

TYRE TEST 2021

Part 2: 120/70 ZR 17 and 190/55 ZR 17 sports tyres



SURFIN' ON SUNSHINE

Let's pull up the pit gates and let them out: Karsterina (photo) and the Braves start the season with a spin. But how does the R1 perform best on the dance floor? Six cutting-edge sports tyres must prove their worth: square dance on highways, Rock am Ring, and "When the rain begins to fall". Clear the stage for the tyre test, part two!

By Jörg Lohse and Karsten Schwerts; photos: Markus Jahn, mps-Fotostudio (6), Yamaha (1)

Coronavirus meant that the sports tyre test we had planned for 2020 had to be put on hold. But no worries – basically no one missed out. On the contrary. Due to the reorganisation of the test procedures, we can now launch the 2021 tyre test much earlier than usual.

Old hands will remember that we usually play out our tyre hit parade in the May to early June issues of MOTORRAD. However, people have occasionally wondered whether this not entirely insignificant buying guide for ultimate cornering pleasure could be placed a little earlier in the year. Preferably towards the start of the season. Et voilà, let's turn the hit parade into a request concert - and let the tyre test combo fire up their instruments.

Part 2 now focuses on six sports tyre pairings from premium brands Bridgestone, Continental, Dunlop, Metzeler, Michelin and Pirelli. In the glossy manufacturer's brochures, these are often described as supertyres or even hyper sports tyres. Depending on the manufacturer, there are usually various model variants to choose from. We have focused on a combination that is as versatile as possible. The individual sections of the test clearly demonstrate this.

We will evaluate all six sports tyres on highways, on a racetrack, and in the rain, with equal weighting of one third each. So overall, the everyday part of this test predominates by two thirds to one. In line with this requirement, the above-mentioned manufacturers were free to send in whatever model they thought would be suitable for testing purposes.

Bridgestone's S 22 is already familiar to us from the 2019 test, and is defending its title as that year's champion. With its Sport Attack 4, Conti is sending its successor to the No. 3 into the running for the first time. We are curious to see whether No. 4 handles as brilliantly. Dunlop's Sportsmart TT is an interesting hybrid model: great for track days, but how does the mix work in everyday life? We'll see! While the Pirelli Diablo Rosso Corsa II remains a familiar profile in the line-up, the M9 RR comes from the group's sister brand Metzeler as the successor to the versatile M7. Can the M9 defend its mighty heritage? Michelin's new Power 5 has set out to take up this legacy once again. After the RS and RS+, the Power 5 wants to draw on old virtues of power, with rain pace a key element. So things look set to get exciting. But enough with the preliminaries, let's get ready for the Top Six!



READY FOR THE HOME CIRCUIT?

A casual warm-up before things get serious? Nope. There are special features lurking in everyday riding that shouldn't be taken lightly. Round one: Highway!

These weeks, when you roll your super sports bike, naked bike or power crossover in front of the garage in the morning, you won't be the only one shivering a little. The same applies to the rubber on the rims, but the goose bumps aren't visible at first. You can feel it all the more when you're easing into your first bends: hard and stiff response, diffuse feedback, stubborn handling.

Just like engine oil and coolant, the rubber on the rims needs to be warmed up properly before it can perform at its best. And this is precisely what makes the development process in this category not easy.

On the one hand, you have increasingly powerful naked and superbikes that require a correspondingly stable basic construction. Bikes that move smoothly around bends of all kinds, but can also be turned out for a 250+ km/h ride on the track. Superb handling on the one hand, unshakable directional stability on the other. But let's return to temperatures.

We're not talking about high summer tyres in this test, which are only supposed to work at asphalt temperatures above 40 degrees. The season lasts from Easter to October and, despite all the climate change, ordinary bikers have to deal with very moderate weather conditions on many days of the year.

Which is why sports tyres that are configured for maximum performance are a bit at a disadvantage in this section of the test. They simply do not reach optimal operating temperature in the daily flow or can't be kept stable at that point.

So if you are mainly looking for a sporty all-rounder, take a closer look at this table.

