



慶泰樹脂



ISO 14001



ISO 9001



國際田徑協會認證

國際網球協會認證

正字標記

環境管理認證

國家磐石獎

國際品質認證

台灣精品

國家品質獎

全天候PU彈性跑道鋪設材

海之道



HILEX TRACK

International Association
of Athletics Federations



榮獲國際田徑協會 (IAAF) 認證



傳統式跑道 Full-pour system



海力道-P[®]

■ 前言: Introduction

PU (POLYURETHANE)為高分子聚合物於 1950 ~1974 年問世，由於其優越之特性較其他塑膠原料之製品，更能因應現代田徑運動場之需要。

PU (POLYURETHANE) technology had been founded and developed between 1950s to 1974s. Since the PU material obtained with the high performance characteristic than other materials, it can satisfy with the modern running track and field's requirement.

■ 特性: Features

01. 耐候性、耐久性、耐磨性優越。
Top flood coat of polyurethane embedded with UV resistance EPDM or PU rubber granules can provide excellent UV and abrasion resistance, also has outstanding durability.
02. 接著力強，並具有優良之彈性及韌性。
Unique central layer can provided with an outstanding adhesion, flexibility and elasticity.
03. 耐油、耐溶劑、耐藥品、耐酸鹼性優良、無公害及汙染之顧慮，適合 -30℃ ~70℃ 範圍內使用，物質安定。
Excellent resistance to oil, solvent, chemical, acid and alkaline. Environmentally friendly. Performs well in temperature between -30℃ ~70℃.
04. 無接縫、施工簡單、保養容易。
Seamless, easy application and maintenance.
05. 全天候性：雨後即可使用。
All weather performance: can be used immediately after raining.

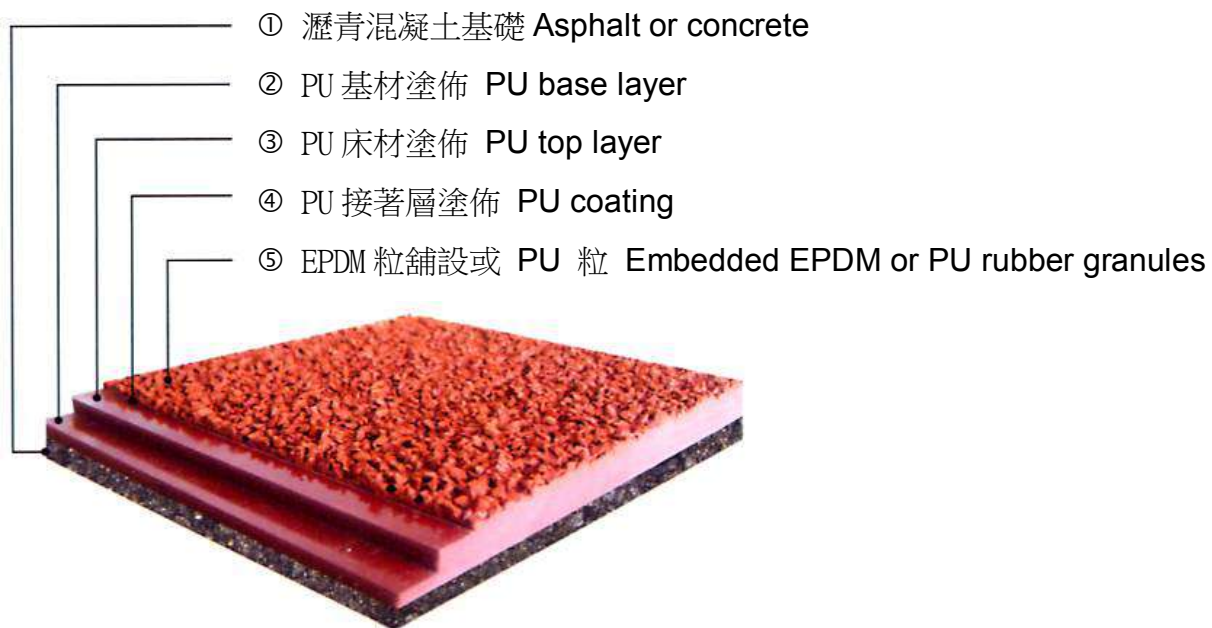


■ 適用範圍 (Usages) :

- 01. 運動場所：田徑跑道場。
Athletic field: Running track.
- 02. 遊樂場所：游泳池畔、高爾夫球走道、兒童樂園、幼稚園活動場地。
Recreational places: Swimming pool, golf course aisle, children's play ground and kindergarten etc.



