



Technology made in Germany.

The constant strive for perfection drives our engineers and developers to exceptional new heights in achievements time and time again.

This gives rise to ground-breaking developments which are continually incorporated into our products and motivates our specialists to continue to develop pioneering "Made in Germany" technologies and innovations. This is all with one clear and simple goal in mind; to create the optimal tyres for every use.



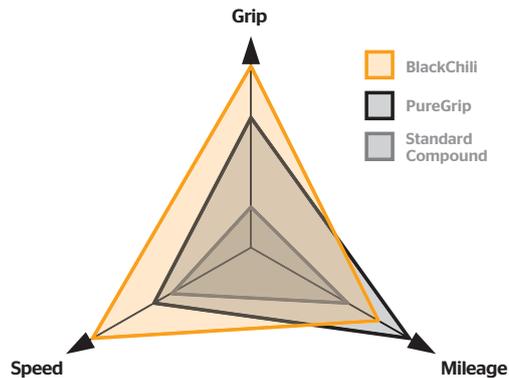
Deutsche Technik in detail.



BlackChili Compound - it's all about how you mix it

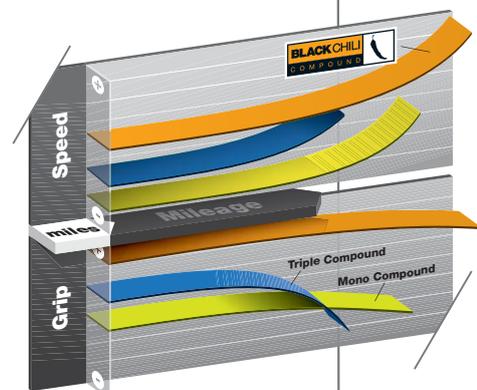
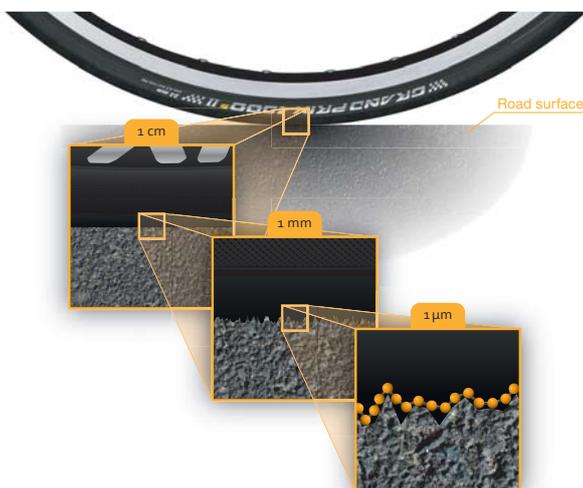
In the research and development laboratories for Continental bicycle tyres in Korbach, Germany, the staff and engineers have been looking for the solution to one of the fundamental problems of tyre construction: The running properties of the rubber compound of a tyre are largely determined by three interacting factors: static friction [grip], rolling resistance and mileage. The dilemma is that you improve one of these factors, and in turn, worsen at least one other factor. A tyre with maximum grip wears out faster and rolls slower. If one makes the tyre faster or more durable, then this in turn reduces grip. With the then current highest standard of compound technology, the Activated Silica Compound having already reached a very high standard of compromise, our developers wanted to take compounding to an even higher level. This led them to venture into new territory, exploring new ways so that in 2005 they made a breakthrough in mixing technology, the first steps to what is now known as BlackChili. This revolutionary compound is based on the latest findings on polymer and other raw material research.

For BlackChili we refine newly developed synthetic rubbers with natural rubber with the proven high-performance tread compound. We use these rubbers with special nanometric carbon soot



particles, which are optimized in shape and surface properties for best uses for the intended tyre. BlackChili Compound reaches an unprecedented level of performance.

Tyres with BlackChili Compound reach an unprecedented level of performance. Compared to the previous best Activated Silica Compound, BlackChili tyres have 26% less rolling resistance, a 30% higher friction value [grip] and a 5% increase in mileage. BlackChili technology never stands still as it is continuously developed and tailored to the individual applications of new Continental tyres as they continue to be produced out of the Korbach factory. Whether on the road or mountain bike, speed and grip advantages are very noticeable. The complex compound technology is so sensitive that tyres with BlackChili Compound can only be produced exclusively in our German Korbach factory.



