



FAQ – Speed

We receive a lot of calls and e-mails from skaters around the world who have questions to certain products of our speed skating collection or want to get some more detailed information about innovations and technologies we use for our equipment. We collected the most common questions and answered them the best we can. We are sure that most of your questions will be answered at your satisfaction. Please do not hesitate to contact us if you have any further question. Our well trained staff will be pleased to help you.

The Brands

Powerslide is THE specialist in speedskating world wide. You will find no other skate manufacturer offering such a wide range of shoes, frames, wheels or accessories like us. Under the Powerslide roof you can find the following brands:

POWERSLIDE
CORE RACING
MATTER Race Wheels

These 3 brands cover the race market for shoes, frames and wheels in each price category, which means high end products as well as mid range or low budget products which still offer highest quality standards. We are also proud to be able to offer the worlds fastest wheel collection. The last piece of the puzzle completes Sergio Mc Cargo from Argentina. He is a former world class speed skater who has made his beloved sport to his profession. The custom boots are made by excellent craftsmanship.

Powerslide

The brand with the best price-value-rating! Powerslide offers equipment with very good fitting and very good performance. It's a brand for rational thinking people who care about performance and price. The wide range of products covers many target groups. Beginner, clubs, kids, low budget skater and top athletes will find their favourite equipment at Powerslide. Powerslide is able to offer the full range of equipment from „Volkswagen“ to „Porsche“. World champions like for example Kalon Dobbin (NZN), Scott Arlidge (NZN), Bart Swings (BEL) or Sabine Berg (GER) and many other world class athletes skate on Powerslide, Core Racing and/or Matter equipment.

Core Racing

The high image brand right next to Powerslide for all those who prefer to drive “Ferrari” instead of “Porsche” or “Volkswagen” - to keep the example. Core Racing is a brand for the individualist, who wants to be different. It's a brand with a young and fresh image. New technologies, concepts and aterials will be used for products under the Core racing brand first before offering it under Powerslide. High end materials and material combinations separate Core Racing from Powerslide. Core Racing is focused on top athletes or those who can afford to spend more money. It's a brand for the extrovert type. Core Racing attaches great importance to innovations.



Matter Racing Wheels

Matter wheels celebrated their debut at the 2003 World Championships in Barquisimeto, Venezuela. Kalon Dobbin was the first time athlete who was world champion on Matter wheels. From that moment on, Matter could not be stopped anymore and from then on dominated the racing scene around the world. Matter is the world's No. 1 wheel.

Shell Constructions

We work with different shell constructions. In the following we will present you the 4 most important ones:

Smart Shell™



The new Smart Shell™ is based on the X-Torsion Bar™, which is described below. With the Smart Shell™ we even take it one step further now. Besides the reinforcements of the bottom of the shell we now also reinforce the ankle areas along the cuff of the shell. The result is an even better power transfer than already provided by shells featuring the X-Torsion Bar™. The Smart Shell™ can also be combined with our Clima Control System™ to provide air circulation to the inside of the boot for a better performance.

The Smart Shell™ is used on the following racing shoes:

Core Racing: Icon, Triple X²

X-Torsion Bar™



Reinforcements along the sole shaped like an „X“ provide additional strength and stiffness to the overall shell construction for a better power transfer. X-Torsion Bar™ improves the resistance against torsion and high pressure forces of boots featuring the 195mm mounting distance. Furthermore the overall weight of the shell has been reduced through the structural construction.

The X-Torsion Bar™ is used on the following racing shoes:

Powerslide: Double X

Hollow Tube Technology™



Carbonfiber is a very attractive material for good reasons. New materials can match the combination of aesthetics and performance that is associated with carbonfiber material. At Powerslide we enhance the performance of carbonfiber by making it lighter. The next step in the evolution of the development of Powerslide race shoes is the sandwich construction of carbon shells.

A sandwich construction is a structural panel concept consisting, in its simplest form, of two relatively thin, dense, high strength and parallel sheets of structural material with their faces bonded. The two sheets are separated by a relatively thick, lightweight core such as honeycomb or other structured core. To create stiff and lightweight race boots with a unique look is the basic idea of the sandwich construction.

The fundamental value of hollow constructions is weight reduction. Hollow tubes positioned between the two mounting blocks of the carbon shell are embedded in a carbonfiber matrix. The structured surface of the bottom adds extra strength to the overall shell construction and enables us to reduce the layup of the carbonfiber matrix. The result is a lighter shell construction.

