Theoretical spreading rate                               | 11.0 m <sup>2</sup> /l for 50 µm *  |
| Touch dry after  | 1 hour at 20 °C   |
| Overcoating interval                                     | min. 6 hours *<br>max. unlimited  |
| Full cure after  | 4 days * at 20 °C<br><br>(data for components)  |
| Shelf life (cool and dry place)                          | at least 24 months<br>* see additional data   |
| <b>RECOMMENDED SUBSTRATE CONDITIONS AND TEMPERATURES</b> | <ul style="list-style-type: none"> <li>- previous coat; (epoxy or polyurethane) dry and free from any contamination and sufficiently roughened if necessary</li> <li>- during application and curing a substrate temperature down to -5°C is acceptable provided the substrate is dry and free from ice</li> <li>- substrate temperature should be at least 3°C above dew point</li> <li>- maximum relative humidity during application and curing is 85%</li> <li>- premature exposure to early condensation and rain may cause colour and gloss change</li> </ul> |



**DATA**

**SIGMADUR 550**

May 2012

**INSTRUCTIONS FOR USE**

mixing ratio by volume: base to hardener 88 : 12

- the temperature of the mixed base and hardener should preferably be above 10°C, otherwise extra solvent may be required to obtain application viscosity
- thinner should be added after mixing the components
- too much solvent results in reduced sag resistance

Induction time  
Pot life

none  
5 hours at 20 °C \*  
\* see additional data

**AIR SPRAY**

Recommended thinner  
Volume of thinner  
Nozzle orifice  
Nozzle pressure

Thinner 21-06  
3 - 5%, depending on required thickness and application conditions  
1.0 - 1.5 mm  
0.3 - 0.4 MPa (= approx. 3 - 4 bar; 44 - 58 p.s.i.)

**AIRLESS SPRAY**

Recommended thinner  
Volume of thinner  
Nozzle orifice  
Nozzle pressure

Thinner 21-06  
3 - 5%, depending on required thickness and application conditions  
approx. 0.44 - 0.49 mm (= 0.017 - 0.019 in)  
20 MPa (= approx. 200 bar; 2901 p.s.i.)

**BRUSH/ROLLER**

Recommended thinner  
Volume of thinner

Thinner 21-06  
0 - 5%

**CLEANING SOLVENT**

Thinner 90-53

**ADDITIONAL DATA**

**Film thickness and spreading rate**

|  |    |     |
|--|----|-----|
| theoretical spreading rate m <sup>2</sup> /l | 11 | 9.2 |
| dft in µm                                    | 50 | 60  |

**Overcoating table for SigmaDur products**



**DATA**

**SIGMADUR 550**

May 2012

**Curing**

**Curing table**

| substrate temperature | dry to handle | full cure |
|-----------------------|---------------|-----------|
| -5°C                  | 24 hours      | 15 days   |
| 0°C                   | 16 hours      | 11 days   |
| 10°C                  | 8 hours       | 6 days    |
| 20°C                  | 6 hours       | 4 days    |
| 30°C                  | 5 hours       | 3 days    |
| 40°C                  | 3 hours       | 2 days    |

- adequate ventilation must be maintained during application and curing (please refer to sheets 1433 and 1434)
- premature exposure to early condensation and rain may cause colour and gloss change

**Pot life (at application viscosity)**

|       |         |
|-------|---------|
| 10 °C | 7 hours |
| 20 °C | 5 hours |
| 30 °C | 3 hours |
| 40 °C | 2 hours |

**Worldwide availability**

Whilst it is always the aim of Sigma Coatings to supply the same product on a worldwide basis, slight modification of the product is sometimes necessary to comply with local or national rules/circumstances. Under these circumstances an alternative product data sheet is used.

**REFERENCES**

|   |                            |
|---|----------------------------|
| Conversion labels   | see information sheet 1410 |
| Explanation to product data sheets                          | see information sheet 1411 |
| Safety indications  | see information sheet 1430 |
| Safety in confined spaces and health safety                 |                            |
| Explosion hazard - toxic hazard                             | see information sheet 1431 |
| Safe working in confined spaces                             | see information sheet 1433 |
| Directives for ventilation practice                         | see information sheet 1434 |
| Relative humidity - substrate temperature - air temperature | see information sheet 1650 |

**SAFETY PRECAUTIONS**

- for paint and recommended thinners see safety sheets 1430, 1431 and relevant material safety data sheets
- this is a solvent borne paint and care should be taken to avoid inhalation of spray mist or vapour as well as contact between the wet paint and exposed skin or eyes
  - contains a toxic polyisocyanate curing agent
  - avoid at all times inhalation of aerosol spraymist





**DATA**

**SIGMADUR 550**

May 2012

**WARRANTY**

PPG warrants (i) its title to the product, (ii) that the quality of the product conforms to PPG's specifications for such product in effect at the time of manufacture and (iii) that the product shall be delivered free of the rightful claim of any third person for infringement of any U.S. patent covering the product.