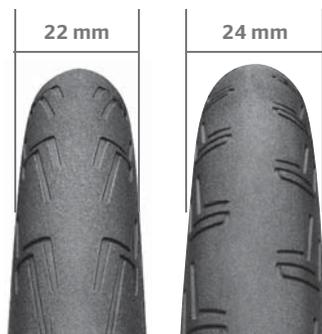


PureGrip Compound

Based on activated silica compounds, this technology was originally intended as an performance level compound, but after intensive development at our Korbach Research and Development Department Facility, an advanced new compound with outstanding grip and cross-country properties was developed. This new rubber mix, given the self explanatory name "PureGrip", is ranked just behind our BlackChili Compound and is being used in our performance products both in the road and mountain bike sectors. Whilst providing great grip, it is also long lasting and highly durable - both characteristics of Continental tyres, which are exclusively manufactured in the factory in Hefei [Asia].

TWI - The wear indicator

The wear rate and condition of any 'treaded' tyre like an MTB or touring model can be easily recognised by the obvious visual signs of wear to these tread lugs. Smooth or slick road tyres however do not offer any indication for their timely replacement. That is why Continental introduced wear indicators for smooth racing tyres back in 2004 on the Grand Prix 4000. The TWIs [Tread Wear Indicators] are on practically every Continental racing tyre these days. If the two small, circular depressions can no longer be seen in the middle of the tread, it is time for a replacement. This is an important aspect for rider safety as a worn tyres riding characteristics are no longer adequate. The wear indicators have also found their way into City trekking and e-bike tyres. The Top CONTACT II has a small crosspiece in the base of the tread groove which should show a minimum profile depth of at least 1.6 mm. You can recognise Continental bicycle tyres with TWIs by the corresponding marking on the sidewall.

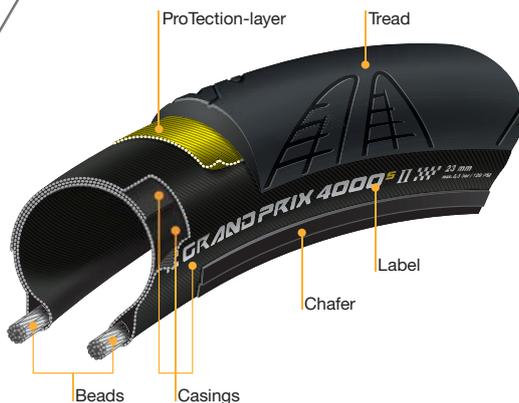


TirePositioning® System

With the TirePositioning® System, the last little bit of what is currently technically possible has been exploited. Motorcyclists have known for a long time: Different demands are made on a front tyre than on its rear counterpart. The narrower front tyre provides reduced wind resistance and better handling. An adhesion-optimised tread mixture supplies the necessary grip especially for wet cornering. The wide rear tyre offers better traction thanks to a larger contact area and at the same time more comfort. Thanks to the fast rolling, optimised tread mixture and the larger contact area on the rear tyre, wear is reduced. The result is a pioneering front tyre and rear tyre system for road racing; to be found in our GP Attack and Force combination. - New since 2013: The first tubulars featuring the TPS system!

Casing construction & TPI - the makeup of the basic tyre structure

The carcass is the basic structure for all tyres. The construction of the carcass, the material and the thickness of the thread depends on the demands that are placed on the tyre. Continental always works with high-quality carcasses made from nylon strings that are first woven and then rubberised. Nylon can be easily combined with rubber and is durable in all types of weather. The thickness of the thread gives the tyre its specific attributes. Thread thickness is recorded in TPI [threads per inch] and describes the number of threads per 2.54 cm [1 inch]. Fabrics used have 22 TPI, 28 TPI, 60 TPI and 110 TPI. Very fine material makes the tyre smoother and protects the carcass from punctures. Coarse fabric is more cut-resistant and makes the tyre more robust. The choice of fabric correlates to the purpose of use. The standard is a three-ply basic carcass. Additional breakers can be put under the tread in order to reinforce the tyre even more and to increase puncture protection. There are different types of breaker builds and materials for different uses whether they are highly elastic specialty rubber, such as our Plus brand or fabric breakers, such as PolyX and Vectran™ in our race tyres. You can see how the tyre is constructed in the tyre specification. Points listed are the number of layers, the sum of the TPI and the type of puncture protection. 3/180 + Vectran™ is equivalent to three layers of a 60 TPI fabric with an additional Vectran™ Breaker.



