

COAT PC200

伊凡特防水斷熱塗料



Waterproof and thermo-shield paint

ENVIRCOAT[®]

New Technology and New Method for building

ENVIRCOAT[®]

伊 凡 特

Envircoat is Green





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About Envircoat Paint

Save the energy consumption and provide the long-term protection

Envircoat COAT PC200 is applicable to exterior roofs and walls as well as interior walls. With the irreplaceable innovative features, the power bill for interior air conditioners is reduced in a green way; moreover, the penetration of hazardous substances on exterior roofs and walls is prevented so as to extend the life of buildings.

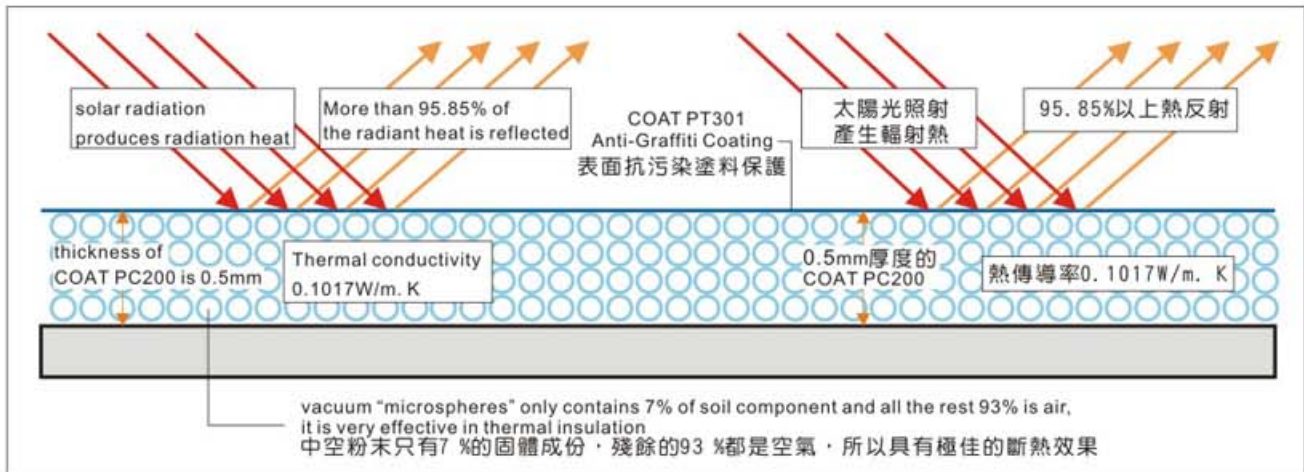
Since 1990, Envircoat COAT PC200 has been used widely to the application under the humid and hot sea-island climate, like Taiwan; thus, the demands on weather resistance and water resistance are stressed. Moreover, since 1992, it has been applied to the corporations like Carrefour and B&Q in Taiwan; afterwards, it is sold in overseas markets including Japan, China, Malaysia, Singapore and Hong Kong.

伊凡特防水斷熱塗料概述

節省能源的消耗與提供長時間的保護

伊凡特防水斷熱塗料COAT PC200是一種可施作於室外屋頂與牆面的塗料，也可以應用於室內牆面。伊凡特防水斷熱塗料COAT PC200具有無可取代的創新性質，不但可以採較為環保的方式幫助建築物節省室內空調的費用，更可以幫助建築物的屋頂及外牆阻擋有害物質的滲入，進而延長建築物的使用壽命。

伊凡特防水斷熱塗料COAT PC200自1990年起開始應用於台灣這種高溫多雨海島型氣候，所以特別注重於耐候性與耐水性的嚴苛要求。並於1992年開始陸續受到家樂福、特力屋…等企業的採用，並於2000年起開始行銷於日本、中國、馬來西亞、新加坡、香港…等海外市場。



Special technology of Envirocoat Paint

Envirocoat COAT PC200 differs from common thermo-shield ceramic coating in the markets for thermal insulation. The hollow particles in COAT PC200 swell in accordance with the temperature changes, so the coating will contain more air owing to the swelling particles under high temperature, which hinders the thermal conductivity and leads to the optimal thermal insulation. The preceding feature is unavailable from common ceramic coating. Besides, the hollow particle at 40 μm results in the optimal flexibility and elasticity; therefore, COAT PC200 also is equipped with the optimal flexibility and elasticity identical to the preceding particle.

Envirocoat COAT PC200 consists of the mixture of various kinds of water-based acrylic resin, so it is waterproof and weather resistant; moreover, due to the excellent adhesion to substrate, the direct application is available.

Besides, to maintain the optimal thermal reflection of radiation heat, COAT PT301 is developed as the anti-graffiti coating to render the self-cleaning capacity to COAT PC200; thus, it is a self-cleaning surface by spraying COAT PT301 to COAT PC200 surface. In addition to the optimal thermal reflectivity of radiation heat, the surface remains new as well.

伊凡特防水斷熱塗料的特殊技術

伊凡特防水斷熱塗料COAT PC200不同於一般市面上的陶瓷隔熱塗料，伊凡特防水斷熱塗料COAT PC200中所採用的中空粉末會隨著溫度升高而膨脹，也就是說，內含的中空粉末在愈高溫的場所，會因為中空粉末膨脹的關係，而使塗料中含有更多的空氣成分，讓熱源不容易傳遞下去，進而產生最佳的隔熱效果，此種特性是一般室面上的陶瓷隔熱塗料所無法做到的。此外，因為此種特殊中空粉末僅有40微米，不但顆粒小質輕，並且具有極佳的柔軟度與彈性，所以生產製造出來的伊凡特防水斷熱塗料COAT PC200亦具有極佳的彈性與柔軟性。

伊凡特防水斷熱塗料COAT PC200由數種不同的水性丙烯酸樹脂所精製混合而成，不但具有優越的防水性能與耐候特性外，對於底材的接著性更是卓越，在施作時可以不需要任何底漆就可以直接施作。

此外，為了維持COAT PC200表面最佳的輻射熱的反射效果，我們更開發了COAT PT301的特殊表面抗污塗料，讓COAT PC200表面在噴塗COAT PT301之後，表面能夠有自潔效果。除了對於輻射熱的反射維持最佳的狀態外，對於COAT PC200表面也常保如新。



圖片中右半部的COAT PC200表面經過COAT PT301處理，三年之後仍常保如新
After three years, the COAT PC200 surface with COAT PT301 on the right side remains clean.



