

# SCIENCE BEHIND SPORT GETTING TO THE STADIUM

BEHIND SPORTING EVENTS AND HARD-WON CHAMPIONSHIPS, SCIENCE PLAYS A KEY ROLE IN MAKING INFRASTRUCTURE STRONG AND MORE SUSTAINABLE—CREATING INFRASTRUCTURE THAT HELPS SPECTATORS, THE MEDIA AND ATHLETES TO TRAVEL TO AND FROM SPORTING VENUES.



## AIRPORTS

Dow elastomer flooring solutions and polyurethane insulation help enhance the comfort, durability and energy efficiency of facilities like airports and public transportation stations.

*In 2014 Sochi International Airport handled 3.1 million passengers, a 28% increase over 2013.<sup>1</sup>*

New roads, rail links and airports built for the Olympic Winter Games Sochi 2014 transformed Sochi into a year-round destination for sport devotees.<sup>1</sup>

## ROADWAYS

FASTRACK™ Resins help create environmentally friendly waterborne road marking paint that dries quickly creating minimal traffic disruption.

*In preparation for increased travel from Seoul to the Olympic Winter Games PyeongChang 2018, major sections of South Korea's Yeongdong Expressway have been marked with traffic paint powered by FASTRACK™ Resins.\**

Dow polyurethane binder systems help polymer concrete resist chipping and cracking caused by impacts and temperature expansion/contraction.



## RAILWAYS

MAINCOTE™ Resins help offer chemical resistance, corrosion and weather resistance for metal components in railway systems.

*For the Olympic and Paralympic Games Rio 2016, Rio developed three modes of public transportation—the Bus Rapid Transit (BRT), the Metro and the Light Vehicle Rail system.*

*The Rio transportation network moved about 2.2 million passengers during the Games.<sup>2</sup>*



## CAR PARTS

ENGAGE™ Polyolefin Elastomers used in thermoplastic polyolefins help reduce weight, while maintaining impact performance and enhanced aesthetics.

*A 10% reduction in vehicle weight can lead to a 6-8% improvement in fuel economy.<sup>3</sup>*

NORDEL™ EPDM facilitates weatherstripping and under-the-hood belts and hoses that are reliable and facilitate lighter weight part design.

## SOUND

ACOUSTICRYL™ Technology for Liquid-Applied Sound Damping (LASD) coatings helps create a quiet, peaceful drive while offering lightweighting for improved gas mileage.

*LASD coatings in a vehicle can improve sound damping by 50-60% compared to traditional sound damping materials.<sup>4</sup>*

## ENGINES

UCON™ Performance Lubricant Solutions improve fuel efficiency and engine protection while reducing CO<sub>2</sub> emissions.

*Global vehicles in operation will exceed nearly 1.4 billion by 2021, with 2 billion in operation by 2040.<sup>5</sup>*

## SEATS

VORALUX™ and SPECFLEX™ polyurethane integral skin foam solutions offer enhanced cushion comfort and improved look and feel with lower Global Warming Potential.

### Top 3 Traffic Cities

*Average amount of hours spent in traffic per year<sup>6</sup>*

City	Average amount of hours spent in traffic per year
Moscow	91.4
Los Angeles	104.1
New York	89.4

Other infographics in the science behind sport series:  
THE FAN EXPERIENCE AND INSIDE AND OUTSIDE THE STADIUM

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 1 [https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/Games/Winter-Games/Games-Sochi-2014-Winter-Olympic-Games/Facts-and-Figures/Factsheet-Facts-and-Figures-Sochi-2014.pdf#\\_ga=2.139009723.969634145.1501694342-249971003.1501694342](https://stillmed.olympic.org/media/Document%20Library/OlympicOrg/Games/Winter-Games/Games-Sochi-2014-Winter-Olympic-Games/Facts-and-Figures/Factsheet-Facts-and-Figures-Sochi-2014.pdf#_ga=2.139009723.969634145.1501694342-249971003.1501694342)  
 2 <https://www.olympic.org/news/olympic-games-transport-rio-to-a-new-level>  
 3 <https://energy.gov/eere/articles/timeline-path-lightweight-materials-cars-and-trucks>  
 4 [http://msdssearch.dow.com/PublishedLiteratureDOWCOM/dh\\_0975/0901b80380975565.pdf?filepath=coatings/pdfs/noreg/884-01050.pdf&fromPage=GetDoc](http://msdssearch.dow.com/PublishedLiteratureDOWCOM/dh_0975/0901b80380975565.pdf?filepath=coatings/pdfs/noreg/884-01050.pdf&fromPage=GetDoc)  
 5 <http://news.ihsmarket.com/press-release/aapex/global-automotive-aftermarket-opportunities-continue-grow-ihs-market-says>  
 6 <http://inrix.com/scorecard/>  
 \*Dow is a Worldwide Partner of the Olympic Games