MOTORRAD scoreboard for Highway

	Maximum score	Bridgestone Battlax S 22	Continental Sport Attack 4	Dunlop Sportsmart TT	Metzeler Sportec M9 RR	Michelin Power 5	Pirelli Diablo Rosso Corsa II
Driving behaviour							
Cold start	10	8	9	6	8	8	8
Handling	20	19	17	16	18	19	17
Steering precision	20	19	17	17	18	19	18
Cornering stability	10	10	10	10	10	10	10
Grip in lean angle/acceleration	20	20	20	20	20	20	20
Handling on the limit	10	9	9	9	9	9	9
Righting moment	10	9	8	8	8	9	9
Total	100	94	90	86	91	94	91
RATING*		VERY GOOD MOTORRAD KAUFipp	GOOD	GOOD	VERY GOOD MOTORRAD KAUFipp	VERY GOOD	VERY GOOD

In the "home circuit ranking", the Bridgestone S 22 and Michelin Power 5 in particular manage to make their mark with a small lead. Both score points with superb handling and razor-sharp steering precision in everyday conditions. On the other hand, the entire test field can only be given top marks for cornering stability, grip in lean angle, and acceleration out of corners.

Something that is and remains unique: When new, Conti builds up a phenomenal feeling of grip from the very first metre

*100 to 91 points = very good; 90 to 81 points = good; 80 to 71 points = satisfactory; 70 to 61 points = adequate; 60 to 51 points = insufficient; 50 to 0 points = poor

A FEW LAPS ON THE CIRCUIT?

Escape the daily grind and hit the racetrack for some fun. Will the six sports tyres keep up or are they heading for an early exit? Round two: Racetrack!

First things first: If you're very ambitious in chasing your personal best time on the racetrack, then you shouldn't focus on this type of tyre. For predominant use on asphalt tracks off the road, appropriately pointed racing tyres are recommended, some of which are available with and without road approval. However, "normal" sports tyres shouldn't buckle either if you want to do a bit of amateur training at Hockenheim, the Sachsenring or Oschersleben – with more commitment sometimes! Only and exclusively for this test section have we lowered the inflation pressures to the values given in the table below in accordance with the tyre manufacturers' recommendations. The highway section described above was driven in with the usual vehicle manufacturer recommendations of 2.5 bar (front), and 2.9 bar (rear).

Our puncture thermometer showed 60 degrees and above during the regular temperature check of the tyre tread – in other words, constantly perfect conditions for putting the test R1 into full lean on the old Grand Prix track called "Carland" (see below

left, now a Goodyear Dunlop testing ground). Which sports tyres are particularly fun to use in amateur racing mode? Let's take a closer look at the table and the lap times determined by 2D data recording.

MOTORRAD scoreboard for Racetrack

	Maximum score	Bridgestone Battlax S 22	Continental Sport Attack 4	Dunlop Sportsmart TT	Metzeler Sportec M9 RR	Michelin Power 5	Pirelli Diablo Rosso Corsa II
Driving behaviour							
Handling	10	9	8	9	8	10	8
Steering precision	10	10	8	9	9	10	9
Cornering stability	20	19	17	18	18	16	19
Grip in lean angle	20	19	15	18	18	16	19
Grip when accelerating	20	19	17	19	19	18	19
Handling on the limit	20	19	17	18	19	18	19
Lap time in minutes		1:31.08	1:33.03	1:31.76	1:31.35	1:33.10	1:31.5
Inflation pressure front/rear in bar		2.2/2.0	2.1/1.8	2.4/2.5	2.5/2.5	2.1/1.9	2.5/2.5
Total	100	95	82	91	91	88	93
RATING*		VERY GOOD MOTORRAD KAUFipp	GOOD	VERY GOOD	VERY GOOD	GOOD	VERY GOOD MOTORRAD KAUFipp



What works superbly in everyday life can also be brilliant in a fierce spin on the racetrack. This is very clear in the case of the Bridgestone S 22. But everyday qualities can get in the way a little. The Michelin Power 5 falls back a little on the track. The Pirelli and Dunlop tyres, which are very much designed with (racing) sports in mind, pick up speed – the Sportsmart TT with a noticeable increase in handling and steering precision. The new Metzeler M9 RR keeps its level even at aggressive speeds.

*100 to 91 points = very good; 90 to 81 points = good; 80 to 71 points = satisfactory; 70 to 61 points = adequate; 60 to 51 points = insufficient; 50 to 0 points = poor



RIDERS ON THE STORM

One test round for us, but for many the decisive one: riding in wet conditions. Because with the wrong tyres on a 200-horsepower bike, your heart can quickly sink into your boots.

