

# Tokyo Introduces Cool Pavements to Combat Heat Island Effect

夏の暑さは年々増し、予想を超える酷暑の日々が続きます。特にビルなどが建ち並ぶ都市部ではヒートアイランド現象が顕著になり、昼夜関係なく熱中症などの健康被害も心配です。東京都では新たな施策で温度上昇を抑えるように努めているようです。



## 1. Article

Read the following article aloud.

The Tokyo Metropolitan Government (TMG) is working to address the heat island effect. As of the end of fiscal year 2023, TMG has laid approximately 190 kilometers of cool pavements – reflective and water retaining pavements that **curb** road surface temperatures. The plan for 2024 is to apply heat-reducing pavement to an additional 10 kilometers of the city's roads. TMG aims to have a total of 245 kilometers of metropolitan roads paved by 2030.

These two types of pavements are part of the city's **measures** to address the heat island effect. TMG began laying them in 2005 mainly in Tokyo's "center core area," or the area inside the Metropolitan Expressway Central Circular Route. The cost of the pavements runs about 30% higher than conventional road cover. But they can reportedly suppress rises in road surface temperature by up to 8 to 10 degrees Celsius.

Here is how they work. The reflective pavement reflects the infrared rays that contribute to the rise in road surface temperatures. The water retaining pavement also suppresses temperature rise. It does so through the **evaporation** of water retained in the asphalt, **resulting in** the loss of heat of vaporization. The white pavement also looks cooler compared to conventional pavement.

Statistics from the Tokyo Fire Department show that road surface temperature is a problem for the city. Between May and September 2023, the most common locations for heatstroke-related emergency transports were residences at 39%, followed by roads at 24%. This rate exceeds the national average of about 17% of emergency transports from roads, pointing to the **critical** need for countermeasures in the city.

A metropolitan official commented, "Although immediate effects from the pavements are not expected, we are doing everything we can within the limited **measures** available to reduce the occurrence of heatstroke."

Source : Tokyo Introduces Cool Pavements to Combat Heat Island Effect  
[JAPAN 2 Earth](#)

## 2. Key phrases and vocabulary

First repeat after your tutor and then read aloud by yourself.

1. **curb** (強く) 抑制する、抑える、(歩道に) 縁石をつける

The city has introduced measures to **curb** traffic congestion.

2. **measure** 対策、手段、措置、方法

The government announced new **measures** to support small businesses.

3. **evaporation** 蒸発、発散

The **evaporation** of sweat helps to cool the body.

4. **result in** ~ (結果的に) ~をもたらす、~につながる、~に終わる

Delays in the project could **result in** higher costs.

5. **critical** 重要な、決定的な、重要な、危機の、危ない

It is **critical** to follow safety guidelines in the lab.

## 3. Questions

Read the questions aloud and answer them.

1. What is the Tokyo Metropolitan Government (TMG) doing to address the heat island effect?

2. How many kilometers of cool pavements had TMG laid by the end of fiscal year 2023?

3. According to the Tokyo Fire Department, what percentage of heatstroke-related emergency transports occurred on roads between May and September 2023?

4. Have you ever had to deal with heatstroke or know someone who has? What measures did you or they take to prevent it?

5. How do you usually stay cool during hot weather? Do you think cool pavements would help in your area?

## 4. 日本語関連記事： 東京都道190キロに白いアスファルト 遮熱性・保水性塗装でヒートアイランド対策

東京都は、路面温度の上昇を抑制する効果がある「遮熱性舗装」や「保水性舗装」を令和5年度までに都道約190キロで完了させた。今年度もこれらの舗装を10キロ程度施工することを計画していて、12年度までに都道計245キロで舗装を完了させることを目指す。

2種類の舗装は都がヒートアイランド対策として進めてきた。「センターコアエリア」と呼ばれる首都高速中央環状線の内側を中心に、平成17年度から舗装。いずれも通常の舗装に比べ3割程度費用が高額となるが、路面温度の上昇を最大8～10度抑制することができるという。

「遮熱性舗装」は、路面温度の上昇につながる赤外線を高反射させ路面温度の上昇を抑制する技術。「保水性舗装」では、アスファルトに保水された水分が蒸発して気化熱が奪われることにより、路面温度の上昇を抑制する。通常と比べて白い舗装は、見た目にも涼しげだ。

消防庁によると、都内の昨年5～9月の熱中症による救急搬送の発生場所は、住居が最も多く約39%、道路が約24%と続く。道路での救急搬送は全国の約17%を上回り、対策が課題となっている。都の担当者は「すぐに効果が出るものではないが、限られた対策のなかで、やれるだけのことをやって、少しでも熱中症発生の低減につなげたい」と話している。