Envircoat Paint protects your residence, health and money

Thermal insulation maintains the consistent indoor temperature; therefore, Envircoat COAT PC200 makes the indoor temperature agreeable and reduces the power bill for air conditioners. The waterproofing protects your residence from the invasion of rainwater leading to water leakage or exposed steel reinforcing.

Envircoat Paint is environmentally friendly

Envircoat COAT PC200 is proven to be with no defects of cancer risk and pollution owned by solvent based coating and conforms to the standards demanded by the environmental protection including the contents of formaldehyde, volatile organic compound and heavy metals (listed in the test reports). In the production process, the energy consumption is less. Thermal insulation reduces the energy consumed by air conditioners. Thus, the objective of carbon dioxide reduction is achieved.

Envircoat Paint is high-quality coating

Envircoat COAT PC 200 has been certified since the first marketing in 1990. The constant technical development and improved products render the conformity to the requirements demanded by the diverse environments worldwide. Moreover, a 10-year quality warranty of endurance for Envircoat COAT PC200 is available to express our confidence.



伊凡特防水斷熱塗料守護您的住宅、健康與錢包

伊凡特防水斷熱塗料COAT PC200中的斷熱效果，讓您住宅內的室溫能夠輕易的維持，不但使室內更加舒適，也幫您省下大筆的空調費用。其防水效果能讓您的建築物不會因雨水的侵害而造成建築物漏水或鋼筋裸露等問題，同時守護著您的住宅。

伊凡特防水斷熱塗料是符合環保的

伊凡特防水斷熱塗料COAT PC200經由研究報告證明，此種水性塗料不但沒有溶劑型塗料致癌風險與環境汙染的缺點，其甲醛、有機氣體揮發量與重金屬含量都符合環保之標準（詳見相關檢測報告）。此外，伊凡特防水斷熱塗料COAT PC200生產過程中並不會耗費大量能源的消耗，而產品的隔熱效果更是大大節省空調能源的消耗，充分達到節能減碳之目標。

伊凡特防水斷熱塗料是高品質的塗料

伊凡特防水斷熱塗料COAT PC200自1990年銷售至今，已經經過長時間的考驗，在不斷的新技術開發與產品改良下，我們的產品更能符合世界各地不同環境的要求。對於伊凡特防水斷熱塗料COAT PC200，我們更是有信心的提出10年的耐久性的品質保證。

伊凡特產品系列

Envircoat Systems Product Range



1 COAT PC200 防水斷熱塗料 COAT PC200 Waterproof and thermo-shield paint

主要應用於建築物隔熱、防水及保溫。
顏色：白色、淺灰、淺綠、淺黃、粉紅、淺藍。
Apply to the thermal insulation and waterproof of buildings.
Colors:
white, light grey, light green, light yellow, pink, light blue

特性：

- 隔熱效果佳
- 耐水性能優異
- 超強黏結力
- 水性環保
- 良好柔韌性、抗衝擊、抗裂

 5加侖塑膠桶裝

Properties :

- Good thermal insulation
- Water resistant
- Good adhesion
- Water-based, environmental friendly
- Flexible, crack resistance

 5 gallons of plastic pail



2 COAT PT301 不回粘抗污保護塗料 COAT PT301 Non-stick anti-graffiti coating

主要應用於塗料表面抗污染之處理。
顏色：透明色。
Apply to anti-graffiti on coating surface.
Color: clear

特性：

- 疏水及疏油性
- 不回粘
- 超強黏結力
- 水性環保
- 良好柔韌性、抗衝擊

 5加侖塑膠桶裝

Properties :

- Hydrophobic and oleophobic
- Non-stick
- Good adhesion
- Water-based
- Flexible and outstanding impact

 5 gallons of plastic pail



3 PRIMER 4001 多功能強效底塗 PRIMER 4001 Dispersion Primer

主要應用於加強基材之穩固性與接著性。
顏色：乳白色。
Provides excellent adhesion when used as a bonding agent.
Color: milky white

特性：

- 無溶劑，環保型
- 防潮性佳
- 附著性極佳
- 減低基材吸收性

 5加侖塑膠桶裝

Properties :

- Solvent free
- Moisture-resistant
- Excellent adhesion
- Regulate absorbency

 5 gallons of plastic pail

伊凡特防水斷熱塗料的特點 Features of Envircoat Paint

1 隔熱

當白色的伊凡特防水斷熱塗料COAT PC200施作0.5至1mm的厚度之後，就可以達到95%以上的輻射熱反射效果，降低輻射熱所造成室內溫度的上升。

Heat insulation

The thickness of 0.5-1.0mm leads to 95% of thermal reflectivity of radiation heat, which reduces the indoor temperature rise resulting from radiation heat.

2 斷熱

防水斷熱塗料COAT PC200中具有特殊的中空粉末，使建築物牆面及屋頂的熱傳導率降低，讓建築物具有冬暖夏涼的保溫效果。

Thermal protection

The special hollow particle reduces the thermal conductivity on exterior walls and roofs of buildings and renders the indoor thermal consistence to buildings.

3 隔音

防水斷熱塗料COAT PC200塗覆在建築物表面，將降低4到10分貝的噪音，尤其對於雨水所帶給鐵皮屋的噪音，有著極佳的隔音效果。

Sound insulation

The coating on the surface of buildings may reduce 4-10 decibels of noise. The noise of raindrops falling on the roof of iron-sheet houses is insulated.

