

SPOONMAX Qualifier



Qualifier

05 Press Introduction

A rider on a red and black motorcycle is leaning into a turn on a racetrack. The rider is wearing a black and red racing suit with 'DUNLOP' and 'SYROCK' visible. The motorcycle is also red and black. The background shows a blue sky with light clouds and a blurred racetrack surface.

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Dunlop introduces the new Qualifier, the ultimate sport bike tire

Dunlop Motorcycle Tires is renowned for its ability to bring racing tire technology to the street. With the introduction of the all-new Qualifier (or Q), a DOT-spec sport bike tire that brings racetrack-level performance to the street, Dunlop ushers in a whole new era of ultra-high radial sport tire performance for serious riders.

In determining the criteria for the Qualifier—the successor to the street-going D208ZR—Dunlop's development team faced a daunting

task: elevate all aspects of performance while maintaining the consistent, predictable and sure-footed all-weather handling of the phenomenal D208ZR, the best-selling sport bike tire in the U.S.



THE GOAL

“What we set out to do was build a street tire out of a race tire,” said Dunlop’s Motorcycle Product Development Manager, Mick Jackson. “We had the D208GP legacy to tap into as well as our all-new Sportmax GP, so our goal was to preserve as much race tire performance as possible while engineering the new tire to meet the stability, durability and wet-weather performance standards inherent in the D208ZR.”

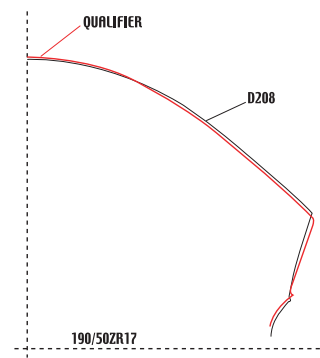
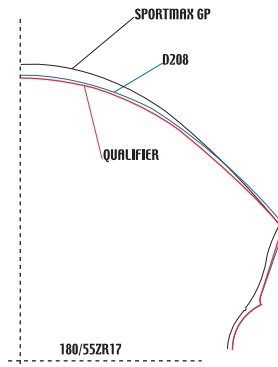
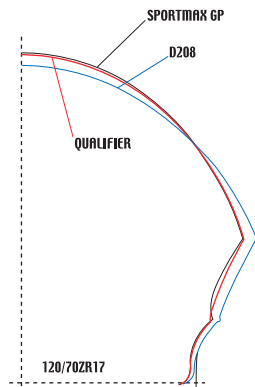


COMPOUNDS AND PROFILES

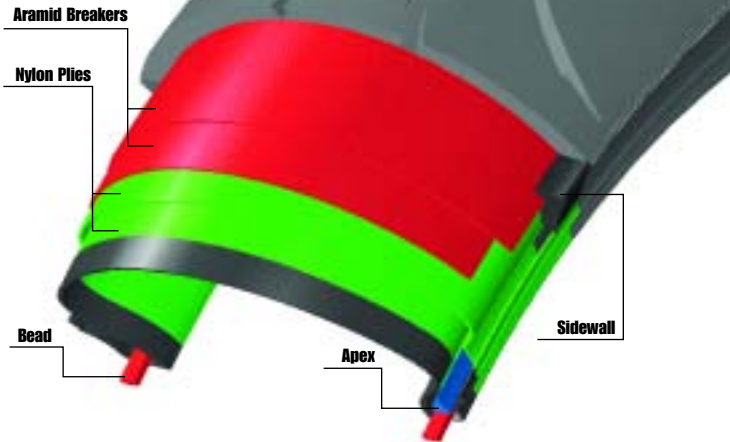
“From this point we used FEA (finite element analysis) to determine the optimum profiles and compounds,” said Jackson. “The rear tire retains the profile of the D208ZR but the compounding is now very similar to the medium-traction material found in our new Sportmax GP race tire. The compound is a blend of three polymers reinforced with a high-surface-area carbon black and a proprietary resin to maximize wet and dry grip and durability. For the front tire profile, we worked very closely with our UK race tire group. The front profile follows the aspect ratio of the Sportmax GP, while its compound is quite close to our D208GP tire.” The more triangulated profile of the front tire promotes quicker turn-in and lighter steering, and also contributes to a larger footprint at maximum lean angles.