There is, of course, a magic remedy against rain and it is called silica. Tyre developers use this silicic acid compound to imbue the rubber with a certain suppleness even in wet conditions. First and foremost, wetness means cold. This is because rain basically has the same effect as engine coolant, in that temperatures are permanently brought down – which is desirable for the engine, but has incredible disadvantages for tyres. The rubber, which is inherently tough and unmanageable, needs a certain core temperature in order to bond optimally with the asphalt. While you can quickly move

tyres into the comfort zone between 40 and 60 degrees Celsius when cornering fast in the sun, only half that is possible on wet roads – meaning that you're permanently "garage cold", so to speak. The silica mentioned above helps make the tyres grip, to a certain extent, although this softener should not ultimately be added to the rubber compound. The best and most impressive example: a MotoGP race that is started on rain tyres in continuous rain. The lean angles and acceleration out of bends that can be achieved are just incredible, aren't they? But then the rain suddenly subsides, the track dries out, the tyres get a violent heat

MOTORRAD scoreboard for Wet Conditions

	Maximum score	Bridgestone Battlax S 22	Continental Sport Attack 4	Dunlop Sportsmart TT	Metzeler Sportec M9 RR	Michelin Power 5	Pirelli Diablo Rosso Corsa II
Driving behaviour							
Handling	10	9	8	6	9	10	8
Steering precision	20	18	16	14	19	19	17
Grip in bends	20	19	17	13	19	20	19
Grip when accelerating	20	18	16	14	19	17	19
Handling on the limit	20	17	16	13	19	18	18
Braking deceleration	10	8	6	5	8	9	7
Braking distance (m) from 100 km/h		51.4	53.4	54.7	50.8	49.9	51.7
Speed (km/h) Omega		60.9	59.7	52.5	60.8	61.4	60.3
Lap times (in minutes)		1:26.6	1:28.5	1:39.3	1:24.3	1:24.8	1:25.2
Total	100	89	79	65	93	93	88

RATING	GOOD	SATIS-FACTORY	ADE-QUATE	VERY GOOD	VERY GOOD	GOOD
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MOTORRAD KAUFtipp

In the rain, Michelin's outstanding highway performer, the Power 5, comes into its own again. The stopping distance when braking fully from 100 km/h is also phenomenal – and a real plus in terms of safety! On a par with this is Metzeler's M9 RR, which comes to a halt just under a metre later. But the two racetrack aces from Bridgestone and Pirelli are also impressive with a superb performance in wet conditions. Compared with the front-runners, Conti is a little too slack, while Dunlop's TT, tuned for track days, can't keep up in this test field

*100 to 91 points = very good; 90 to 81 points = good; 80 to 71 points = satisfactory; 70 to 61 points = adequate; 60 to 51 points = insufficient; 50 to 0 points = poor



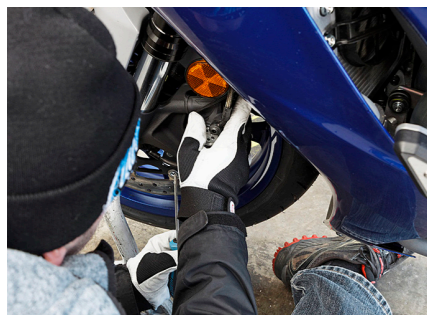
Big data: The finest MotoGP measuring equipment from 2D is also on board for the tyre test



PCR test: P for Prick, C for Celsius, R for Rubber. All tyres in the positive range



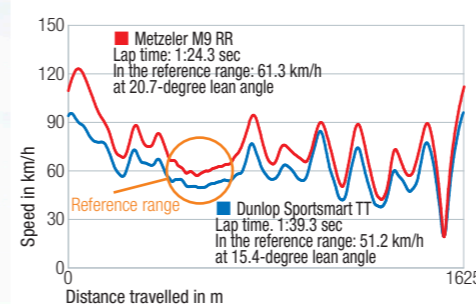
Whose is the ... widest? Once again, PS colleague Volkmar wants to know for sure



Ch-ch-changes: Tyres out, tyres in. New ones every hour. Piecework in the pit



Warming room: Between circuits, the testers come back to operating temperature



Wet test circuit

A particularly revealing area is the omega marked in red, where all tyres can be moved sensitively towards the skid limit. Differences in average speed and lean angle finally make it clear that the more slip the tyre allows, the higher the lap time



boost with no rainwater cooling – and suddenly the tread blocks fly off the drivers' tyres. We've all seen it and don't want to experience it on ourselves! This is precisely why the best possible balance must be found for everyday use, so that the rubber compound grips sufficiently on wet and cold roads, but doesn't flex dangerously in hot cornering and continues to provide superior stability when riding at high speed.