4 耐久

伊凡特防水斷熱塗料COAT PC200是由丙烯酸樹脂與特殊的中空粉末等原料混合而成，對於各種氣候都有極佳的耐候性。伊凡特防水斷熱塗料COAT PC200也提供10年耐久性的品質保證。

Durability

The mixture of acrylic resin and hollow particles renders the optimal weather resistance under all climates. Moreover, the 10-year quality warranty for endurance is available.

5 抗污

防水斷熱塗料COAT PC200搭配COAT PT301施作後，就可以讓塗料表面有極佳的自潔效果，讓塗料表面不易沾附粉塵，常保如新。

Anti-graffiti

The self-cleaning surface via the COAT PT301 coating on COAT PC200 surface prevents the surface from dust pollution, so the surface of thermo-shield paint remains new.

6 防水

伊凡特防水斷熱塗料COAT PC200施作在屋頂或外牆，即可達到極佳的防水效果，防水效果可媲美於專業的防水塗料。

Waterproofing

The optimal waterproof effect by applying COAT PC200 to exterior roofs or walls equals to the professional waterproof coating.

7 預防結露

伊凡特防水斷熱塗料COAT PC200可以有效的反射紅外線，阻止熱能的傳遞，以降低因為溫差過大而產生的結露問題。

Dew-proofing

The effective reflection of infrared rays prevents the thermal conductivity and reduces the temperature difference, so it prevents dewing.



8 安全

伊凡特防水斷熱塗料COAT PC200為環保水性塗料，其甲醛、有害重金屬與有機揮發氣體含量均符合環保標準。

Safety

As a green water-based coating, the contents of formaldehyde, hazardous heavy metals and volatile organic compound conform to the standards of environmental protection.

9 節能

阻斷熱源的進入，也防止熱源的逸散。因而降低冷氣房與暖氣房的空調費用。

Energy saving

The thermal penetration and thermal emission prevented reduces the cost for air conditioners.

10 施工性

在垂直面施作時不易垂流，可以採噴塗、滾塗與刷塗的方式施作。並可依照不同的施工條件來添加少量的清水

Workability

It is not difficult to apply COAT PC200 on vertical wall and it is easy to apply COAT PC200 by sprayer, roller and brush. Also, little clean water may be added in accordance with diverse applying conditions.

11 彈性

塗膜具有極佳之彈性，不易龜裂。不會因表面受到衝擊或建築物的震動而出現裂痕。

Elasticity

The optimal elasticity with crack resistance prevents coating surface cracks occurring from the exterior impact or vibration of buildings.

12 透氣性

伊凡特防水斷熱塗料COAT PC200具透氣不透水之特性。讓比水分子更小的水蒸氣分子氣體分子能穿過塗料，維持室內的舒適性。

Water Vapor Transmission

The water vapor can penetrate the COAT PC200 coating but the water can not permeate through the COAT PC200 coating. Thus the interior room is comfort.

13 燙傷防止

伊凡特防水斷熱塗料COAT PC200塗刷過的表面具斷熱效果，可以避免不小心觸碰到高溫的表面所造成的燙傷。

Burn prevention

The exterior thermal insulation prevents the burn arising from touching the hot surface.

14 附著性

伊凡特防水斷熱塗料COAT PC200具有極佳的附著性，對於大部分的底材均能附著，而且不需要預先施作底漆，就可以直接施作。

Adhesion

Due to the optimal adhesion, the direct application is available since COAT PC200 adheres to most substrate without primer.

伊凡特系列產品相關檢測 Test of Envirocoat Systems Product

伊凡特COAT PC200防水斷熱塗料

Envirocoat COAT PC200 Waterproof and thermo-shield paint

試驗項目 Test item	試驗方法 Test method	試驗結果 Test result
水蒸氣穿透率 Penetration rate of water vapor	ASTM E96	40.89 g/m ² /24hrs
抗拉強度 Tensile strength	ASTM D412	27 kgf/cm ²
伸長率 Elongation rate	ASTM D412	62%
附著性試驗(間隔1mm) Adhesion	ASTM D3359	無任何剝落現象 No peeling off
熱反射率 Solar reflectivity	Spectral Plot	95.85%
熱傳導率 Thermal conductivity	ASTM C518	0.1017W/m.k
耐酸性(5%硫酸168小時) Acid resistance (5% H ₂ SO ₄ /168hrs)	JIS K5600	無異狀 Unaffected
耐鹼性(5%氫氧化鈉168小時) Alkali resistance (5% NaOH /168hrs)	JIS K5600	無起泡、龜裂之現象 No cracking and blistering
耐鹽水性(5%氯化鈉168小時) Salt Water resistance (5% NaCl /168hrs)	JIS K5600	無異狀 Unaffected
甲醛(福馬林) Formaldehyde	CNS 9538	31.1ppm (符合環保標準) (Pass requirement)
VOC揮發性有機化合物 VOC content	ASTM D3960	38 g/L (符合環保標準) (Pass requirement)
重金屬含量 Heavy metal content	ASTM F963	符合美國幼兒玩具標準 Pass requirement

伊凡特COAT PT301不回粘抗污保護塗料

Envirocoat COAT PT301 Non-stick anti-graffiti coating

試驗項目 Test item	試驗方法 Test method	試驗結果 Test result
抗污染性(潤滑油168小時) Stain resistance (Lubricating Oil /168hrs)	JIS K5400	無異狀 Unaffected
甲醛(福馬林) Formaldehyde	CNS 9538	36.41ppm (符合環保標準) (Pass requirement)
重金屬含量 Heavy metal content	ASTM F963	符合美國幼兒玩具標準 Pass requirement

伊凡特PRIMER 4001 多功能強效底塗

Envircoat PRIMER 4001 Dispersion Primer

試驗項目 Test item	試驗方法 Test method	試驗結果 Test result
抗彎強度 Flexural strength	CNS 10639	79.1 kgf/cm ²
抗壓強度 Compressive strength	CNS 10639	241.9 kgf/cm ²
接著強度 Bond strength	CNS 10639	17.3 kgf/cm ²
吸水率 Absorption	CNS 10639	4.85%