Compound and profile selection for the Q went hand-in-hand with tread pattern development, jointly spearheaded by SRI (Sumitomo Rubber) in Japan and Jackson’s team in Buffalo, New York. “With our latest compounds, we were able to significantly increase the amount of land area in the tread pattern while maintaining the wet weather performance of the 208ZR,” said Jackson. The ratios of smooth tread to grooved tread (land/sea ratio) on the final design bear this out. On the Qualifier front, the amount of land area has increased 6.0 percent (to 93.1 percent) while the Qualifier’s rear land area is 92.8 percent, an increase of 3.4 percent compared to the 208ZR. Bottom line: Bigger footprints front and rear help increase grip at both ends.

Profile Comparison



FRONT TIRE



CONSTRUCTION

The cut-angle breaker construction of the front tire utilizes two nylon carcass plies and two aramid reinforcing belts. As used on the D208GPA tire, Jointless Band (JLB) rear tire construction features a continuously wound tread belt to assure consistent tire diameter in all operating conditions. The 180/55ZR17 and 190/50ZR17 sizes utilize one nylon carcass ply and one aramid JLB belt.

The 200/50ZR17 has two nylon carcass plies and one aramid JLB belt. Improvements in belt design and construction have significantly reduced weight in the Qualifier rear tire by approximately one pound compared to the equivalent 208ZR sizes. This reduction in unsprung weight can profoundly reduce the gyroscopic impact of the tire/wheel combination and contribute to quicker acceleration and steering.

REAR TIRE



Tire footprint comparison Qualifier versus D208ZR

The new Qualifier places a significantly larger footprint on the ground than the D208ZR it replaces. Changes in profile and the additional compliance derived through the Qualifier's construction help lay down a larger footprint. The result: significantly more grip that provides stability and confidence during straight up riding and braking, and at all cornering angles.

FRONT TIRE						REAR TIRE					
0° Lean Angle		30° Lean Angle		45° Lean Angle		0° Lean Angle		30° Lean Angle		45° Lean Angle	
Qualifier	D208ZR	Qualifier	D208ZR	Qualifier	D208ZR	Qualifier	D208ZR	Qualifier	D208ZR	Qualifier	D208ZR
120/70R17	120/70R17	120/70R17	120/70R17	120/70R17	120/70R17	190/50R17	190/50R17	190/50R17	190/50R17	190/50R17	190/50R17

+20% **+12%** **+18%**

+12% **+8%** **+11%**

TREAD PATTERNS

The Qualifier's front and rear tread patterns remain very similar to the Sportmax GP design that rules the AMA's Supersport class. An extension of Dunlop's cosecant-curve design first introduced on the D207 and perfected on the D208GP, the tread grooves are designed to continuously coincide with the forces running through the tire. As the curving tread pattern travels across the tire to the shoulder area, it keeps the driving and braking forces aligned properly as cornering forces come into play. The tread pattern of the Q contains more longitudinal elements in the center of the tread for enhanced wet-surface grip, yet sacrifices none of the D208ZR's excellent dry-surface wear performance. It is visually distinguishable from the ZR

tread pattern by the V-shaped chevrons molded into the tread grooves in the middle portion of the tread. Additionally, the front tire features tread elements which are staged at different intervals around the tire. This variable pitch pattern reduces frequency-generated noise and vibration.



OUT OF THE LAB AND INTO THE REAL WORLD

Dunlop is well known for its exhaustive evaluation process and this crucial aspect was significant in the final rendition of the new Qualifier. Dozens of possible profile, compound and tread-pattern combinations were narrowed to several dozen design variations that were then subjected to real-world riding and racing conditions.

“We did extensive testing at our facilities in Mireval, France, Almeria, Spain and our Huntsville, Alabama Proving Grounds in the U.S.,” said Jackson. When the final design was evaluated against the D208ZR on a 600cc sport bike at Virginia International Raceway’s (VIR) 1.65-mile South Course, the results were astounding: The Qualifier covered the course 3.5 seconds faster (1.13:796 vs 1.17:305) than the D208ZR.

Where does this increased performance manifest itself? Compared to the D208ZR, the Qualifier has improved side grip and better drive traction out of corners, allowing for higher cornering speeds and quicker exits. On the front, the Qualifier requires less steering effort, which means that directional changes—turn-in and transitions—occur more quickly.

