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華夏高彈性防水膜

**FLEXIBLE PVC MEMBRANE**



台聚關係企業

華夏海灣塑膠股份有限公司  
China General Plastics Corporation



華夏海灣塑膠股份有限公司為台聚集團旗下十家子公司之一，向來以正派經營著稱，經轉化中國人「外圓內方」—「待人圓融，處世方正」的生活哲學概念，孕育出「篤實穩健、專業經營、追求卓越、服務社會」的經營理念，和「追求合理化、實事求是、精益求精、誠信明理、以和為貴、尊重與關懷」的企業文化特質。

- **篤實穩健** 凡事合理化，求真求時，在穩健中力求永續發展。
- **專業經營** 經營制度化、專業化、現代化、和科學化，產品高級化和差異區隔化。
- **追求卓越** 自我超越並勇於接受新挑戰，不斷改善以追求卓越的品質與經營績效，攜手厚植競爭力與優勢，並經由客戶滿意而贏得客戶信心。
- **服務社會** 取自社會，用於社會，善盡社會責任，做受信賴、被認同、貢獻高的企業公民。

CGPC is one of ten sister company of USI Group which has been known for being upright in our business operation. We draw from the living philosophy of the Chinese "Round outside and square inside", which means "Harmonious with people and proper in business dealings", and develop our own business philosophy of "Solid Operation, Professional Management, Seeking Excellence and Serving Society" and our corporate culture of "Being Rational, Practical, Constantly Improving, Sincere, Congenial, Respectful and Caring."

- **Solid Operation** We seek rationalization, truth and sustainable development through steadfastness.
- **Professional Management** We take systematic, professional, up-to-date and scientific approaches in management, and focus on product upgrade and differentiation.
- **Seeking Excellence** We endeavor to surpass ourselves and are ready for embracing new challenges; to constantly improve to excel in quality and business performance, to enhance core competency and to win customer confidence through their satisfaction.
- **Serving Society** We believe in giving back to the society and being a trustworthy, recognized and contributing corporate citizen.

## 產品物性 Physical Properties

| 項 目<br>Property |   | 檢測方法<br>Standard | 基 準<br>Specified Value           |
|-----------------|---|------------------|----------------------------------|
| 1               | 厚 度<br>Thickness  | DIN 53370        | 2.0mm                            |
| 2               | 抗拉強度<br>Tensile Strength  | DIN 53455        | 15 N/mm <sup>2</sup> min<br>以上   |
| 3               | 伸長率<br>Elongation at break  | DIN 53455        | 250% min<br>以上                   |
| 4               | 壓縮強度 (20%)<br>Compressive strength at 20% strain                          | DIN 53454        | 2.5 N/mm <sup>2</sup> min<br>以上  |
| 5               | 撕裂強度<br>Tear propagation strength   | DIN 53363        | 100N/mm min<br>以上                |
| 6               | 水壓試驗 (10 bar/10hrs)<br>Resistance under water pressure                    | DIN 16726        | 不漏水<br>No leakage                |
| 7               | 接縫強度<br>Tensile strength of welded seam                                   | DIN 16726        | 13.5 N/mm <sup>2</sup> min<br>以上 |
| 8               | 尺度穩定性<br>Dimensional stability (80°C/6hrs)                                | DIN 16726        | ± 2 % max<br>以內                  |
| 9               | 吸水率<br>Water absorption (23°C/24hrs )                                     | DIN 53495        | 1 % max<br>以內                    |
| 10              | 耐藥品性<br>Resistance against acid and alkaline<br>solutions (23°C/90 days ) | DIN 16726        | ± 2 % max<br>以內                  |
| 11              | 耐燃燒性<br>Behavior in fire  | DIN 4102/1       | 不易燃燒<br>Low combustibility       |