註：以上實驗配比(重量比)=波特蘭水泥：砂(標準砂)：水：PRIMER 4001=100：300：43：25。測試期齡28天。

NOTE：The mixing ratio of above experiment(based weight)=
Portland cement：Sand(Graded standard sand)：Water：PRIMER 4001=100：300：43：25。
Test age：28 days

保溫性能試驗

Test of thermal protection

因為伊凡特防水斷熱塗料COAT PC200具有極佳的保溫與斷熱特性，所以可以大大減低溫度的傳遞，減少溫度逸散的問題。一般多應用於空調相關設備、冷熱水管，以及建築物的室內牆壁...等區域。
由以下左邊的圖片中顯示出，塗有伊凡特防水斷熱塗料COAT PC200有較佳的保溫效果。

The optimal thermal protection and insulation reduces the thermal conductivity and thus lessens thermal diffusion. Envircoat COAT PC200 is applied to air-conditioning facilities, hot and cold pipes and interior walls of buildings. The bottom left picture indicates the better optimal protection of the coating with Envircoat COAT PC200.

試驗方式

冰水裝入鋼杯後，分別觀察鋼杯外壁溫度之變化。試驗環境：室溫20°C，相對溼度80%，鋼杯內水溫5°C。

Test method

The temperature changes were observed on the outside of steel cup. Test circumstance：Room temperature at 20°C, 80% relative humidity and the water temperature of inside steel cup is 5°C.

試驗結果

經由上述的試驗，我們可以觀察到，沒有塗抹隔熱塗料的鋼杯外壁溫度較低，因為杯內冰水的溫度完全傳遞到鋼杯外壁。塗有一般隔熱塗料的鋼杯，經量測後，鋼杯外壁溫度稍高。而塗有伊凡特防水斷熱塗料COAT PC200在鋼杯外壁溫度顯現的溫度是最高的。這表示伊凡特防水斷熱塗料COAT PC200幫助減少冰水的溫度的喪失。

Test result

According to the observation, the temperature of the exterior surface of steep cup without coating was lower due to the temperature conductivity of ice water in the cup. The temperature of the exterior surface of steep cup with common thermal insulation coating was higher than the preceding one. However, temperature of the exterior surface of steep cup with coating of COAT PC200 was highest. That indicates COAT PC200 will help to reduce to the temperature conductivity of ice water.



塗覆COAT PC200，鋼杯外側溫度10.1°C
Apply COAT PC200 coating. The temperature of outside steel cup is 10.1°C



塗覆一般隔熱塗料，鋼杯外側溫度9.3°C
Apply common thermal insulation coating. The temperature of outside steel cup is 9.3°C



沒有塗覆隔熱塗料，鋼杯外側溫度8.4°C
Without any coating, the temperature of outside steel cup is 8.4°C

防止燙傷性能試驗

Test of burn prevention

因為伊凡特防水斷熱塗料COAT PC200具有極佳的斷熱特性，所以可以施作於需要防止燙傷的區域。一般多應用於熱水管、油管、鍋爐...等設備或區域。

Due to the excellent thermal insulation, COAT PC200 is applicable to the areas in need of burn prevention. The common application includes the areas or facilities of hot pipes, oil pipes and boilers.

試驗方式

將鐵片部分區域塗抹上伊凡特防水斷熱塗料COAT PC200，在塗料乾燥後，再以高溫火焰持續加溫於未施作之區域。



Test method

COAT PC200 was applied to a part of the iron plate. The flame kept heating the residual area after the coating dried.

試驗結果

經由上述的試驗，我們可以觀察到，儘管在鐵片上持續的加溫，甚至加溫至鐵片轉為紅色，仍然可以握住塗有伊凡特防水斷熱塗料COAT PC200部分，而不會有任何燙傷的問題。

Test result

The constant heating made the iron plate red. The coating prevented the burn because the plate was held by hand.

防水性能試驗

Test of waterproofing

伊凡特防水斷熱塗料COAT PC200不但具有極佳的隔熱特性，應用於建築物時，更可以表現出其極佳的防水特性。一般可應用於建築物屋頂防水加強、建築物的外牆防水，以及鐵皮屋表面鏽蝕的防止。

In addition to the excellent thermal insulation, COAT PC200 is also equipped with the optimal waterproofing in the application to buildings. The common application includes enhancing waterproofing of exterior roofs, exterior wall waterproofing and exterior anti-rust of iron-sheet houses.

試驗方式

將紙盒內部依標準施作量分別塗上伊凡特防水斷熱塗料COAT PC200與其他品牌的隔熱塗料，在塗料乾燥之後的厚度約為0.8mm，靜置三天之後，再裝清水於紙盒內，並觀察紙盒外部與底部是否有潮濕的狀況。

Test method

The coating of COAT PC200 and common thermal insulation coating was applied to the inner area of paper box under the applying standard.

The thickness was about 0.8mm. After 3 days, clean water was put inside to observe the humid condition of the exterior and bottom of paper box.

試驗結果

經過三天之後，塗有伊凡特防水斷熱塗料COAT PC200的紙盒外部仍保持乾燥，但是塗有其他廠牌隔熱塗料的紙盒，在紙盒底部已經略顯潮濕。在實驗持續三年之後，塗有伊凡特防水斷熱塗料COAT PC200的紙盒外部仍然保持乾燥，其他廠牌塗料之紙盒底部不但持續潮濕，甚至有黑色發霉狀況發生。

Test result

After three days, the exterior of the paper box with COAT PC200 remained dry whereas the other with common thermal insulation coating became wet. After three years, the exterior of the paper box with COAT PC200 remained dry whereas the other with common coating became wet and mildewed.