At the VIR evaluation, data acquisition indicated the Qualifier front tire speed through turns one and two—consecutive right-handers following the front straight—was 3.5 mph faster than the D208ZR. In turn four, a left-hander at the entrance to the Spiral, the advantage grew to 4.3 mph. The most dramatic example occurred in turn nine, a right-hand kink at the entrance to the Climbing Esses, where the speed differential was a whopping 8.3 mph.



BALANCING PERFORMANCE AND DURABILITY

One might think that the stickier Qualifier heats up faster, and it does—a benefit for street riding—yet Dunlop's compound chefs have cooked up a formula that carries no more carcass heat than the D208ZR. That translates into tread life for the Qualifier that's equivalent to the D208ZR despite the Q's higher level of performance and predictable, confidence-inspiring handling.

The international effort to design the Dunlop Qualifier took 24 months from conception to product introduction, a measure of Dunlop's ability to marshal the strengths of its worldwide R&D capabilities and respond to market conditions. Another telling aspect of Dunlop's market reflexes is the fact that the Sportmax GP racing tire was just introduced to the world in February, 2005 and now, just eight months later, the company has introduced its street-going equivalent in the Qualifier.

The Qualifier will be available in the U.S. in January 2006 and will be offered in these sizes: front 120/60ZR17, 120/70ZR17, 130/70R16, rear 160/60R17, 170/60R17, 180/55ZR17, 190/50ZR17, 200/50ZR17.

In addition to Motorcycle Product Development Manager Mick Jackson, two engineers factored significantly in the development of the Dunlop Qualifier: Chris Zawistowski, Tire Development Engineer; Werner Brehm, Materials Engineer. In addition to this engineering team, Dunlop would like to recognise the Huntsville Proving Grounds team of Danny Roberts, Rich Conicelli and Levon Pendergrass for their tireless efforts in developing the all-new Qualifier.



Dunlop championship history

In the USA, Dunlop's name in road racing stands above all others. Examine the history of AMA racing, and you'll find Dunlop owns the overwhelming majority of championships, more than all other tire manufacturers combined in the modern era. Since the inception of the AMA's 600 Supersport class, Dunlop racers have won a mind-boggling 17 out of a possible 17 championships. In the ultra-competitive AMA Superbike class, Dunlop has won 20 titles, including the last 16 in a row. And as of the close of the 2004 season, Dunlop earned eight of nine Formula Xtreme championships plus 22 championships in a row in AMA 250 Grand Prix racing. This extraordinary winning record even carries over to the realm of AMA motocross and Supercross, where Dunlop has chalked up far more championships than any other tire manufacturer. For championship-caliber racing performance, no one comes close to Dunlop.



DUNLOP SUPERBIKE CHAMPIONS

YEAR	NAME	MACHINE
2005	Mat Mladin	Suzuki
2004	Mat Mladin	Suzuki
2003	Mat Mladin	Suzuki
2002	Nicky Hayden	Honda
2001	Mat Mladin	Suzuki
2000	Mat Mladin	Suzuki
1999	Mat Mladin	Suzuki
1998	Ben Bostrom	Honda
1997	Doug Chandler	Kawasaki
1996	Doug Chandler	Kawasaki
1995	Miguel Duhamel	Honda
1994	Troy Corser	Ducati
1993	Doug Polen	Ducati
1992	Scott Russell	Kawasaki
1991	Thomas Stevens	Yamaha
1990	Doug Chandler	Kawasaki
1987	Wayne Rainey	Honda
1986	Fred Merkel	Honda
1985	Fred Merkel	Honda
1984	Fred Merkel	Honda



DUNLOP 600 SUPERSPORT CHAMPIONS

YEAR	NAME	MACHINE
2005	Tommy Hayden	Kawasaki
2004	Tommy Hayden	Kawasaki
2003	Jamie Hacking	Yamaha
2002	Aaron Yates	Suzuki
2001	Eric Bostrom	Kawasaki
2000	Kurtis Roberts	Honda
1999	Nicky Hayden	Honda
1998	Steve Crevier	Suzuki
1997	Miguel Duhamel	Honda
1996	Miguel Duhamel	Honda
1995	Miguel Duhamel	Honda
1994	Jamie James	Yamaha
1993	Miguel Duhamel	Kawasaki
1992	Tom Kipp	Honda
1991	Miguel Duhamel	Honda
1990	David Sadowski	Yamaha
1989	Scott Zampach	Yamaha
1988	Doug Polen	Suzuki
1987	Doug Polen	Honda

