

What drives the game of golf forward?

Science

DOW

From courses to golf clubs, science plays a key role in evolving the game of golf through technology advancements. Specifically, Dow solutions are working behind-the-scenes to improve the golf experience for players and spectators alike.

The Game of Golf
Global interest in golf is on the rise, with recent data showing that:



Total global revenue from golf equipment/apparel sales from the 2 top manufacturers increased by more than \$505K from 2018 to 2019.¹



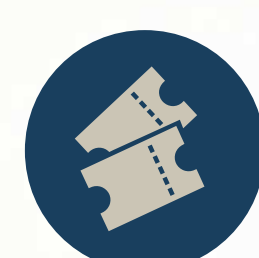
25% of junior golfers in 2017 were minorities as compared to 6% in 1995.²



Golf is a global sport, with nearly 39,000+ facilities in 209 of the world's 245 countries³



The global golf tourism market is expected to increase by \$5.36 billion from 2020 to 2024³



Events

Golf tournaments provide an incredible opportunity to advance sustainable event planning, from zero-waste to community impact. At the 2019 Dow Great Lakes Bay Invitational (GLBI), 68% of waste generated was recycled or reused, the regional economy received an estimated stimulus of \$12.7 million and 59 community organizations benefited directly from Dow GLBI support.⁵



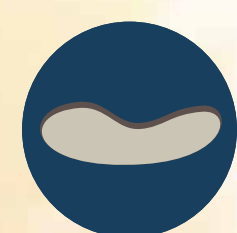
Personal care

Players should be worrying about their swing, not their skin or hair. Keeping fly-aways and sun rays at bay, lightweight, UV resistant polymer and silicone technologies formulated by Dow go to work to boost the performance of traditional personal care products like hair spray, moisturizer and sunscreen.



Clubs

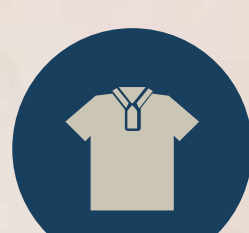
Today's clubs are built from steel, titanium and graphite⁴, with elastomer handle-grips. These soft-touch grips, formulated with Dow's patented polymer technology, help deliver a controlled, non-slip performance in dry and wet conditions.



Bunkers

Sand bunkers are an essential element of the golf game, but poor bunker drainage systems can cause washout and affect playability after heavy rainfall.

Polyurethane technologies from Dow used in drainage systems circumvent undue labor costs through erosion protection. Polymers sprayed on top of gravel bind it together, maintaining bunker porosity and functionality.



Apparel

Fashion has been an intrinsic part of the golf world for centuries. With ECOFAST™ Pure, Dow's innovation for more sustainable cotton dyeing, golf apparel brands can achieve the same great designs with less water and a lower carbon footprint.



Courses

Keeping the turf lush and healthy is a key challenge for all golf courses. Dow surfactant technologies help reduce moisture loss on the green, decreasing water consumption of courses.



Balls

Next-gen golf balls, like ERC Soft and Supersoft from Callaway, are infused with Dow's PARALOID™ Impact Modifiers in the hybrid cover to optimize distance, spin and control. Combined with SURLYN™ Ionomers, the ball's multi-material polymer composition promotes key player benefits and a soft, but strong feel.



Shoes

Copolymer technology for golf shoe midsoles is designed to enhance shock absorption mid-foot, where golfers typically end a stroke. Combined with innovative thermoplastic urethane solutions for more comfortable outsole cushioning, these lightweight technologies pack a powerful swing, with crucial support for injury prevention.



Golf carts

Compared with traditional air-filled tires, tire inserts built from Dow polyurethane elastomers reduce vehicle weight while improving shock absorption and durability.

Tees

At the 2019 Dow GLBI Tournament, Dow teamed up with KW Plastics to recycle all of the event mesh and scrim into plastic pellets that were then molded into over 20,000 golf tees.

Did you know?



In 2019, there was a 20% increase in Google searches involving "golf balls" and "golf clubs", when compared with the previous 5 years.⁶



The aerodynamic design of modern golf balls is optimized by 300-500 dimples on each ball.⁷



The earliest known form of golf was played in Scotland in the 1400s. The first round of women's golf was played 400 years later in 1811.



Two-piece balls are the norm for everyday use, but multi-layer options are trusted by pros for a softer club-to-ball connection.

¹<https://www.statista.com/statistics/273923/golf-equipment-companies-by-revenue/>
²<https://www.reuters.com/article/us-golf-pgachamp-diversity/diversity-remains-golfs-biggest-challenge-says-pga-of-america-ceo-idUSKBN1KT2OE>
³Global Golf Tourism Market Report. 2020. <https://www.researchandmarkets.com/reports/5205177/global-golf-tourism-market-2020-2024>
⁴<https://sites.psu.edu/xushunran/2015/10/15/evolution-of-golf-clubs-throughout-history/>
⁵<https://www.dowglbi.com/sustainability>
⁶<https://golf.com/travel/golf-courses-industry-booming-9-numbers/>
⁷<https://www.thoughtco.com/how-many-dimples-are-on-a-golf-ball-4121328>