Grand Prix 4000 S II: 3/330 + Vectran™ Breaker is equivalent to: 3 Fabric plies/3*110 TPI + Vectran™ Breaker
 Contact: 3/180 + SafetySystem™ is equivalent to: 3 Fabric plies/3*60 TPI + SafetySystem Breaker
 Olympic: 2/220 is equivalent to: 2 plies [aramid in this case]/2*110 TPI

Technologies Mountain bike.

ProTection^{Apex}



Prepared for new challenges

The new discipline is called Enduro, which has been becoming increasingly popular for some time now. It is the technical challenge of rapid, hard descents and exhausting ascents. This requires the combination of a puncture protecting construction and fine rolling characteristics as well as excellent grip. The proven ProTection layer protects the tyre reliably against cuts and puncturing without significantly increasing the weight. The additional apex side wall stabilisation reliably protects the tyre against puncturing even if the tyre pressure is low. There is also the option of weight optimisation by driving the tyre together with the Conti RevSealant

"TubelessReady". With an anti-skidding BlackChili Compound tread optimum pairing is achieved when efficiently driving uphill and downhill puncture-free.

Technology:

BlackChili Compound
Tubeless Ready bead
Revolution Tubeless Ready base
Apex sidewall stabilisation
4/240 threads per inch [TPI]
Flag Sidewall design



ProTection



The hard way

Better than ever before, the new Continental ProTection casing. The extra all-round puncture protection layer renders the casings especially durable and insensitive to damage or penetration from foreign elements. Treads and sidewalls are equally protected, and are 25% lighter and offer 30% more puncture protection than their predecessors protected by DuraSkin®. Rolling resistance and absorption has also significantly improved. The new Made in Germany technology allows it to withstand even the hardest trails across the world. What's more: they're universally usable, are inspired by BlackChili Compound and have an

aesthetically pleasing sidewall design. The new Revolution Tubeless Ready Bead improves the application of Tubeless Ready Tyres. For optimal results with sealing for tubeless use and whilst riding, we recommend the application of the new Continental RevSealant.

Technology:

BlackChili Compound
Tubeless Ready bead
Revolution Tubeless Ready base
4/240 threads per inch [TPI]
Flag Sidewall design



RaceSport



Easy, fast, safe

Designed without compromise for use in mountain bike racing: The RaceSport casings combine consistent lightweight construction and noticeable superior puncture protection at the highest level. In cooperation with renowned professional mountain bikers we have created the perfect basis for competition tyres. Handmade in Germany, they offer rolling friction and puncture protection of World Cup quality. The structure makes the difference: a particularly fine and flexible nylon fabric with elaborately manufactured protecting rubber lining and universal

base. Together with the legendary BlackChili Compound, this is the ultimate combination for XC and Marathon Race.

Technology:

BlackChili Compound
Universal bead
3/180 threads per inch [TPI]
particularly robust tread and fabric rubber lining
Smooth side wall





Apex

The sidewalls of freeride and downhill tyres are subjected to extraordinarily high loads. A rubber profile between the carcass layers ensures stability. The Apex sits on the tyre bead and reinforces the sidewalls of the tyre. The tyre is thus protected from impact with the rim during rough rides over rocky ground. The tyre stays more upright when cornering. It does not bend over the sides of the rim when subjected to transverse loads, and always stays true to the course.

Apex



Reliable quality

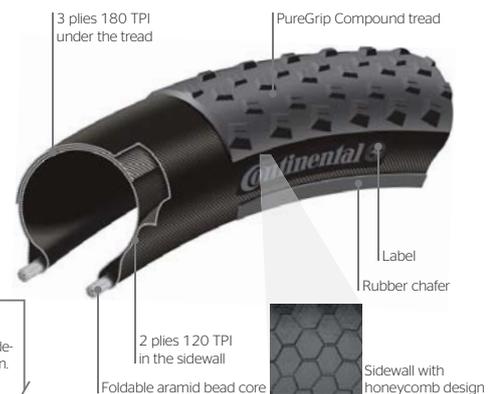
PureGrip is the compound technology of the new performance quality series. The name says it all. It stands for grip and durability. The extremely durable and strongly adhesive rubber compound will not let any cyclist down - one of the main goals in developing the compound produced in the new Continental factory in China. A robust 60 TPI Nylon casing paired with reliable rubber lining promises durability and allows for tubeless sealing of the tyre with the Conti RevoSealant "Tubeless Ready".