DUNLOP FORMULA XTREME CHAMPIONS

YEAR	NAME	MACHINE
2005	Miguel Duhamel	Honda
2004	Miguel Duhamel	Honda
2003	Ben Spies	Suzuki
2002	Jason Pridmore	Suzuki
2000	Kurtis Roberts	Honda
1999	Kurtis Roberts	Honda
1998	Eric Bostrom	Honda



DUNLOP 750 SUPERSPORT/SUPERSTOCK CHAMPIONS

YEAR	NAME	MACHINE
2005	Aaron Yates	Suzuki
2004	Aaron Gobert	Yamaha
2003	Joshua Hayes	Suzuki
2002	Jimmy Moore	Suzuki
2001	Jimmy Moore	Suzuki
1999	Tom Kipp	Suzuki
1998	Rich Alexander	Suzuki
1997	Jason Pridmore	Suzuki
1996	Aaron Yates	Suzuki
1995	Tom Kipp	Yamaha
1994	Tom Kipp	Suzuki
1993	Britt Turkington	Suzuki
1992	Scott Russell	Kawasaki
1991	Scott Russell	Kawasaki
1990	Scott Russell	Kawasaki
1989	Jamie James	Suzuki
1988	Doug Polen	Suzuki

DUNLOP 250 GRAND PRIX CHAMPIONS

YEAR	NAME	MACHINE
2003	Rich Oliver	Yamaha
2002	Chuck Sorensen	Aprilia
2001	Jim Filice	Yamaha
2000	Chuck Sorensen	Yamaha
1999	Chuck Sorensen	Yamaha
1998	Roland Sands	Yamaha
1997	Rich Oliver	Yamaha
1996	Rich Oliver	Yamaha
1995	Rich Oliver	Yamaha
1994	Rich Oliver	Yamaha
1993	Jim Filice	Yamaha
1992	Colin Edwards	Yamaha
1991	Jim Filice	Yamaha
1990	Doug Brauneck	Yamaha
1989	John Kocinski	Yamaha
1988	John Kocinski	Yamaha
1987	John Kocinski	Yamaha
1986	Don Greene	Yamaha
1985	Don Greene	Yamaha
1984	Don Greene	Yamaha
1983	Randy Renfrow	Yamaha
1982	Sam McDonald	Yamaha



Dunlop history

More than 80 years ago in 1923, ground was broken for what would become the first Dunlop tire manufacturing facility in the United States, in Buffalo, New York. And Dunlop remains the only manufacturer to produce motorcycle tires in the U.S.

Dunlop's U.S. motorcycle tire facilities also include the Huntsville Proving Ground (HPG) in Alabama—a \$10 million, 60-acre facility opened in 1989. Dunlop's professional test riders prove the company's motorcycle tires on HPG's dry and wet handling courses, dry and wet skidpads, motocross and Supercross tracks, supermoto course, and an ATV testing course. All Dunlop Grand Prix and Superbike wet-weather tires are tested on HPG's special wet handling course before they are used in competition.

RACING

Dunlop's rich racing history stretches back more than a century—to 1889, when Dunlop first introduced the revolutionary idea of using pneumatic tires in race competition. Since then, Dunlop's dom-

inance in two-wheeled motorsports has become legendary, in America and around the world.

For decades, Dunlop has dominated nearly every sphere of motorcycle racing. From the desolate expanses of untamed Baja California, to the rough & tumble Hare and Hound arena, on banner-lined motocross tracks, to the most competitive road racing series in the world, no other tire manufacturer has even come close to approaching Dunlop's winning heritage. Dunlop has won more AMA National championships than any other tire manufacturer in virtually every category of racing.

TECHNOLOGY AND INNOVATION

The history of Dunlop is underwritten by a never-ending pursuit of innovative tire design. Dunlop initiated the use of aramid belts in motorcycle tires, produced the first original equipment radial street tire, and continues to offer the broadest range of tires available from any manufacturer, for street, track and off-road use.



For more Dunlop tire information go to www.dunlopmotorcycle.com
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