## 產品物性 Physical Properties

| 項目<br>Property  | 檢測方法<br>Test Method  | 單位<br>Unit                | 基準<br>Specified Value   |
|---|--|---------------------------|---|
| 1 厚度<br>Guage   | ASTM D1593   | mm                        | 2   |
| 2 抗拉強度<br>Tensile Strength  | ASTM D638  | N/mm <sup>2</sup>         | 14 以上<br>14 min.  |
| 3 延伸率<br>Elongation   | ASTM D638  | N                         | 225 以上<br>225 min.  |
| 4 接縫強度<br>Welded Seam Strength  | ASTM D638  | N/mm <sup>2</sup>         | 12.6 以上<br>12.6 min.  |
| 5 撕裂強度 (20%)<br>Tearing Strength  | ASTM D1004   | N/mm <sup>2</sup>         | 100 以上<br>100 min.  |
| 6 壓縮強度<br>Compressive Strength at 20% Strain  | ASTM D695  | N/mm <sup>2</sup>         | 2.5 以上<br>2.5 min.  |
| 7 穿刺強度<br>Puncture Resistance   | ASTM E154  | N                         | 小於 3500 不穿刺<br>no perforation below 3500  |
| 8 耐水壓<br>Hydrostatic Resistance   | ASTM D751<br>Method A  | 10bar/100hrs              | 不漏水<br>no leakage   |
| 9 低溫耐折性<br>Flexibility  | ASTM D146<br>ASTM F137   | ...                       | 無裂縫<br>no fissures  |
| 10 老化試驗<br>Aging Test<br>◆ 外觀<br>Appearance<br>(b) 尺寸變化<br>Dimensional Stability<br>(c) 抗拉強度變化率<br>Change of Tensile Strength<br>(d) 伸長量變化率<br>Change of Elongation<br>(e) 低溫耐折性<br>Low Temperature Folding | 烘箱 80°C/24 小時<br>Oven 80°C/24hrs<br>目視<br>Visual<br>微量尺量測<br>Micrometer<br>ASTM D638<br>ASTM D638<br>ASTM D638<br>ASTM F137<br>ASTM D146 | ...<br>%<br>%<br>%<br>... | 無起泡<br>no blister<br>1 以下<br>1 max.<br>5 以下<br>5 max.<br>10 以下<br>10 max.<br>-20°C 彎折 180° 無裂縫<br>bending 180° at -20°C no fissures |
| 11 耐水性 23±2°C 14 天<br>Behavior in Water 23±2°C 14 days<br>(a) 抗拉強度變化率<br>Change of Tensile Strength<br>(b) 伸長量變化率<br>Change of Elongation   | ASTM D638<br>ASTM D618   | %<br>%                    | 10 以下<br>10 max.<br>10 以下<br>10 max.  |

## 特性：

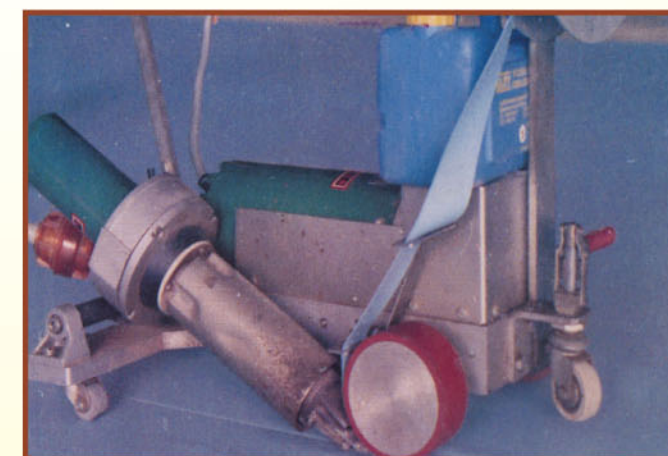
PVC 應用在防水膜材料的優異效果為全世界所公認的事實。在美國 1988 年度中以 PVC 為材料彈性防水膜就佔有 40 % 的市場，該佔有率遠大於各類材質產品的襯裡材料。PVC 防水膜是價格低廉又具多功能的聚合物產品，所以經常被指定使用在需要堅固、抗磨、抗化學性的地方。

### ◆ 耐候性

CGPC PVC MEMBRANES 具有抗紫外線輻射耐天候、潮濕的功能適合於外露及埋藏型施工。

### ◆ 耐高溫

任何 PVC 防水膜在高溫時會軟化，因為 PVC 防水膜是熱塑性的，但 CGPC PVC MEMBRANES 即使在 70°C 高溫和低應力狀況下，其使用壽命亦可達到預期之年限。



## Features :

The importance of PVC amongst membrane materials is illustrated by its worldwide acceptance as the workhorse material. In the United States, PVC enjoyed 40 % of the flexible membrane market in 1988 against competition from a variety of lining materials. Due to the polymers' versatility and competition cost, PVC membranes are specified and used in a variety of applications where toughness, abrasion resistance, chemical resistance and conformability are required.

### ◆ Weathering resistance

CGPC flexible membranes contain varying levels of U.V. radiation resistance, weathering resistance, damp resistance and temperature differential resistance, divided into exposed buried applications.

### ◆ High temperature resistance

PVC membranes will be soften at elevated temperature because PVC is a thermoplastics material, but even at temperatures up to 70°C, CGPC Duraflex can perform for long period under low stress conditions.