左方紙盒內部塗有COAT PC200，右方紙盒則塗有其他廠牌的隔熱塗料。在塗料塗刷三天後，分別盛裝清水。

The left paper box was coated by COAT PC200; the right one was coated by common thermal insulation coating. After three days, clean water was put inside.



在三年之後，左方紙盒塗有COAT PC200的紙盒外部仍保持乾燥，但是右方塗有其他廠牌隔熱塗料的紙盒底部與側面皆已經潮濕，甚至紙盒底部已經產生黑色的黴斑。

After three years, the left one remained dry; the bottom and sides of the right one became wet and the bottom mildewed.

施工實績 —— 隔熱之應用

Envircoat Project Reference —— Heat Insulation

施工時間：2005年6月
Time: June 2005

國家 Country：台灣 Taiwan

工程名稱 Project name：
台北市區勝利賣場
Shengli Mall in Taipei City

建築物型式 Pattern of building：
鐵皮屋賣場倉庫
Iron-sheet house

施作區域 Area：
鐵皮屋屋頂900m²
900m² of exterior roof



施作前狀況 Before application

施作前的賣場，屋頂已經裝有多個渦輪風扇。當夏天來臨時，空調倘若不開啟，室內溫度甚至高達43°C，為了維持賣場的舒適性，必須常常全面開啟多台空調運轉，因此電費十分驚人。在施作伊凡特防水斷熱塗料COAT PC200之前，所耗費的電費如下：

Several turbo fans had been installed under the roof. The room temperature in summers used to total 43°C without air conditioners. It was necessary to turn on all air conditioners to maintain the comfort of the mall which resulted in the vast power bill. The power bill before the application of COAT PC200 is as follows:

月份 Month	2004							2005					合計 Total
	6月 Jun.	7月 Jul.	8月 Aug.	9月 Sep.	10月 Oct.	11月 Nov.	12月 Dec.	1月 Jan.	2月 Feb.	3月 Mar.	4月 Apr.	5月 May	
電費(元) Power bill (NTD)	52437		74569		71416		48532		49047		51065		347066

台灣的電費計算方式為兩個月計算收費一次
The power bill in Taiwan is charged bimonthly.

施作後狀況 After application

施作後的賣場，在夏天來臨時，白天開啟空調的時間可以延後約半小時至一小時，空調也不必全面開啟就蠻涼爽，冬天也較為溫暖一些，也不用擔心鐵皮屋表面鏽蝕的問題。在施作伊凡特防水斷熱塗料COAT PC200之後，所耗費的電費如下：

The time to turn on air conditioners in the mall with COAT PC200 may be delayed 0.5-1 hour in summers with partial air conditioners. Moreover, it is warmer in winters. It is needless to get concerned for the exterior rust of roof. The power bill after the application of COAT PC200 is as follows:

月份 Month	2005							2006					合計 Total
	6月 Jun.	7月 Jul.	8月 Aug.	9月 Sep.	10月 Oct.	11月 Nov.	12月 Dec.	1月 Jan.	2月 Feb.	3月 Mar.	4月 Apr.	5月 May	
電費(元) Power bill (NTD)	28968		33558		32985		30241		32517		29219		187488

台灣的電費計算方式為兩個月計算收費一次
The power bill in Taiwan is charged bimonthly.

電費節省狀況 Reduced power bill

經過一年後節省的電費如下：
The power bill in a year is as follows:
347066-187488=159578

電費節省的比率高達 $159578 \div 347066 = 45.98\%$
The reduced power ratio totals $159578 \div 347066 = 45.98\%$

因為電費支出包含空調、照明、電腦、其他電器...等等，所以若單是計算空調節省的電費，應於50%以上。
Since the power bill includes air conditioners, lightening, computer sets and other electric appliances, the power bill reduced by the air conditioners shall exceed 50%.

施工實績 —— 隔熱之應用

Envirocoat Project Reference —— Heat Insulation

施工時間：2003年6月
Time: June 2003

國家 Country：
馬來西亞 Malaysia

工程名稱 Project name：
吉隆坡農業大學
Kuala Lumpur Agricultural University

建築物型式 Pattern of building：
鐵皮屋型式之建築物 Iron-sheet house

施作區域 Area：
鐵皮屋屋頂共1800m²
1,800m² of exterior roof



塗料施作前後教室溫度差異之比較

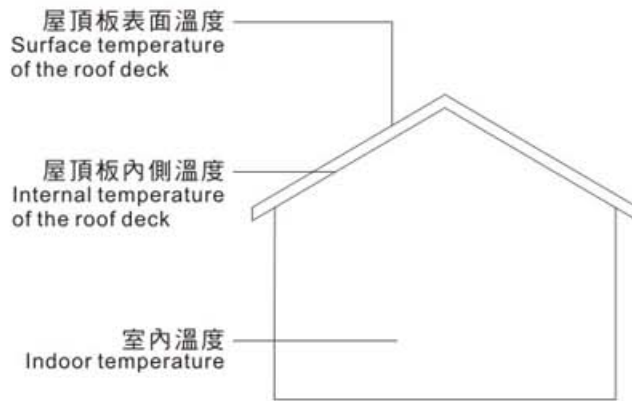
Comparison of interior temperatures before and after application of coating

在中午12時，記錄施作COAT PC200前後的屋頂板表面溫度、屋頂板內側溫度與室內溫度

At 12 o'clock, record the surface temperature of the roof deck, internal temperature of the roof deck and the indoor temperature after application of COAT PC200



未施作COAT PC200前，屋頂板表面溫度
Surface temperature of the roof deck before application of COAT PC200

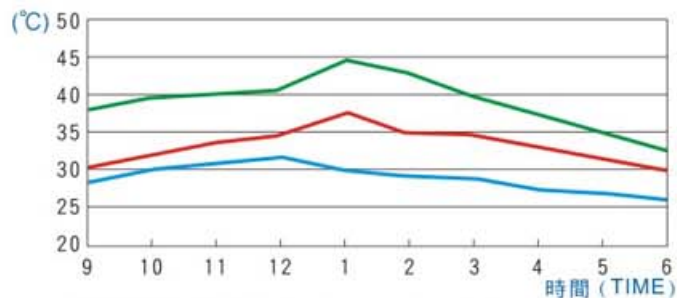


施作COAT PC200後，屋頂板表面溫度
Surface temperature of the roof deck after application of COAT PC200