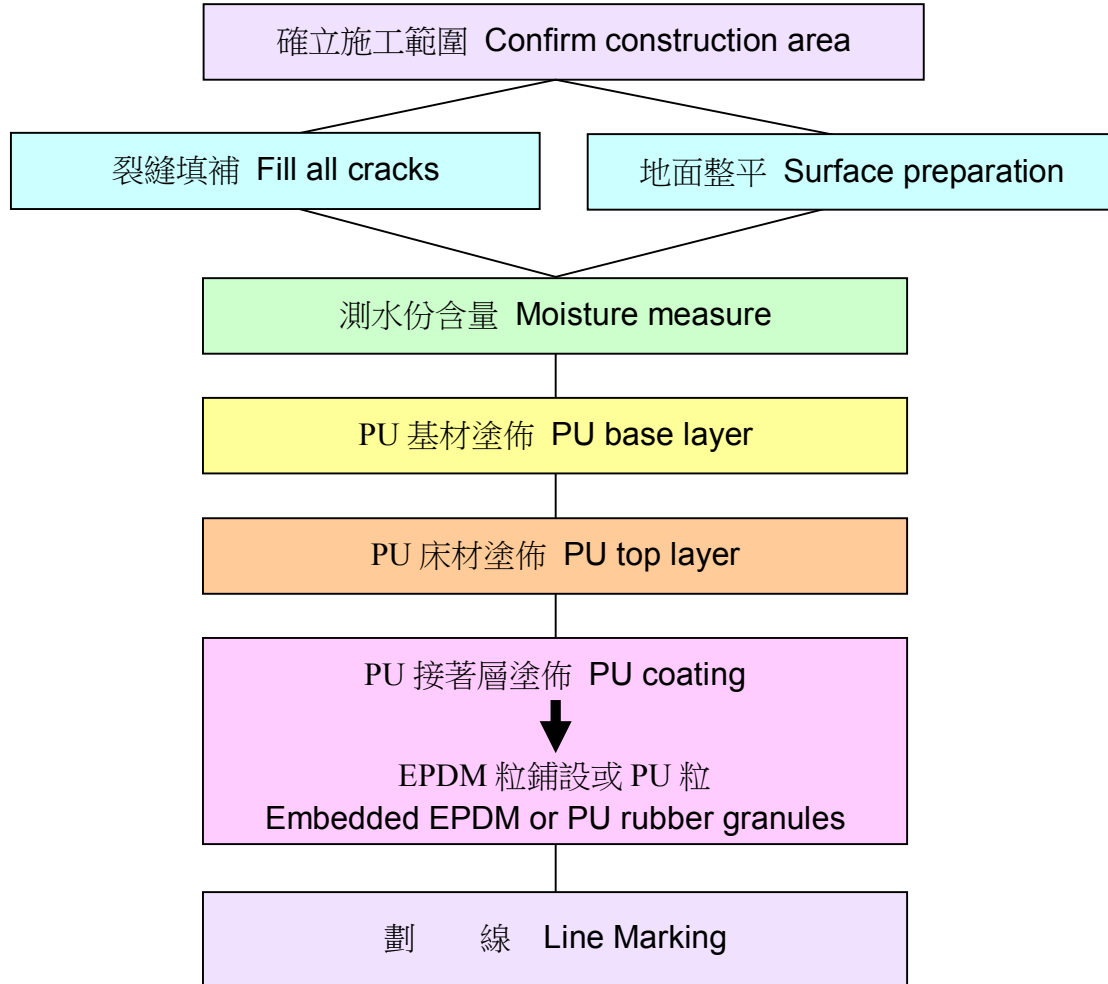
■ 施工剖面圖：Application profile





傳統式跑道 Full-pour system

■ 施工程序：Application



■ 物性分析 (Physical properties) :

