



CASE STUDY



PROJECT NAME: Rio 2016 Olympic Hockey Pitches
PROJECT LOCATION: Deodoro Olympic Park, Rio de Janeiro (Brazil)
YARN RESINS: DOWLEX™ Polyethylene Resins
TOTAL TURF AMOUNT: 16,250 m²

Elite Turf Technology Meets Elite Athletes at the Rio 2016 Olympic Games

Dow Takes High-performance Turf Technologies to its Second Olympic Games

Every four years the Olympic Games gather the world's finest athletes to participate in one of the most viewed sporting events. The hockey tournament at the Olympic Hockey Center in Deodoro, Rio de Janeiro, will feature 42 games with 24 teams vying for the gold medal.

One of the oldest Olympic sports, hockey boasts great skill and bravery, plenty of goals, clever tactics and thrilling penalty shoot-outs. An elite playing surface is essential to boost the technical skills of players, and the latest generation of artificial turf has vastly improved softness, resiliency, and shock absorption, enabling players to control the ball more easily and making field hockey a faster and more exciting game.

The Rio 2016 hockey competition will be played on an innovative artificial turf surface using Dow's resins, designed to deliver a higher-performing and consistent field-of-play throughout the busy Olympic competition schedule, and our partner's technologies and expertise.

Partnering to Win

After successfully partnering in the construction of London 2012's Riverbank Arena synthetic hockey surfaces, Dow - the Official Chemistry Company of the Olympic Games - is collaborating once again with one of the world's leading manufacturers and suppliers of outdoor and indoor sports surfaces to supply the materials for the official hockey surface for two competition pitches (for 10,000 and 5,000 seats) and a warm-up area of the Rio 2016 Olympic Games.

"It is the combination of high performance materials and the right technology, as well as the constant drive to find new solutions that makes this market so interesting. As a result of the new developments, most international hockey competitions are now played on synthetic surfaces", comments Greg Bunker, Senior Global Marketing Director for Dow Packaging & Specialty Plastics. Friedemann Söll, Director Marketing & Product Management at Polytan GmbH adds: "we have a long and successful

history of supplying field hockey surfaces for the Olympic field hockey tournament. This newly developed turf produced with Dow's polyethylene is intended to make the game faster, more dynamic and even more attractive."

A World-class Playing Surface

A major challenge in the creation of a high performance Olympic hockey surface is achieving the right combination of stiffness, resiliency and softness. "A resilient and soft artificial turf surface is a field hockey player's best friend. In addition to minimizing abrasions, resilient and soft turf affords greater playing mobility and can help prevent serious injury. This delicate balance is determined by the molecular architecture of the polyethylene used in the yarn: the material has been designed to achieve the best balance of resiliency, softness and durability."

Field hockey players are constantly driving their studded boots into artificial turf surfaces, imposing multi-dimensional

mechanical stresses on the surface yarn. Mechanical toughness is therefore also vital, to ensure the condition of sports surfaces will not degrade through heavy use during the Games.

Winning Yarn Technology

DOWLEX™ PE Resins help ensure abrasion resistance, good tensile strength, weather resistance, and tear and impact strength. The latest Dow advancements in polymer science create a consistent field-of-play and conditions that won't degrade through heavy use, which translates to a high-quality field for the Olympics and beyond. In addition, DOWLEX™ resins deliver higher performance and processability, and provide the necessary durability for high-impact sports surfaces.

Yarns made with DOWLEX™ resins are soft, resilient and tough, providing a durable pitch for players to slide, tackle and fall on safely. The high-performance artificial turf system made with Dow's resins enables a faster pitch and greater playing mobility,



speeding up gameplay and enhancing the fans' viewing experience. The artificial turf is created to stay consistently flat, allowing more predictable and faster ball movement than on uneven grass surfaces. It also offers sustainability advantages, as artificial turf does not require watering or mowing – conserving water and energy on the maintenance process. Compared to natural turf, artificial turf can also be used after rain, ensuring continuous play.

Feeling Blue

Dow's Polyethylene-based solutions for artificial turf also offer unique conditions for resin dyeing, enabling the pitch to incorporate exciting, eye-catching colors.

For Rio 2016, the International Hockey Federation (FIH) confirmed that all fields will repeat London 2012's successful "distinctive blue playing surface", which allows players, officials, spectators and the media to keep their eyes on the ball more easily because of the high level of contrast against the yellow ball and white lines. For Rio 2016, the runoffs will be green to match the colors of the Brazilian flag. Alastair Cox, the International Hockey Federation's (FIH) Facilities and Equipment Manager, explained: "The use of the blue synthetic turf field at London 2012 showed the world that hockey was a dynamic, exciting and forward looking sport that welcomed innovation. Since then more and more FIH and national tournaments have

opted for a blue field. Playing on a blue surface has become synonymous with high level tournaments."

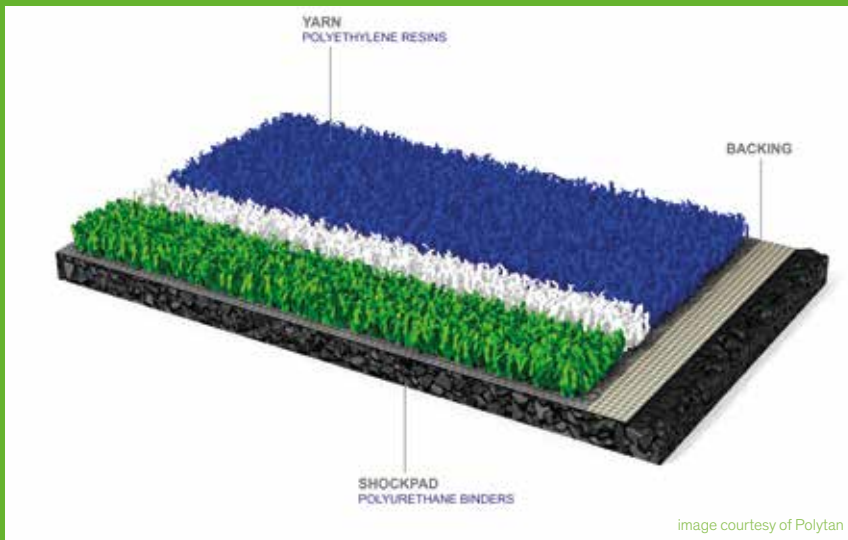


image courtesy of Polytan

Cutting Edge Technology

The Rio Olympic turf system is based on Dow's linear low density DOWLEX™ Polyethylene Resins in the yarn component as well as Dow's polyurethanes solutions.

Hockey pitch requirements:

- Soft, comfortable surface
- Minimal risk of abrasions
- Supports fast play
- Predictable ball roll
- Secure underfoot traction
- Excellent shock absorption
- Temperature and tear resistance
- Longevity and durability

What the Players Say

Eight national teams tested the pitches at the Deodoro Olympic Park.

André Patrocinio, the Brazilian Team Captain, commented:

"It is quite different, in a positive sense. The ball rolls well, and the pitch is excellent. This type of playing field allows for better ball control."

Eduardo Leonardo, Hockey Competition Manager for the Rio 2016 Committee, added:

"An artificial pitch like this one favors the technical part of the game, so the game becomes much faster. It also reduces the risk of injuries, and, principally, can further leverage the technical quality of all the athletes who are involved in the game."

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