	施作塗料前 Before applying	施作塗料後 After applying
屋頂板表面溫度 Surface temperature of the roof deck	60°C	40°C
屋頂板內側溫度 Internal temperature of the roof deck	59°C	38°C
室內溫度 Indoor temperature	40°C	32°C



施作COAT PC200後的室內溫度
Indoor temperature after application of COAT PC200



施作塗料後之室溫 Indoor temperature before construction —
施作塗料前之室溫 Indoor temperature after construction —
室外溫度 Outdoor temperature —

施工實績 —— 隔熱之應用

Envircoat Project Reference —— Heat Insulation

施工時間：2007年5月
Time: May 2007

國家 Country：
台灣 Taiwan

工程名稱 Project name：
台中市區恆薇設計公司
Hengwei Design company in Taichung City

建築物型式 Pattern of building：
七層樓混凝土建築
7-floor concrete building

施作區域 Area：
屋頂240m²
240m² of exterior roof



■ 施作前狀況 Before application

施作前，屋頂表面溫度高達50°C（詳見右圖），為了讓設計公司的從業人員能舒適工作，必須整天開啟空調，尤其在六月至九月之間，因為白天混凝土吸熱與蓄熱的關係，所以晚上的加班時間也要繼續將空調打開降低室溫，因此夏天電費十分驚人。

The roof temperature before application totaled 50°C (see the right picture). It was necessary to turn on air conditioners all day to let the employees in the design company work comfortably. In June-September, the thermal absorption and thermal storage of concrete in daytime made it essential to turn on air conditioners for overtime nighttime work; therefore, the power bill in summers was vast.



■ 施作後狀況 After application

施作後，屋頂表面溫度降至37°C（詳見右圖），室內溫度也大大降低。早上十點之前甚至可以不開啟空調，只開啟電風扇來降低室溫。夜間也不再悶熱，開啟風扇就能有涼爽的感覺。

The roof temperature was lowered to 37°C (see the right picture) and the interior temperature was lower as well. It is unnecessary to turn on air conditioners before 10:00 a.m. since the fans are applicable to the room temperature reduction. Moreover, the nighttime is cool, so the fans are enough for overtime nighttime work.



■ 電費節省狀況 Reduced power bill

與去年同期電費比較如下(台灣的電費計算方式為兩個月計算收費一次)：

The comparison of power bills is as follows (the power bill in Taiwan is charged bimonthly):

		施作前(2006年) Before application (2006)	施作後(2007年) After application (2007)	省電比率 Reduced power ratio
6月 Jun.	使用電量(kwh) Power consumption (kwh)	3357	2651	節省21.0%電費 21.0% reduced
	使用電費(元) Power bill (NTD)	12555	9914	
8月 Aug.	使用電量(kwh) Power consumption (kwh)	3502	2673	節省23.6%電費 23.6% reduced
	使用電費(元) Power bill (NTD)	13097	9997	

施工實績 —— 保溫之應用

Envirocoat Project Reference —— Thermal Protection

施工時間：2001年12月
Time: December 2001

國家 Country：
台灣 Taiwan

工程名稱 Project name：
宜蘭縣黃公館
Residence of the Huang Family in Yilan County

建築物型式 Pattern of building：
獨棟透天水泥建築物
Independent concrete building

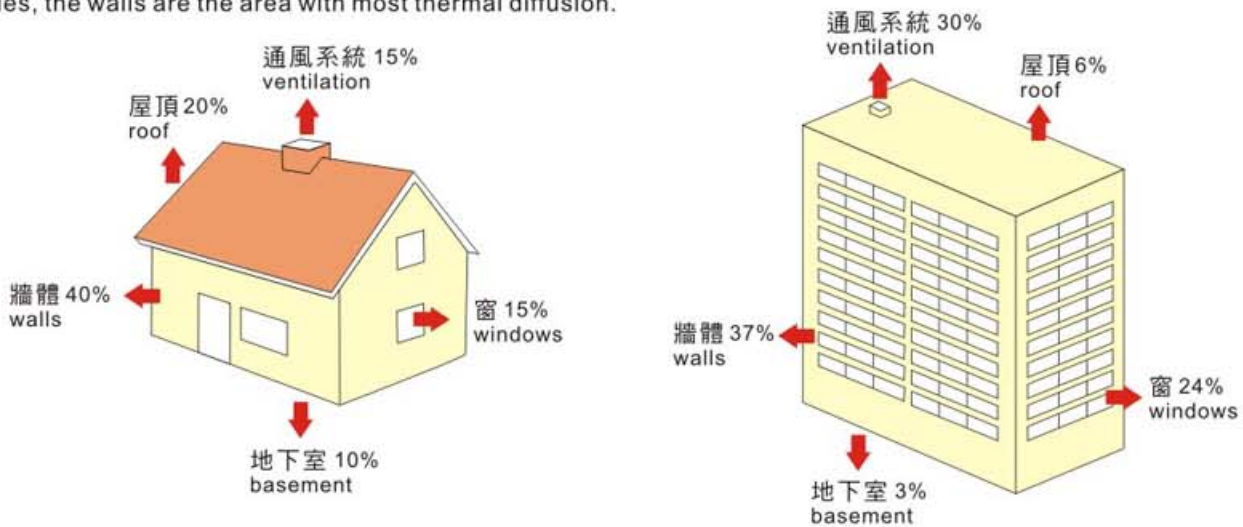
施作區域 Area：
內牆共820m²
820m² of interior walls



建築物熱源逸散分析 Analysis of thermal diffusion

依照建築物不同的型式，其熱源逸散的狀態就有所差異。不過，不論建築物的型式為何，牆面還是熱源逸散最為嚴重之區域。

The condition of thermal diffusion differs in accordance with architectural styles. However, regardless of architectural styles, the walls are the area with most thermal diffusion.