項 目 Testing Items		規 格 Quality
(一)比 重 Specific gravity		標示值 ± 0.10 Marked value ± 0.10
(二)硬 度 (Hs) Hardness		45 ~ 65
(三)抗拉強度 (kgf/c m ²) Tensile strength		25 \uparrow
(四)伸 長 率 (%) Elongation %		250 \uparrow
(五)撕裂強度 (kgf / cm) Tear strength		10 \uparrow
(六)壓縮永久變形率 (%) Compressive set		35 \downarrow
(七)耐磨耗性 (g) Abrasion resistance		2.5 \downarrow
(八)彈 性 率(%) Elasticity		30 \uparrow
老 化 試 驗 (70°C) 168 小時 Aging test(70°C) 168 hrs	1. 硬度(Hs) Hardness	原硬度值之變化 ± 5 Hardness variation ± 5
	2. 抗拉強度保留率(kgf/ c m ²) Tensile strength retention rate	老化試驗前數值之 80~150% 80~150 % variation of original value
	3. 伸長率(%) Elongation	200 \uparrow
	4. 撕裂強度保留率(kgf / cm) Tear strength retention rate	老化試驗前數值之 80~150% 80~150% variation of original value



海力道-E

空隙式

空隙率
30%

■ 前言(Introduction)

海力道-E 空隙式運動場跑道，是源起自歐洲的完美複合彈性鋪設材料，以「容易跑」、「創記錄」的理念所開發的產品。它是應用多重彈性理論，設計成粒狀 NR + PU 樹脂結合而成的機層，並使它有 30% 的空隙，讓 NR + PU 的彈性，配合空隙間的彈性發揮，將這些彈性結合成複合彈性的效果。而面層的設計，則以 EPDM + PU 合成耐久彈性層，高性能的彈性面層，與較軟的彈性基層再結合，承受運動員的衝擊力廣泛吸收，再發揮彈力資助運動員創記錄，又不過份費力與勞累。因此海力道-E 空隙式運動場跑道可謂最適合運動員競賽的優良場地。



HILEX-E Sandwich System is originated from Europe. This product is applied with Multiple Elastic Theories. According to this theory, HILEX-E is an in-situ two layer sandwich system especially designed for elite running tracks. It composed of EPDM or PU rubber granules bound with a polyurethane binder and wearcoat of colored EPDM or PU granules cast into a premium polyurethane flood coat. It provides the flexible and resilient homogeneous surface. HILEX-E Sandwich system is suitable for athletic competition.