A strong aramid collapsing core provides firm connection to the rim. By using these highly advanced materials, the tyres are on the same level as competing Asian products and provide the ambitious amateur athlete with a favourable alternative made by Continental.

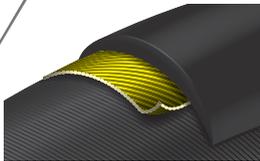


The Sport versions [wire bead] have sidewalls in mesh design.

Performance



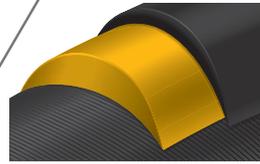
Puncture protection technology at a glance.



**Vectran™
BREAKER**

The benchmark in puncture protection

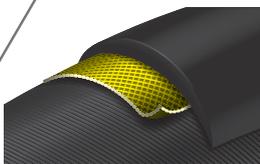
Vectran™ is a synthetically manufactured high-tech fibre from a natural model. Like spider silk, Vectran™ is a liquid-crystalline polymer [LCP]. Vectran™ is spun from the melted liquid polymer Vectra and processed further to a multi-strand thread. Spider silk like Vectran™ has an enormous tear resistance at a very low weight: Exactly the right properties to process into a premium Continental bicycle tyre as a puncture protection insert. A Vectran™ Breaker is lighter, more flexible and protects more effectively against cuts than the comparable nylon breaker. Vectran™ Breaker does not adversely affect the rolling resistance.



Plus+ 

Plus Breaker - Maximum safety

Between the tread and the carcass, a puncture protection of highly elastic special rubber is used. This practically impenetrable puncture protection successfully defies all types of foreign objects from getting to the inner tube below. Even a drawing pin cannot get through. Tyres with Plus Breaker can be seen in almost every segment nowadays: Whether racing cycles, MTB or city/trekking, the Plus Breaker guarantees maximum safety without negatively affecting the cycle properties of the tyre. The consistency of the breaker has been adjusted so that the tyre does not feel spongy when cornering. The Plus Breaker is true puncture protection. Please read the air pressure instructions!



PolyX Breaker®

Puncture-defence

With our PolyX Breaker®, we bring PKW know-how to the bicycle tyre segment: Polyester has been used successfully for years in car tyres and been tried and tested many times. The extremely resistant polyester fibre is woven tightly crosswise. In this way, a very high fabric density is reached which not only makes the Breaker more resistant to foreign objects but is also especially resistant to punctures. The rolling resistance is also not negatively affected by the PolyX Breaker®.



 SafetySystem

SafetySystem Breaker - Puncture protection with a system

The SafetySystem Breaker is made up of Kevlar-reinforced, high-strength nylon fabric. Puncture and cut-resistant but nevertheless light and flexible, the tyre adjusts quickly to the surface below. Without raising the weight or rolling resistance noticeably, it protects the carcass against foreign objects and contributes to a longer lifespan of the tyre. Tyres with the SafetySystem Breaker also provide good comfort properties.



 Safety+ 

SafetyPlus

For E-bikes, we have combined the SafetySystem Breaker with a highly elastic material. The result is an extremely puncture and cut resistant casing which, thanks to its high elasticity, gives especially low rolling resistance, saving battery power and the environment. The breaker also meets the demands of the higher speed e-bikes, of up to 50 km/h. The breaker is also adapted for the higher acceleration torque of e-bikes as well as the faster cornering speeds. The specialist tyre for fast e-bikes and rental bikes.



 NyTechBREAKER

NyTech Breaker

Our new NyTech Puncture ProTection has been developed based on the proven Continental SafetySystem Breaker. Its nylon fabric makes it resistant to punctures and cuts like Kevlar reinforced high strength fibres, but offers lower rolling resistance and reduced weight. The NyTech breaker sits between the SafetySystem and the PolyX Breaker® as a more effective puncture protection casing in the performance sector.