案例分析 Case analysis

在這個案例中，室內未塗刷伊凡特COAT PC200之前，冬天時熱源會不斷從牆壁逸散出來，橙黃色代表熱源損失(如下方左圖)。在室內塗刷伊凡特COAT PC200之後，熱源就會減少損失，大部份的熱源仍封閉在內部，所以呈現出藍色(如下方右圖)。大大節省冬天暖氣電費的花費。

Before application, the thermal source was diffused through walls in winters. The orange part indicates the thermal loss (the left picture). After application, most thermal source was sealed inside due to the reduced thermal diffusion, so the color is blue (the right picture). The power bill for air conditioning in winters is saved.



其它施作案例

Other Envircoat Project Reference

貨櫃屋隔熱之應用

Application to thermal insulation of container house

在炎炎夏日中，貨櫃屋內的溫度不斷上升，讓店家幾乎無法營業，只能靠空調不斷的開啟才能稍微改善，但是中午時分卻仍然炎熱。因為營業窗口的開啟與鐵皮的高吸熱性卻也造成空調逸散的問題。在施作伊凡特COAT PC200之後，貨櫃屋的溫度大大的降低，充分改善室內營業空間的舒適度。

In summers, the rising temperature made the container house intolerably hot. The hot air could be improved a little by air conditioners, but it was extremely hot at noon. Moreover, the open window and high thermal absorption of iron sheet leads to the diffusion of air conditioned. After application, the interior temperature was greatly lowered and the comfort of the interior space was improved fully.



貨櫃場操控室隔熱與隔音之應用

Application to thermal and sound insulation of control room in container field

由於貨櫃場的操控室是由鐵皮所搭建而成，當夏日來臨時，內部空間就十分悶熱，冬天也十分冰冷，人員無法有良好的工作環境，在施作伊凡特COAT PC200之後，工作環境改善很多。此外，下雨天來臨時，也降低雨水滴在鐵皮上所造成的噪音。



Since the control room in container field was built by iron sheet, it was hot and windless inside in summers and cold in winters. The employees failed to work in a good environment. After application, the working environment was improved much and the noise of raindrops falling on iron sheet was reduced.

浴池保溫之應用

Application to thermal protection of bathtubs

在日本民宅內的浴池先施作伊凡特COAT PC200，讓熱水溫度不易逸散過快，以達到保溫之效果。

Envircoat COAT PC200 applied to the bathing pool in a Japanese residence prevented the fast thermal diffusion of hot water and achieved the objective of thermal protection.



未施作伊凡特COAT PC200之前
Before application of COAT PC200



施作伊凡特COAT PC200完成之後
After application of COAT PC200



最後在伊凡特COAT PC200上施作防水塗料
Apply waterproofing coating on surface

其它施作案例

Other Envircoat Project Reference

瓦片屋頂隔熱之應用

Application to thermal insulation of roof tiles

在夏季時，具有瓦片屋頂的日式建築，常常都因為瓦片的高吸熱的特性，使得瓦片溫度高到發燙，因而使屋頂的溫度也隨之升高。我們可以先將瓦片全面移除，之後施作伊凡特COAT PC200，充分利用其斷熱之特性，將屋頂溫度降低，營造出一個舒適的室內空間。

Due to thermal adsorption of tiles, the roof tiles of Japanese houses in summers used to get extremely hot and hereby made the temperature of exterior roof rose as well. Thus, the tiles were removed first and then COAT PC200 was applied to the exterior roof. The thermal insulation



made the temperature of exterior roof lower than before and managed cozy interior living room.

貨車車頂隔熱之應用

Application to thermal insulation of roof of trucks

在夏季時，貨車常常因為金屬材質車頂的熱傳導係數偏高，造成發燙的車頂，讓駕駛人員有著悶熱的駕駛空間。在車頂塗刷施作伊凡特COAT PC200之後，車體內的駕駛空間不再炎熱，讓駕駛者能有更舒適的空間，達到更有安全的駕駛，不會因為天氣燥熱而影響駕駛者的心情。

In summers, the metal roof of trucks with high coefficient of thermal conductivity results in hot roof and hot and windless driving space.

After application, the driving space became cool. Comfortable

driving room prevents the driving risks arising from the troubled emotions caused by hot weather.



油槽隔熱與防鏽蝕之應用

Application to thermal insulation and rust prevention of oil reservoirs

在馬來西亞國營的油庫，我們從眾多廠牌的隔熱塗料中脫穎而出，經由當地國家單位的性能檢測下，伊凡特COAT PC200被證明是優於其他廠牌隔熱塗料。因此我們得以在國營油庫的油槽全面噴塗施作伊凡特COAT PC200，施作後的油槽不但有極佳的隔熱效果，也能預防金屬表面發生鏽蝕的問題。

The public oil reservoirs in Malaysia employed COAT PC200 for coating. The certification of capacities conducted by the local national organization verified the superiority of COAT PC200 among other thermal insulation coatings. Thus, the public oil reservoirs were coated by COAT PC200. After application, it leads to the optimal thermal insulation and prevents the rust on metal surface.



其它施作案例

Other Envircoat Project Reference

知名賣場屋頂隔熱之應用

Application to thermal insulation of exterior roof of famous marts

一般說來，賣場的空間十分寬廣，所以耗電量十分龐大，電費的花費也就非常高昂，藉由伊凡特COAT PC200可大大降低電費的花費。

The vast space of marts results in the high power bill due to vast power consumption. Envircoat COAT PC200 reduces the power bill greatly.