THESE ARE THE ONLY WARRANTIES THAT PPG MAKES AND ALL OTHER EXPRESS OR IMPLIED WARRANTIES, UNDER STATUTE OR ARISING OTHERWISE IN LAW, FROM A COURSE OF DEALING OR USAGE OF TRADE, INCLUDING WITHOUT LIMITATION, ANY OTHER WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE DISCLAIMED BY PPG.

Any claim under this warranty must be made by Buyer to PPG in writing within five (5) days of Buyer's discovery of the claimed defect, but in no event later than the expiration of the applicable shelf life of the product, or one year from the date of the delivery of the product to the Buyer, whichever is earlier. Buyer's failure to notify PPG of such non-conformance as required herein shall bar Buyer from recovery under this warranty.

**LIMITATIONS OF LIABILITY**

IN NO EVENT WILL PPG BE LIABLE UNDER ANY THEORY OF RECOVERY (WHETHER BASED ON NEGLIGENCE OF ANY KIND, STRICT LIABILITY OR TORT) FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO, ARISING FROM, OR RESULTING FROM ANY USE MADE OF THE PRODUCT.

The information in this sheet is intended for guidance only and is based upon laboratory tests that PPG believes to be reliable. PPG may modify the information contained herein at any time as a result of practical experience and continuous product development. All recommendations or suggestions relating to the use of the PPG product, whether in technical documentation, or in response to a specific inquiry, or otherwise, are based on data, which to the best of PPG's knowledge, is reliable. The product and related information is designed for users having the requisite knowledge and industrial skills in the industry and it is the end-user's responsibility to determine the suitability of the product for its own particular use and it shall be deemed that Buyer has done so, as its sole discretion and risk.

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The English text of this data sheet shall prevail over any translation thereof.

|        |       |            |
|--------|-------|------------|
|        | PDS   | 7537       |
| 238761 | white | 7000001400 |
| 238763 | white | 7000002200 |



## 7.6. SigmaDur 2800 氟碳面漆

 6025  
 2661

### SIGMADUR 2800 氟碳漆 2800

共 四 页

2011 年 03 月 版

|                  |  |
|------------------|--|
| 简 介              | 双组份自干型高固体氟碳面漆，优异的保色性和耐候性   |
| 主要性能             | <ul style="list-style-type: none"> <li>— 无覆涂间隔时间限制</li> <li>— 优异的耐候性</li> <li>— 优异的保色及保光性</li> </ul>   |
| 颜色与光泽            | 白色和其它颜色（见 PPG 色卡）- 有光  |
| 基本数据(20℃)        | (单位换算：1 克/厘米 <sup>3</sup> =8.25 磅/美加仑，1 米 <sup>3</sup> /升=40.7 英尺 <sup>3</sup> /美加仑)<br>(以下数据为 2 组分混合后的数值)   |
| 比 重              | 1.3 克/厘米 <sup>3</sup>  |
| 体积固体含量           | 56% ± 2%   |
| 挥发性有机成份(实测 VOC): | 最大 330 克/公斤（按 1999/13/EC, SED 标准）<br>最大 430 克/升(约 3.6 磅/加仑)  |
| 推荐干膜厚度           | 30-40 微米，随涂层系统的不同要求而浮动   |
| 理论涂布率            | 16.0 米 <sup>2</sup> /升，35 微米厚*   |
| 表干时间             | 3 小时，摄氏 20℃时   |
| 覆涂间隔             | 最小：20 分钟，摄氏 20℃时<br>最大：无限制   |
| 贮藏有效期<br>(阴凉干燥处) | 至少 12 个月（混合前未开封的独立包装组份）  |
| 推荐底材             | — 前道涂层：（环氧或聚氨酯）应干燥且无任何污物，必要时表面应充分拉毛  |
| 状况与温度            | <ul style="list-style-type: none"> <li>— 只要底材表面干燥，无水或冰，施工和固化温度允许最低至-5℃</li> <li>— 底材温度至少高于露点 3℃</li> <li>— 施工及涂层固化期间最大相对湿度为 85%</li> <li>— 涂层过早接触雨水或表面结露，可能会导致颜色和光泽差异</li> </ul> |
| 使用说明             | 混合体积比      基料：固化剂 = 91：9<br><ul style="list-style-type: none"> <li>— 按要求适量添加溶剂，不宜过度稀释</li> <li>— 过量稀释会导致抗流挂性能降低与固化速度减慢</li> <li>— 稀释剂应在组份混合后加</li> </ul>                         |