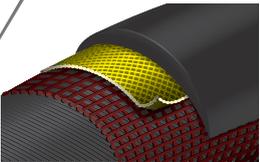
Puncture ProTecton

Puncture ProTecton - Worry-free throughout the day
 If you are looking for a reliable, value for money companion for every day use, choose a tyre with Puncture ProTecton Breaker. This robust Rubberbreaker combines with the rubber-reinforced sidewalls of the tyre to guarantee a high puncture and wear protection. No frills tyres with a clear focus and durability.



DuraSkin®

DuraSkin®
 Tyres with DuraSkin® sidewall protection have to be able to roll with the punches. They are used under the harshest conditions. On messenger bikes, the tyres skid along curbs; on touring bikes, they cross continents without wearing out. In racing cycling, they have to endure tough tests such as the Paris-Roubaix. The high-quality polyamide fabric protects the tyre casing against the worst conditions. These tyres stand out thanks to their brown sidewalls.



HARD SHELL PROTECTION

Hardshell - MORE is what you get
 Puncture protection and mileage are the strengths of Hardshell-ProTecton. A wider PolyX Breaker®, the specialist against punctures under the tread centre and shoulders provides for great reliability. The three-ply - each layer with 60 TPI - carcass covers the entire tyre and makes it a real bastion against urban detritus. The outer sidewalls of the tyre are reinforced with DuraSkin® fabric providing even more reliability due to the casing being so well protected. Hardshell tyres are the puncture-resistant flagship amongst racing tyres - produced exclusively in Germany.



Competition tyres

In serious competitions, sacrifices are sometimes made by riders looking for that extra 5%. Sometimes this means our GP Supersonic is used. It features a high quality racing carcass but with no puncture protection. In the race against the clock, weight and rolling resistance are the top priority - the cyclist has to gauge the high puncture risk to him/herself.

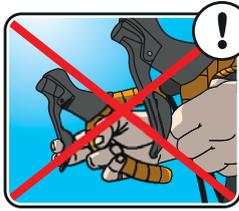
Breaker Technology in comparison



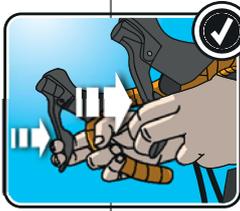
Deutsche Technik in detail.



Carbon rims



Incorrect brakes



Correct brakes



Warning - Hotspot

In the racing bike field, more and more aluminium or carbon closed rim profiles are being offered to use with tubeless or tubeless ready tyres. They no longer exhibit holes in the rim base. The manufacturer therefore does not use the rim band. The problem with that is that the resulting heat from the rim brakes reaches the tyre system unabatedly. Using carbon as the rim material has the disadvantage of low heat conductivity. During braking, heat builds up and can thermally strain tubes and tyres. Without the rim band, it can lead to sudden tube failures during longer braking [e.g. during downhill descents]. Latex tubes and lightweight design tubes below 70 grams can fail particularly quickly. Continental urgently recommends using an easy tape rim band even on aluminium and carbon rim closed rim profiles to protect from direct heat exposure and to reduce the risk of a tube failure. Moreover, we recommend using principally race tubes, especially in mountainous areas. We hereby advise against the use of latex or lightweight design tubes ["Light", "Supersonic"]. Continental also advises optimising riding technique. We recommend you always decelerate with both brakes in order to distribute the brake heat. Furthermore, long braking should be avoided. Pulsating braking allows the rim to cool down – a simple, but effective trick to get around the heat problem and to enjoy a safe descent.



Suitable for Dynamo

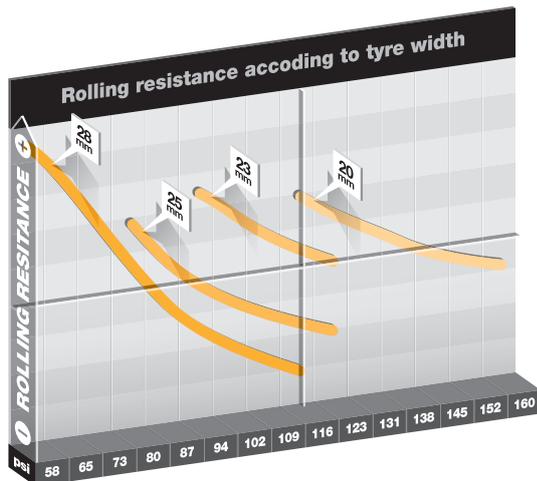
Dynamo - Preparation

Tyres which have the Dynamo symbol have a special profiling in the side wall and are especially suitable for use with rotating dynamos. The Dynamo thus runs quieter and does not slip in wet conditions. Depending on the tyre model, the dynamo knurl design can vary.