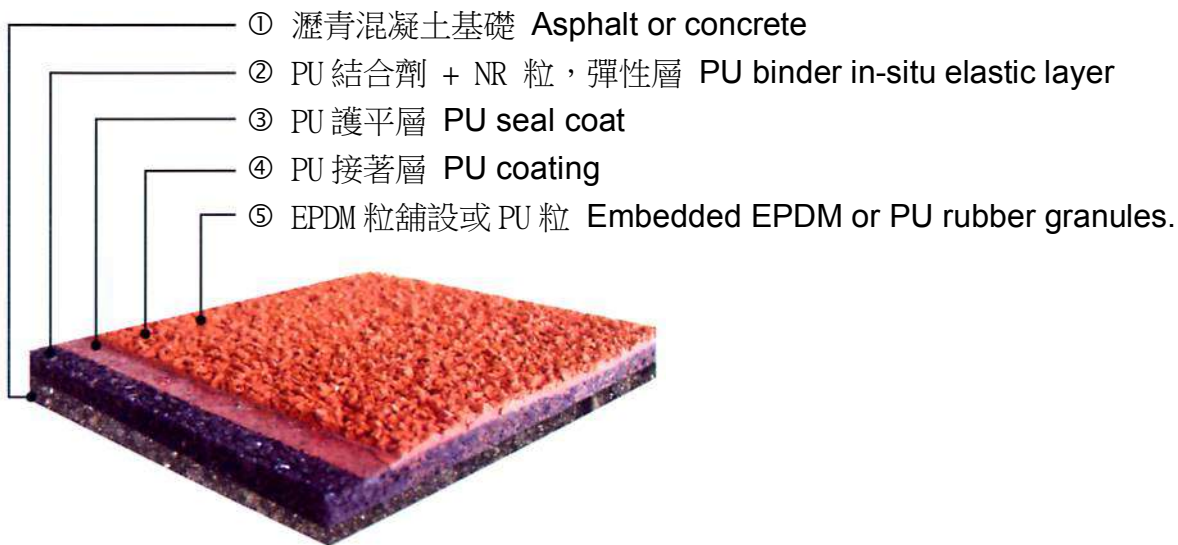


空隙式跑道 Sandwich system

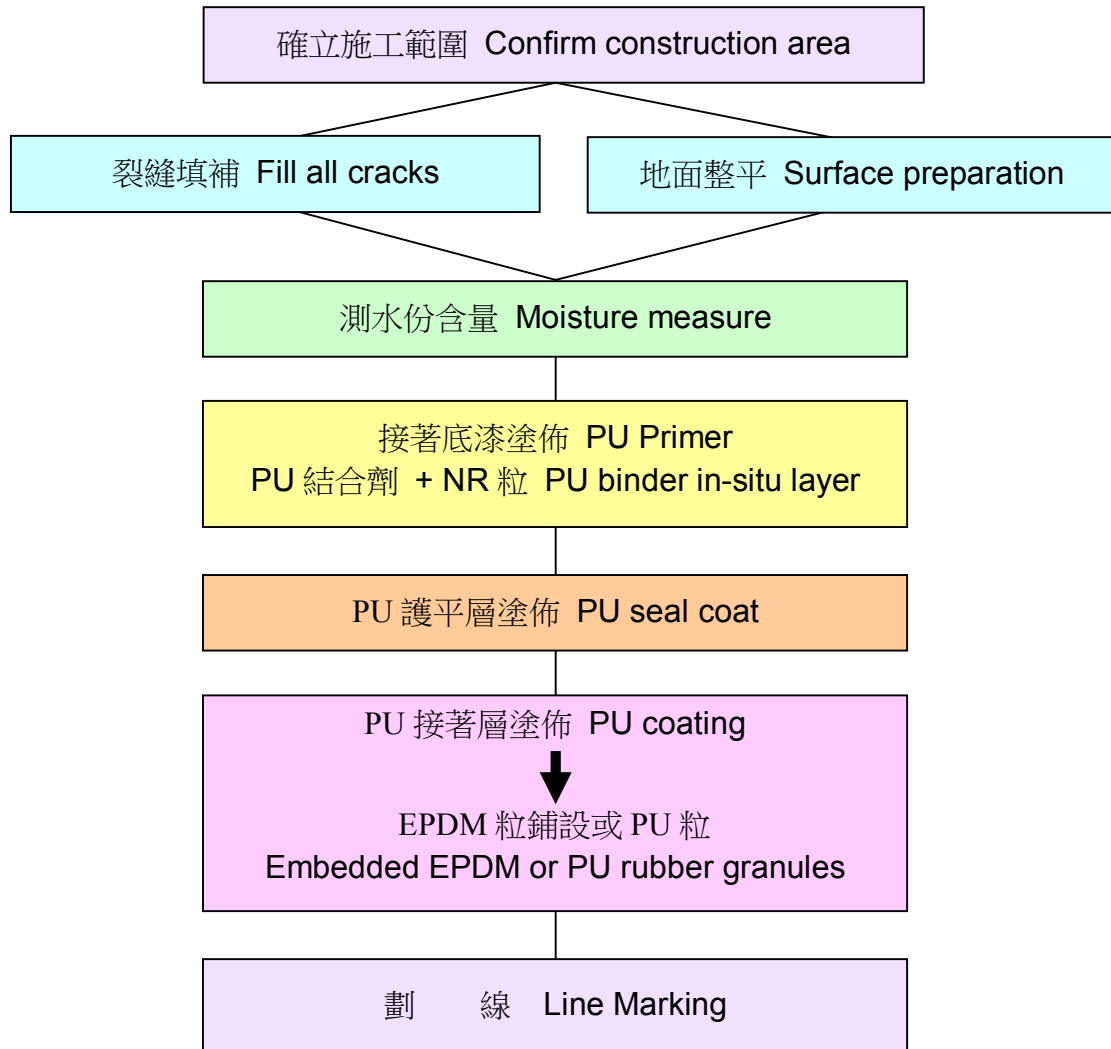
公司引進此彈性鋪設材之技術與理念、命名海力道－E，係空隙式運動場跑道，基層空隙可消滅一般 PU 跑道不透氣而凸起的缺點，而擁有 PU 高性能的優點，面層的性能，更達耐候性佳、耐磨損、耐長期使用的要求，並且以機械鋪裝鋪設整平一體化，平坦且排水性良好，是最進步的全天候運動場地鋪設材料。

Ching-Tai introduced and applied with this system's technology and concepts. Being called as HILEX-E sandwich system. This system's can reduce impermeability of the Full-pour running track system. This product owns a high performance of polyurethane. It can provide excellent resistance to weather and abrasion, for long term used requirement. This system is installed by professional machine ; its surface is smooth and has excellent drainage. Due to the nature of the materials used and the method of construction of the system, the resilience and elasticity can reduces impact noise and provides user comfort surface. Generally speaking, this system is the most advanced material of the running track.