**SIGMADUR 2800**  
**氟碳漆 2800**

熟化时间 无

混合后使用期 (20℃) 5 小时 摄氏 20℃时

**无气喷涂**

推荐稀释剂 稀释剂 2800  
 稀释剂体积比 0-5%，根据所需膜厚及施工条件  
 喷嘴孔径 约 0.28-0.38 毫米 (0.011-0.015 英寸)  
 喷出压力 20 兆帕 (约 200 大气压或 2800 磅/英寸<sup>2</sup>)

**有气喷涂**

推荐稀释剂 稀释剂 2800  
 稀释剂体积比 10-15%，根据所需膜厚及施工条件  
 喷嘴孔径 1-1.5 毫米  
 喷出压力 0.3-0.4 兆帕 (约 3-4 大气压或 43-57 磅/英寸<sup>2</sup>)

**刷涂/辊涂**

推荐稀释剂 稀释剂 2800  
 稀释剂体积比 0-5%

工具清洗 稀释剂 2800

安全防范 涂料及推荐的稀释剂见安全表 1430, 1431 和相关材料的安全数据

这是溶剂型涂料，必须避免吸入漆雾和溶剂，并尽量不使皮肤和眼睛暴露，避免接触到未干的油漆

- 含有毒性的聚异氰酸酯固化剂
- 避免吸入漆雾

**附录**

**膜厚与涂布率**

|                           |      |      |      |
|---------------------------|------|------|------|
| 理论涂布率 (米 <sup>2</sup> /升) | 18.7 | 16.0 | 14.0 |
| 干膜厚度 (微米)                 | 30   | 35   | 40   |





## SIGMADUR 2800 氟碳漆 2800

### 覆涂间隔时间表

涂覆在 SigmaDur2800 氟碳漆

|            |     |     |     |
|------------|-----|-----|-----|
| 底材温度       | 5℃  | 20℃ | 40℃ |
| 最小间隔时间(小时) | 36  | 20  | 3   |
| 最大间隔时间     | 无限制 |     |     |

### 固化时间表

— 表面应干燥且无任何污物  
 (35 微米膜厚)

| 底材温度 | 指干(小时) | 硬干(小时) |
|------|--------|--------|
| 5℃   | 24     | 36     |
| 20℃  | 3      | 20     |
| 40℃  | 0.5    | 3      |

— 涂装施工及涂层固化过程中必须维持足够量的持续通风(参阅表 1433 和 1434)

### 混合后使用期

(处于施工粘度时)

|     |      |
|-----|------|
| 10℃ | 8 小时 |
| 20℃ | 5 小时 |
| 40℃ | 1 小时 |

### 全球适用性

PPG 船舶及工业防护涂料公司恪守在全世界范围内提供相同产品的宗旨, 但有时因必须遵循所在国和当地法规/实情, 也有可能对产品稍作调整, 在此情景下, 需要参阅相应版本的产品说明书。

### 参 考

|             |           |
|-------------|-----------|
| 产品数据说明      | 请参阅表 1411 |
| 安全指导        | 请参阅表 1430 |
| 密闭场所安全和健康安全 |           |
| 爆炸危害 - 毒品危害 | 请参阅表 1431 |
| 密闭舱室内的安全工作  | 请参阅表 1433 |
| 通风技术指导      | 请参阅表 1434 |





## SIGMADUR 2800 氟碳漆 2800

### 责任范围

本产品说明书所提供的信息，均确信为我们实验室检测所得的精确数据，仅供参考指导之用。PPG 船舶及工业防护涂料公司竭尽所知地提供了在使用式玛涂料产品时所需的建议和意见，不论是技术文件，还是应答具体的技术咨询，或者是其它方式。我们的产品和相关信息是专为那些具备了必要知识和专业技能的用户而提供的，故此他们作为产品的终端客户将负责判定我们的产品是否符合其预期用途。

PPG 船舶及工业防护涂料公司通常无法控制所需涂装底材的质量或状态，以及会影响涂装施工和涂层使用的众多因素。据此，PPG 船舶及工业防护涂料公司将不会对使用该产品或相关产品说明书所造成的损失、伤害或破坏承担责任（除非另有书面协议）。

在此提供的数据可能会依据实际使用的经验和产品的后续改进而作更新。

本产品说明书将取代和废止以前的旧版本。因此，用户在使用本产品前将有责任确认所用产品说明书应为最新版本的。

当对本文件出现中文译文和原版英文存在理解差异或异意时，应以英文为准。

产品说明书编号

