

Science of Sport: Olympic Games Tokyo 2020

Behind the scenes at the Olympic Games Tokyo 2020, Dow materials science helps power technologies that insulate, seal, connect, coat, protect and deliver sustainability gains long after the closing ceremonies. The Olympic Games venues are said to represent the proud heritage of Japan, the legacy of Tokyo 1964 and the bright future of Tokyo’s urban development.



OLYMPIC STADIUM

Average temperature in Tokyo in August:
HIGH 88°F (31°C)
LOW 77° F (25°C)





Paints



Coatings



Wiring



Insulation

Dow products:

PRIMAL™
DOWANOL™
AXELERON™

VORANOL™
ENGAGE™



In order to keep this landmark venue stable and safe, polyurethane spray foam made with VORANOL™ Polyether Polyols helps seal the gaps between building materials while allowing for naturally occurring movement that happens with temperature fluctuations.



TOKYO AQUATICS CENTRE

PLASTICS



RUBBERS





Paints



Coatings



Wiring



Insulation

Dow products:

PRIMAL™
DOWANOL™
AXELERON™

VORANOL™
ENGAGE™



Serving as a bridge between rubber and plastic, ENGAGE™ Polyolefin Elastomers deliver reliable, long-lasting power in the venue's low and medium-voltage cables.



MUSASHINO FOREST SPORT PLAZA



Coatings



Insulation



Paints

Dow products:

DOWANOL™
VORANOL™

PRIMAL™



The paint at this multi-sport venue is formulated with PRIMAL™ Acrylic Polymer to help protect the integrity of interior walls and provide a durable aesthetic well after the badminton and fencing competitions have concluded.



OLYMPIC VILLAGE

The Olympic Village will be home to 11,000 athletes representing 206 nations at Tokyo 2020.



Sealant



Paints



Coatings



Wiring



Insulation

Dow products:

PRIMAL™
DOWANOL™
VORANOL™

ENGAGE™
AXELERON™
DOWSIL™



In the unlikely event of a fire, DOWSIL™ SE 5006 Sealant and DOWSIL™ SH 780 Sealant used around windows, doors and in elevators can help provide added fire resistance.



ARIAKE GYMNASTICS CENTRE

Capacity 12,000 people





Coatings



Wiring



Paints


Dow products:

PRIMAL™
DOWANOL™

AXELERON™
ENGAGE™



Dow coatings technology help shield the exterior walls of the venue by providing excellent dirt and water resistance for long-lasting protection after the Games.



OLYMPIC ROUTE NETWORK

The temporary paint used to draw bus lanes and marathon lines throughout the city uses Dow binder technology to ensure the streets of Tokyo return to their previously pristine condition after the games.

Post-Games: Removing conventional paint with high-power jets can result in extensive road damage. The temporary paint will be erased with a friendly remover solution featuring a Dow viscosity modifier that doesn't cause road damage, and all paint residue will be collected and properly disposed of.



NIPPON BUDOKAN



Excellent coalescing properties



Phthalate-free



Non-HAPs



Ultra low VOC



Paints



Coatings

Dow products:

PRIMAL™

DOWANOL™



DOWANOL™ Glycol Ethers used in the water-based coatings system helps maximize paint adhesion, optimize drying time and prevent damage from moisture, cracking and popping to help keep the venue looking fresh.



LOOK OF THE GAMES – FABRICS

Most wraps, packaging, and banners are destined for incineration or the landfill. VERSIFY™ is an innovative polyolefin- based fabric and membrane that enables such applications to be recycled after use.

Post-Games: Dow and Toppan intend to collect banners made with polyolefin-based materials and recycle them. Collected banners will be re-pelletized to produce flowerpots and plastic bricks to build flowerbeds, donated to local municipalities and schools.

INTERNATIONAL BROADCAST CENTRE



Sealant



Paints



Coatings



Wiring


Dow products:

PRIMAL™
DOWANOL™
AXELERON™

DOWSIL™
ENGAGE™



The connecting corridor that links the International Broadcast Center with the Main Press Center uses DOWSIL™ SE 797 Sealant to give the glass façade a sleek look without the use of metal frames.



EVENT BUSES

A crucial aspect of any Olympic host city operations is public transportation. Helping customize the look of buses playing Tokyo city, Dow's silicone technology will be used in release liners of decorative bus wraps to provide stable release performance.



YUMENOSHIMA PARK ARCHERY FIELD

A winning sports performance requires a combination of strength, flexibility and endurance. Those same properties are also found in DOWLEX™ Polyethylene Resins, plus offering design flexibility needed for iconic Tokyo 2020 turf designs. The same technology was used to create the “London Blue” turf at the Olympic Games London 2012.



OI HOCKEY STADIUM

Helps boost signal efficiency with up to a 30% decrease in dielectric loss in certain applications.



Paints



Coatings



Wiring



Insulation

Dow products:

PRIMAL™
DOWANOL™
AXELERON™

VORANOL™
ENGAGE™



AXELERON™ Compounds are leveraged in telecommunication wires as insulation layers to aid in transmission speeds and reduce the risk of signal loss.