■ 施工剖面圖：Application profile



■ 施工程序：Application



■ 物性分析：Physical properties

(PU 單液型結合劑 One component PU binder)

試驗項目 Testing items	方法 Methods	結果 Result(s)
1. 抗拉強度(kgf/cm ²) Tensile strength	ASTM D882 Test Speed 500mm/min	120 ↑
2. 伸長率(%) Elongation	ASTM D882 Test Speed 500mm/min	500 ↑
3. 粘著剝離荷重 (kgf / 2.5 cm 寬) Peeling strength loading	CNS 5812 K6508 Test Speed 200mm/min	60 ↑



透氣式跑道 Structural spray system



海力道 -R

透氣式

■ 前言(Introduction)

海力道面漆型透氣式運動場跑道是針對熱帶型氣候設計的跑道彈性鋪設材料，主體由高強度單液型 PU 樹脂混合高彈性 NR 橡膠粒構成，表面再噴塗耐磨耗的 PU 彈性面漆，形成符合國際標準的彈性運動跑道。

HILEX-R Structural Spray System is typically designed for wetter regions. HILEX-R is an in-situ two layer polyurethane spray system especially designed for running tracks. It features and lay composed of NR granules bound with a polyurethane binder and a surface layer of premium polyurethane and colored E PDM granules. This system meets the latest standards of international running track system.

海力道面漆型透氣式運動跑道基層內含有 30% 以上的空隙，利用此空隙吸收冷縮熱漲產生的體積差；包括熱帶氣候日夜溫差 40°C 及午後陣雨產生的材料急速冷卻造成的體積，百分之百避開傳統式跑道伸張凸起的缺點。

HILEX-R Structural Spray System provide more than 30% of the air voids, this feature can absorb the differences between the thermal expansion and contraction, also can overcome the typical tropical climates of the temperature varies much from day to night (i.e. 40°C differences in one day) , or afternoon thunder storm to produced by rapid cooling. This system can avoid the disadvantages of the traditional running track system.



海力道面漆型透氣式運動場跑道表面層噴塗美觀耐磨之 PU 彈性面漆，不但保養容易，而且維持透氣的效果，水氣隨時可由底層揮發，保護跑道永不變形；跑道使用磨損一段時間後，只需重新噴塗面漆，即如新跑道一般，美觀又耐用。