This is the job of circumspect tyre designers. And if they've done their job well, their tyres will work in this round too after rounds one and two. In order to arrive at watertight and above all comparable results, it is necessary to simulate everyday driving in the rain as best as possible. Like here on the Goodyear-Dunlop testing ground, where every run on the permanently and evenly irrigated circuit is captured via data recording.

The cornering evaluation (as seen in the example above left) finally reveals clear differences when the tyres are pushed to the limit in the rain.





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Bridgestone Battlax S 22

Weight: Front 4.3 kg, rear 6.8 kg
Country of production: Japan
Info/approvals: Bridgestone Germany, Tel. 0 61 72/40 81 73, www.bridgestone.de

EVALUATION

Highway: Once brought up to temperature, the S 22 takes corners very smoothly and with crystal-clear feedback for its grip reserves. It behaves in a pleasantly neutral way and moves into a lean angle like a natural. With good handling and plenty of absorbance, it continues to deliver top feedback even at brisk speeds.

Racetrack (driven with inflation pressure recommendation front/rear 2.2/2.0 bar): Exemplary steering precision, solid grip, unshakeable stability and very good handling are the advantages during a fast turn around the track. Thanks to its phenomenal feedback, the rider can lean particularly hard into the bend and it boasts the best lap times in the test.

Wet test: The S 22's broad limit range means that skids announce themselves early – making it very easy to gauge in the rain. Front and rear tyres are very well balanced in terms of grip level. Excellent braking ability!

Summary: In 2019, the then newly introduced S 22 was already at the top of the podium. The snappy, sporty all-rounder won't let itself be robbed of the test victory in 2021, despite improved competition. A "Kampai" to Japan!

MOTORRAD

Rating: Very good



Continental Sport Attack 4

Weight: Front 4.4 kg, rear 6.7 kg
Country of production: Germany
Info/approvals: Continental, Tel. 05 11/9 38 01, www.conti-moto.de

EVALUATION

Highway: With its rough surface ("traction skin"), the Conti is there right away – no other new tyre has this advantage! However, No. 4 can no longer match the outstanding handling of its predecessors; the competition is now making its mark here. On the other hand, it offers impressive neutrality across the entire spectrum of lean angles.

Racetrack (driven with inflation pressure recommendation front/rear 2.1/1.8 bar): Even in race mode, the Sport Attack 4 is a bit behind in terms of handling and steering precision. Although its grip reserves are adequate for track days, its slightly too narrow limit range makes it somewhat difficult to test the limits at extreme speeds.

Wet test: Wet plus cold is not the Sport Attack 4's thing. During fast lean angle changes, there is a slight lack of clear feedback for the available grip reserves. It's also too restrained when it comes to braking.

Summary: Its predecessors could always be given the "home circuit" medal because of their outstanding handling. The Sport Attack 4 doesn't want to continue this tradition. All in all, the Conti is positioning itself as a solid all-rounder.

MOTORRAD

Rating: Good



Dunlop Sportsmart TT

Weight: Front 4.6 kg, rear 7.1 kg
Country of production: France
Info/approvals: Goodyear Dunlop Tires, Tel. 0 61 81/68 01, www.dunlop.de

EVALUATION

Highway: In cool temperatures, the Sportsmart TT needs to be warmed up gently. But then it delivers impressive agility and handling, can manage turns with low steering forces and boasts a solid grip with good feedback. The stability is top notch, even when braking at an angle, the righting moment is acceptably low.

Racetrack (driven with inflation pressure recommendation front/rear 2.4/2.5 bar): The Dunlop provides rather average feedback in terms of grip when new/cold and handles turns a bit sluggishly. Only when it has been brought up to temperature does the Sportsmart TT, which is geared to track days, come into its own. Then it can be thrown from one lean angle to the next with stability, precision and agility.

Wet test: A quickly spinning rear wheel indicates a lot of slippage and little grip. Early skids don't build up a high level of confidence in lean angles, either.