1996年，台灣中壢家樂福
Carrefour, Chungli, Taiwan, 1996



1999年，台灣內湖特力屋
B&Q, Neihu, Taiwan, 1999



2003年，台灣台南特力屋
B&Q, Tainan, Taiwan, 2003

鐵皮廠房隔熱與隔音之應用

Application to thermal and sound insulation of iron-sheet plants

當廠房施作伊凡特COAT PC200之後，不但能夠產生隔熱的效果，更能降低下雨滴落在鐵皮屋屋頂所造成的噪音。Envircoat COAT PC200 applied to iron-sheet plants results in thermal insulation and reduces the noise of raindrops falling on exterior roof.



2002年，馬來西亞白鯨牌飲水機工廠
White Whale Drinking, Malaysia, 2002



2002年，馬來西亞一品光學工廠
E-Pin Optical, Malaysia, 2002



2008年，台灣頻光半導體工廠
Semiconductor factory, Taiwan, 2008

如何施作伊凡特COAT PC200

How to apply COAT PC200



噴塗施作
以噴槍噴塗施作時，建議先以5~10%的水稀釋塗料後，再以無氣噴塗機進行噴塗，噴槍口徑建議1.1mm以上。

Sprayer

As for sprayer, it is advised to dilute COAT PC200 by 5-10% of clean water first, then spray it by an airless sprayer with bore diameter exceeding 1.1mm.



滾塗施作
以滾筒進行施作時，可視施作的需要，以5%以下的水稀釋塗料調整工作度。

Roller

As for roller, the workability is adjustable by diluting COAT PC200 with less than 5% of clean water in accordance with application demands



刷塗施作
可以5%以下的水稀釋塗料調整工作度，並可以綁上延長桿以方便施作。

Brush

The workability is adjustable by diluting COAT PC200 with less than 5% of clean water with an extensive rod for application.

當您有問題向我們諮詢時，我們將樂意提供幫助 Ask Us, We Will Be Glad to Help

本手冊為您提供了建築物隔熱技術方面的介紹，同時也為您介紹伊凡特系列的產品。如果您對於產品想要有更詳細的了解，請參考單項產品的技術資料。

對我們來說，與客戶面對面的交流仍然是獲得信息最重要的管道，因為這是我們滿足您特殊需求的為一方法，也因為對於特殊需求的解決方式，並不是在任何手冊中可以涵蓋提及的。我們的技術人員十分了解我們的產品與其性能，以及產品的加工過程和面對而來的要求。請與我們聯繫，我們將很願意為您提供幫助。



This brochure gives you an insight into the technical aspects of heat insulation and introduces you to the Envirocoat range of products. If you require a more detailed description of these products, please consult the corresponding data sheets.

For us, however, the most important information channel remains our personal contact with you, the customer. Because this is the only way we can address your particular needs. And because the tailored solutions we offer to specific problems are not covered by any single brochure. Our technical support staff know all about our products and their properties, but they also know about your production processes and the ensuing requirement. Call us. We will be only too pleased to help.





About TYE HAN

Tye Han Trading Co., Ltd. was founded in 1975 in Taipei, Taiwan as a company dedicated to the vision of becoming the industry leader in the manufacturer of a permanent, environmental safe, user friendly and economical waterproofing materials for the waterproofing business.

In 1995, Tye Han Trading continued expanding its operations to become a World-Wide leader in the technological field of advanced waterproofing, heat insulation and other products used within the construction trades. Tye Han Trading Co., Ltd. currently exports its products to other countries. Therefore, several professional chemical talents in the company continuously proceed research and study to materials in lab and develop various waterproof products. There are also MICSIL and ENVIRCOAT such brands developed and successfully sold to overseas market.

Tye Han Trading Co., Ltd. has over 30 years experience in the coatings industry. In 1993, Tye Han Trading Co., Ltd. has successfully introduced COAT PC200 across Taiwan as well as internationally.

關於台亨貿易

台亨貿易公司於1975年成立於台灣台北，從成立之初就不斷投身於開發具有耐久、環保，並且符合經濟效益的防水材料，並致力成為防水材料業界的專業生產廠商與領導者。

在1995年，台亨貿易公司持續擴展業務範圍，範圍擴及防水、隔熱與建築相關的建材，不但技術領先全球，並將產品輸出往其他國家。在實驗室專業人員持續不斷的研究下，開發出不少防水產品。創立了『MICSIL』與『Envircoat』的品牌，並成功行銷海外市場。

台亨貿易擁有卅年以上的塗料生產經驗，在2000年成功將COAT PC200由台灣推向於世界的舞台。

豐富您的建築色彩

Wide Array of Colour for Your Building

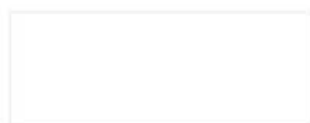
伊凡特防水斷熱塗料COAT PC200除了白色之外，目前尚有以下5種色彩可供選擇，假如您對顏色有特殊需求，我們可以接受特殊的訂製顏色(每種訂製色最少訂購量為150加侖)，以盡量符合您在色彩上的需求。不過，我們必須提醒您，假使您所需要的應用區域為室外的隔熱，因為白色具有最佳的輻射熱反射效果，所以白色的伊凡特防水斷熱塗料COAT PC200比起其他的顏色有著更佳的隔熱效果。而且淺色系的顏色隔熱效果要比深色系顏色的隔熱效果表現更佳。

In addition to the white color, the following 5 colors are also available.

Moreover, if there is any specific colour required, it may be customized as well (the minimal order: 150 gallons per specific colour). However, it is

necessary to remind you that the white color is the optimal option since the white color results in the best thermal reflectivity of radiation heat for exterior application. Thus, the white color of

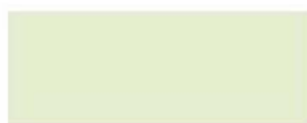
COAT PC200 leads to the optimal thermal insulation as compared to other colors. Moreover, thermal insulation of light colors is better than that of dark colors.



白色 CPC01
White



淺灰色 CPC02
Light grey



淺綠色 CPC03
Light green



淺黃色 CPC04
Light yellow



粉紅色 CPC05
Pink



淺藍色 CPC06
Light blue

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