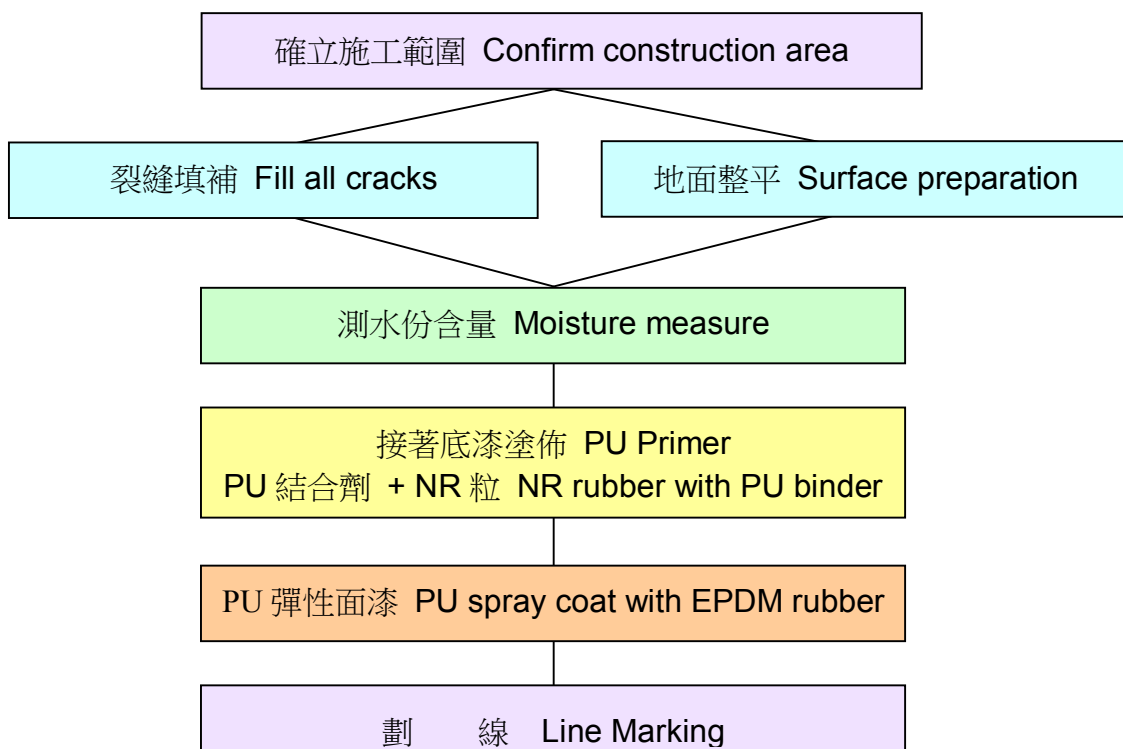
The top coating of this system can provide the water permeability, air ventilation and also easy to maintenance. Since this system is designed for the moisture can be evaporated from the bottom, it can protect the running track to out of the shape. If the surface of the running track has some abrasions, simply to recoat it again, it will be renew as original.



■ 施工剖面圖：Application profile



■ 施工程序：Application





■ 物性分析：Physical properties

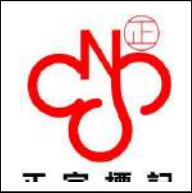
試 樣 Model	檢 驗 項 目 Testing items	規 格 Specification
PU 單液型結合劑 One component PU binder	固 形 份 (%) Solid content	85 ↑
	指 觸 乾 燥 (hrs) Tack free time (hrs)	1 ~ 3
	硬 化 乾 燥 (hrs) Curing time	12 ↓
	拉 抗 強 度 (kgf/c m ²) Tensile strength	120 ↑
	伸 長 率 (%) Elongation	500% ↑
PU 結合劑 / 橡膠粒 PU Binder/ rubber granules	硬 度 (HS) Hardness	40 ~ 60
	比 重 Specific gravity	0.86 ± 0.1
PU 彈性面漆 PU top coat (TC-993/ TC-993A)	指 觸 乾 燥 (hrs) Tack free time (hrs)	2 ~ 4
	硬 化 乾 燥 (hrs) Curing time	12 ~ 24
	耐 磨 耗 性 (g) Abrasion resistance	2.5 ↓



■ 注意事項 (Limitation) :

- 一、底漆、面漆、稀釋劑及部份產品含有有機溶劑，貯存與施工時請遠離火氣，以維安全。
Product should be kept away from ignition sources.
- 二、部份產品含有機溶劑及異味，所以在室內、地下室、貯槽等密閉場所之施工，請注意換氣通風，以維安全。
Provide adequate ventilation when applying this product in confined spaces or stagnant air.
- 三、施工中請配戴防護用具，如手套、護目鏡、防護面具、防塵口罩等，以維安全與健康。
It is necessary to wear the protective gloves and glasses when applying this material.
- 四、素地未乾，陰雨，相對濕度 85%以上時，應避免施工。
Do not apply when the surface is not completely dry or relative humidity is above 85%.
- 五、含主劑、硬化劑之產品，必須依規定比例調勻施工。
Mix the main agent with hardener according to the designed mixing ratio.
- 六、請參照施工說明書之指導使用，以確保品質。
Must have to follow the guidance while application.





工程實績 Reference

海力道跑道鋪設材料，不但是運動競技場地的優良鋪設材料，它還可以應用在各種室內、室外運動設施；如高爾夫球場走道、室內地面、公園走道、幼稚園活動場地、遊樂區走道等活動場所，提供舒適、安全、環保的優良鋪設材。

HILEX Track System can be applied in both indoor and outdoor athletic facilities such as: golf course aisle, indoor floor, parking lot area, kindergarten areas, recreational places, etc. This system provides the most comfortable, safe and environmentally friendly material for customers.



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