Summary: Speed is the name of the game for the Sportsmart TT. But with the proviso that the conditions should be as warm and dry as possible. The Dunlop must be carefully warmed up for it to deliver (powerfully).

MOTORRAD

Rating: Good



Metzeler Sportec M9 RR

Weight: Front 4.4 kg, rear 6.8 kg
Country of production: Germany
Info/approvals: Pirelli Germany, Tel. 0 89/14 90 83 02, www.metzelermoto.de

EVALUATION

Highway: The M9 RR manages the balancing act between extreme sportiness and excellent everyday use almost to perfection. Right off the bat, it delivers an impressively firm grip and good feedback on the highway, and it also handles bends neutrally. Its handling is not quite as outstanding as that of its rivals from Bridgestone and Michelin, but it is still remarkably good.

Racetrack (driven with inflation pressure recommendation front/rear 2.5/2.5 bar): The M9 RR manages to impress us with the second-best lap time, delivering a solid grip with excellent directional accuracy. In terms of agility and handling, it is somewhat more restrained than the S 22 and Sportsmart TT. In return, it comes out of fast bends with perfect stability!

Wet test: The best time on the wet test track proves that the M9 RR builds up phenomenal grip in the rain. Its feedback is great, the limit range makes it very easy to gauge!

Summary: The successor to the already "very good" M7 RR has had an excellent debut in the 2021 sports tyre test. All in all, its balanced mix of everyday use and sport makes the M9 RR a Grade-A recommendation for any day.

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Rating: Very good



Michelin Power 5

Weight: Front 4.3 kg, rear 5.8 kg
Country of production: Spain
Info/approvals: Michelin Reifenwerke, Tel. 07 21/5 30 39 18, motorrad.michelin.de

EVALUATION

Highway: More than on the track, the Power No. 5 really comes into its own on the highway. It has impressive agility and is the tyre with the best handling in this comparison. The feedback for its grip reserves is also above average, even in cold temperatures it remains incredibly easy to evaluate. Other plus points: the neutrality and almost no righting moment when braking in a lean angle.

Racetrack (driven with inflation pressure recommendation front/rear 2.1/1.9 bar): Despite its suitability for everyday use, the Power also refuses to yield on the racetrack. It has very good feedback, maximum absorbance, and it handles lean angles with extreme ease. Only at very racy speeds does it fail to deliver the stability of its rivals.

Wet test: Beautifully designed limit range, excellent grip reserves when accelerating and in lean angles – the Power 5 loves rain. Shortest braking distance in the test! Any more questions?

Summary: With the Power 5, Michelin is continuing its tradition of producing the best highway tyres for superbikes and the like in all weather conditions. And even when it comes to track days, the Michelin can keep up for a long time.

MOTORRAD

Rating: Very good



Pirelli Diablo Rosso Corsa II

Weight: Front 4.4 kg, rear 6.6 kg
Country of production: Germany
Info/approvals: Pirelli Germany, Tel. 0 89/14 90 83 02, www.pirelli.de

EVALUATION

Highway: The lower the temperatures, the more run-in time the DRC II needs. But then it will impress you with its excellent grip and good feedback. Thanks to the two rubber compounds on the front tyre and three on the rear tyre, a good level of confidence is quickly established in its gripping power.

Racetrack (driven with inflation pressure recommendation front/rear 2.5/2.5 bar): The Pirelli already provides exemplary feedback for grip during warm-up, when it needs a bit of pressure. But then, its main strengths are its high cornering stability and solid grip with increasing cornering speed. It is not the most agile in the test field, but handles turns smoothly and neutrally. Exemplary stability when accelerating out of bends!

Wet test: Its similarity to the Metzeler from the same developer is noticeable: the DRC II is also a high-grip and easily predictable rain tyre.

Summary: With its unwavering stability, the DRC II is a textbook supersports tyre. It is just as convincing on track days as it is during a sporty turn on the highway. Penalties in the rain? Not really ...

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Rating: Very good

The MOTORRAD test

At the end of 2020 and with plenty of social distancing, we were able to stake out our tyre test course at the Goodyear-Dunlop site in Mireval (France). Besides the permanently irrigated wet test track, a highlight was the old "Carland" GP track, a perfectly curved roller coaster for the highway and racetrack tests. The MOTORRAD tyre evaluation focused on the following criteria:

Handling

The steering force required to lean the bike and maintain a line in S-shaped bends.