NOMINAL TYRE SECTION WIDTH (mm)	RIM SIZE	
	mm	mm
13	13C	14C
14	13C	14C
15	13C	14C
16	13C	14C
17	13C	14C
18	13C	14C
19	13C	14C
20	13C	14C
21	13C	14C
22	13C	14C
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93	13C	14C
94	13C	14C
95	13C	14C
96	13C	14C
97	13C	14C
98	13C	14C
99	13C	14C
100	13C	14C

Tyre-rim combination

For clarification on sizing, all Continental bicycle tyres are sized according to the ETRTO [European Tyre and Rim Technical Organisation] format: tyre width [mm] x tyre rim diameter [mm], for example 23-622. This is placed on the tyre sidewall. Alternative sizing such as 23x700C or 26 x 2.4 do not give clear information about the necessary rim size. That is why the internationally recognised ETRTO standard should always be used when in doubt. In general, Continental recommends that bicycle tyres only be mounted on hook edge type rims because this type of rim holds the tyre more securely, especially with air pressures exceeding 44 PSI. The measurements for hook edge rims, for example 13C-622, are given as; rim width in mm [size A], a "C" for crotchet ['hook' in English] and the rim bed diameter in mm [size D]. If the size information on older rims is not legible, the rim width can simply be measured using a calliper from one hook edge to the other. An overview of which rim widths fit which tyres is available from ETRTO.



Wide tyres go faster

For a long time, a 20 mm tyre with 160 PSI or more was considered the fastest tyre – regardless of how uncomfortable it is to cycle on this type of tyre. However, it is impressive that a 23 mm tyre at 123 PSI, a 25 mm tyre at 94 PSI and a 28 mm tyre at 80 PSI have the same rolling resistance as a 20 mm tyre at 160 PSI.

Yet at the same time, wide tyres offer more comfort and a broader range of applications – less air for bad roads and maximum pressure at fast time trials. The air pressure can also be reduced by 14 PSI in wet conditions to generate more grip. The trend towards wider wheel rims reflects the trend towards wider tyres – an optimum combination.



ECO

ECO – the energy saving tyres

The tyres with the Continental ECO logo benefit from over 100 years of experience in the development of mopeds and motorcycle tyres. Optimized and recommended for e-bikes at speeds of up to 25 km/h, they guarantee low rolling resistance and good puncture protection with their extra high quality construction. The durability has been studied on e-bikes to prevent early wear and tear due to the additional drive force. Some models, such as the Top CONTACT II, also have the ECE-R 75 test label which authorizes use on fast e-bikes up to 50 km/h.

Notes – Air pressure

Air pressure directly influences the handling, durability and the rolling resistance of a bicycle. Only with the right operational pressure can a tyre operate to its full potential. In addition to tyre volumes and cyclist or system weight, the purpose plays an important role here. Each Continental tyre has a recommended air pressure on the sidewall and maximum inflation pressure specification. If the air pressure is too low, wear increases, and the risk of puncture damage and tyre slipping increases. Ageing cracks can also occur. Air pressure which is too high makes the tyre feel rigid as its optimal elasticity is not realised. Traction, grip and rolling resistance may get worse. All bicycle tyre systems continually lose pressure. For this reason you should check your tyre pressure frequently. Touring bike and mountain bike riders should check their air pressure at least once a month; racing cyclists once a week. When using light and supersonic tubes, the air pressure should be checked before each ride.

Notes – Weight

Building light tyres is the declared goal of our developers and employees in our production facility. Occasionally however, there are small deviations from the weight information given in our catalogue. These result from tolerances in the tread thickness and rubberised material which cannot be avoided in the handwork of the manufacturing process. The weight information in the catalogue is based on the target weights which were determined in the pre-production series and is rechecked during the running production repeatedly. Deviations of up to 10% of the target weights are thus possible according to the design.