## 特性：

### ◆ 抗化學性

CGPC PVC MEMBRANES對抵抗流體的能力較大，更重要的一點是特別適合抗化學性能：

#### (i) 抗酸、鹼

稀酸、鹼在室溫下影響極微，但在高溫後會導致可塑劑的水解和萃取。濃酸、鹼在低溫情況下，可塑劑會慢慢水解，但加熱後其水解作用會加速。

#### (ii) 抗有機物

一般有機體和PVC的接觸作用會導致可塑劑被萃取，即硬化現象，但 CGPC PVC MEMBRANES僅會較不具彈性而已。

### ◆ 良好的三度空間延伸

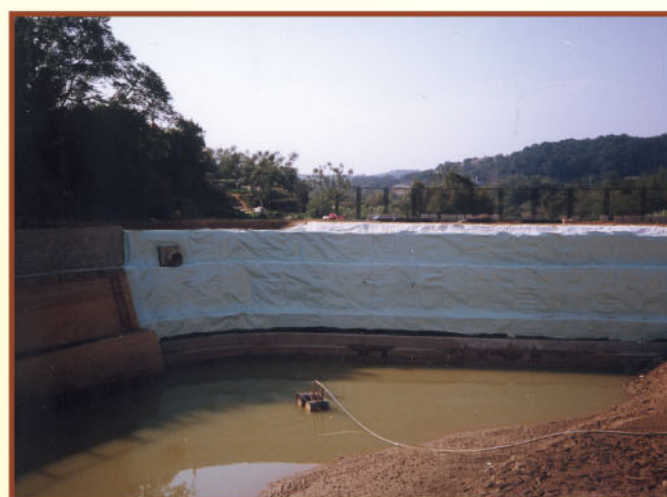
CGPC PVC MEMBRANES有明顯的三度空間延伸（三軸變形），所以防水膜系列，更具抗撕裂性及穿透性。

### ◆ 彈性特強

CGPC PVC MEMBRANES具有多孔的分子結構，使它具有良好的彈性，使其較能適應更大的鋪裝環境。

### ◆ 施工簡易、降低成本

本系列防水膜的規格齊全可依客戶所需的尺寸長度、顏色生產減少不必要的損耗，所以現場施工快速，可降低成本的開銷。



## Features :

### ◆ Chemical resistance

The general resistance of CGPC flexible membranes to a wide range of liquids makes them particularly suitable for membrane application where chemical resistance is of primary importance.

#### (i) Acids and alkalis

Dilute acids and alkalis have little effect at room temperature but at elevated temperatures some hydrolysis and extraction of plasticiser may occur.

#### (ii) Organic liquids

The main effect of organic liquids is to extract the plasticiser and this results in some hardening but most organic liquids will make CGPC flexible membranes less flexible only.

### ◆ Superior 3-Dimensional elongation

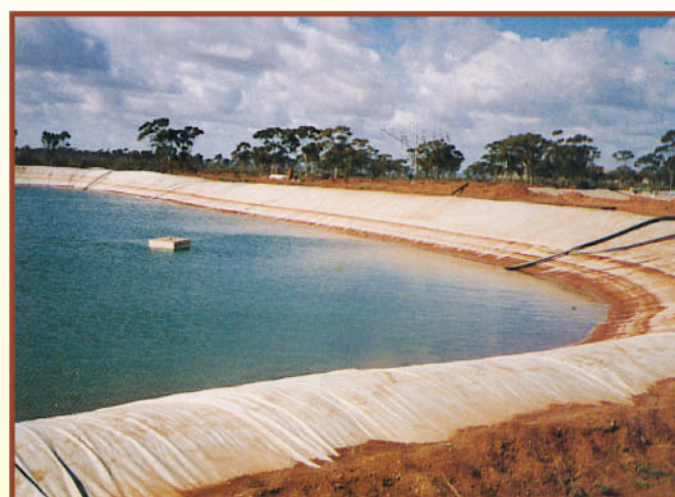
CGPC flexible membranes demonstrate significantly superior 3-dimensional Elongation (triaxial deformation). This makes them more resistant to puncture and impact damage.

### ◆ Good flexibility

CGPC flexible membranes have an amorphous molecular structure which gives them inherent flexibility. They have a modulus of elasticity and no yield point.

### ◆ Quick, low cost installation

CGPC flexible membranes can be manufactured in various formulations, thicknesses, lengths and colors to meet individual customer's requirements. This results in reduced jobsite installed wastage and quick, low cost installation.



## 產品規格：

|           |  |      |
|-----------|--|------|
| 警示層（雙色組成） |  | 膠布厚度 |
|           |  |      |

|    |          |
|----|----------|
| 厚度 | 1.2 ~3mm |
| 寬度 | 81~180cm |

註：特殊規格可依客戶需求議定。

## 產品用途：

- ◆ 隧道、地下室
- ◆ 捷運系統
- ◆ 人工蓄水湖
- ◆ 灌溉渠道
- ◆ 垃圾掩埋場



## Specification :

|                          |  |                 |
|--------------------------|--|-----------------|
| Signal layer for warning |  | Total Thickness |
|                          |  |                 |

|           |                 |
|-----------|-----------------|
| Thickness | 1.2~3mm         |
| Width     | 81~180cm (Max.) |

Remark: Specific specifications will be manufactured in conformance with customer's requirements.

## Applications :

- ◆ Tunnel and Underground Passage
- ◆ Mass Transit System
- ◆ Artificial Lake
- ◆ Irrigation Canal
- ◆ Garbage Burying Field