Handling on the limit*

This refers to how manageable the tyre is at its limit. Tests on wet and dry track.

Steering precision*

Steering precision in sections of varying speed with complex corner radii. This indicates whether the bike follows the desired line dictated by

the steering forces or if the rider has to correct.

Cornering stability

Tests wobble in (S-shaped) curves and on uneven surfaces. This is tested in different ways (solo/with pillion) and with a large lean when accelerating.

Directional stability

This is tested at high speed. Does the bike stay on course or is the ride spoiled by wobbling?

Grip/acceleration*

Refers to the cornering grip and transfer of force in corners of different speeds (wet/dry).

Grip/lean angle*

The cornering grip at maximum lean (wet/dry). This kind of balancing act is only possible in test conditions.

Righting moment

This term refers to how the bike rights itself when braking in a lean position. The rider has to counteract

this reaction by pushing on the inside end of the steering.

Inflation pressure**:

Highway/wet conditions (front/rear): 2.5/2.9 bar; racing track as specified above

The bike in our tyre test: Yamaha YZF-R1

While the 17-inch tyre dimensions 120/70 (front) and 180/55 (rear) are common amongst existing bikes, current superbikes now run on wide 190/55 tyres at the rear, and in some cases even 200/55. In line with original equipment requirements, tyre developers are increasingly tuning new models to these big dimensions. We deliberately chose a typical supersports bike, the current R1, so that the results of this comparison are as universal as possible.

Data

Water-cooled, four-cylinder straight engine, 998 cm³, 147.1 kW (200 hp) at 13,500 rpm, 112 Nm at 11,500 rpm, aluminium bridge frame, upside-down fork, ABS, traction control, seat height 835 mm, weight 201 kg, tank capacity 17 litres, top speed 299 km/h, 0–100 km/h in 3.3 sec; price 19,299 euros (no additional costs)



*The sections marked with an asterisk are applicable to motorbikes with a similar geometry to the Yamaha YZF-R1; **The individually stated and correspondingly lowered inflation pressure recommendations of the tyre manufacturers refer exclusively to use on the racetrack



SO WHO WILL WIN THE RACE?

Home circuit in sun and rain, cornering school, and track day ranking done and dusted. Let's wave the final flag, count up the points and lick our wounds.

The good news first: Bandages and plaster casts remain in the cupboard, and the camber spare parts brought along as a precaution can go back on the shelf. Test completed and no damage to man or machine despite a tricky balancing act at the limits – so far, thumbs up!

A second thumbs up goes to the performance of the current generation of sports tyres. It should be mentioned again at this point that there is another type of tyre on top of these for pure track day use – said racing tyres, some with, some without road approval.

But a trip to the racetrack is feasible even with the six pairings from this test. The results from the second round tell a clear story. Even with the 200 big-bang horsepower of the R1, they don't give way at higher speeds or when “ridden on the edge”, they remain stable and always easy to control and gauge. But what is probably much more important is that, despite this tuning, the essential everyday virtues don't fall by the wayside.

Because let's be honest – most people will be riding their double and triple R's or power naked on highways and alpine

passes, or will sometimes put in some speed on the track. Stretches of bad weather are, of course, a part of it.

Bridgestone's fabulous S 22 offers the best mix of all worlds and retains its 2019 test title. The two kings of the rain, the Metzeler M9 RR and the Michelin Power 5, are close behind as newcomers.

And now? You can step on the gas with confidence – grab the flag!



Big tyre test technology analysis, part 3: What makes tyres endurance performers without them losing dynamics?

**In the next issue:
Mileage versus grip**

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Final evaluation

	Highway	Racetrack	Wet conditions	Total	MOTORRAD -Rating*
Maximum score	100	100	100	300	
Bridgestone Battlax S 22	94	95	89	278	Very good
Metzeler Sportec M9 RR	91	91	93	275	Very good
Michelin Power 5	94	88	93	275	Very good
Pirelli Diablo Rosso Corsa II	91	93	88	272	Very good
Continental Sport Attack 4	90	82	79	251	Good
Dunlop Sportsmart TT	86	91	65	242	Good

*300 to 271 points = very good; 270 to 241 points = good; 240 to 211 points = satisfactory; 210 to 181 points = adequate; 180 to 151 points = insufficient; 150 bis 0 = poor