The Hollow Tube Technology™ is used on the following inline (and ice) racing shoes:

Powerslide: PH9
Powerslide Ice: M1, M2
Core Racing Ice: Icon, Triple X²

Skeleton Concept™



Racing shoes featuring the Skeleton Concept have a unique shell construction. From technical standpoint this technology could only be used with composite materials. The shell has been cut out like a “Swiss Cheese”. Cut-outs are strategically placed to reduce weight, improve comfort and fit, which all transcends to greater product performance. One of the advantages of the Skeleton Concept™ is the improved fit – especially in the ankle area where most athletes have problems. Many speedskaters have problems with painful bone spurs, because of constant pressure of the shell. Boots that feature a Skeleton shell construction have a different cut of the shell which reduces the area where the pressure can result in the above mentioned problems. New manufacturing technologies allowed us to transfer the Skeleton Concept into carbonfiber technology. In this case we call it Skeleton-C Concept. The „C“ stays for Carbonfibre.

The following models are featuring the Skeleton Concept™:

Powerslide: R2, R2 Kids, R4

The following models are featuring the Skeleton-C Concept™:

Core Racing: Icon, Triple X²

The Materials (Shell)

Carbon Fiber

Carbon fiber is a material consisting of extremely thin fibers about 0.005–0.010 mm in diameter. Several thousand carbon fibers are twisted together to form a yarn, which may be used by itself or woven into a fabric. The density of carbon fiber is also considerably lower than the density of steel, making it ideal for applications requiring low weight. The properties of carbon fiber such as high tensile strength, low weight, and low thermal expansion make it very popular in the sports industry. However, it is relatively expensive when compared to similar materials such as fiberglass. The secret of the shells made for Powerslide or Core Racing shoes is not the material itself, but the material mix as well as the specific layout and direction of each individual layer of the shell. Powerslide and Core racing shells are made with 3K carbon fibre usually.

6K Carbon fiber



12000 fibers are bundled in one yarn, this means 4 times more compared to 3K carbon fiber that is usually used in the Powerslide and Core Racing speed shells. The shell construction is stronger and has a unique look.

The following models feature the 6K carbon fiber material:

Core Racing: Icon

Fiberglass

Fiberglass, is a material consisting of numerous extremely fine fibers of glass. Fiberglass has a higher density than carbon fiber and less tensile strength. Most products are usually made of a carbon-fiberglass mix in order to give the product some kind of flexibility which is usually needed. The fiber matrix and the layout for the specific product can vary a lot and depends on the application of the product itself.

Design Fiberglass



You want to be different? You want something special? Than this is the thing for you! Our new design fiberglass is an absolute eyecatcher. A unique look, never seen before.

The following models feature the design fiberglass:

Powerslide: Phuzion 9

Basalt Fiber



As a basic material, basalt is a black, alkaline extrusive rock. With only 5% higher density than the conventional glass fiber, basalt fiber offers in comparison a 15% higher tensile strength, higher compressive strength and rigidity. Basalt fibers are 100% natural and inert, e.g. they are classified as non-poisonous and non-carcinogenic = 100% greenline.

The following models feature the basaltfiber material:

Powerslide: Vision, Vision Junior, C8

Composites

Composite materials are also known as plastic materials. It is a material consisting of two or more related materials. The composite material has different material properties than its individual components. The characteristics and geometry of the components are important for the properties of the composites material. Powerslide used polymers, which are injected into molds for the shell construction of the R-series. The polymer matrix – we use nylon with 20% fiberglass - is the key factor for the stability of the “R-shell.”

The following models feature composite material:

Powerslide: R2, R2 Kids, R4, VI-RS, Vi-RS Junior, VI-SL



Carbonfiber vs. Synthetic Materials

There are a lot of prejudices against synthetic materials. But most of the people have no idea about synthetic materials in general, their potential or about the manufacturing of synthetic materials. The following list shows you the positive and negative aspects of both materials.

	Synthetic materials	Carbonfiber materials
Weight	++	++
Heat mouldable	O ¹⁾	++ ²⁾
Stiffness of material	++ ³⁾	++
Flexibility of material	+	+
Durability against breakage	++	++
Reproduction of same quality	++	++ ⁴⁾
Option for custom manufacturing	-	++
Design options	++	+ ⁵⁾
Options on design (cut) of shell	++	+ ⁵⁾
Variation of materials	++	+
Recycling of material (environment)	++	-
Pre-investment for production	-	++
Price of finished product	++	+

- 1) Composite materials can be heat moulded as well. The temperature is higher (100-120 degree Celsius) and the boot has to stay in the oven for a longer time (10-15 minutes). The moulding temperature for certain material mixes is even higher, which makes it impossible to heat mould the shells in the practice
- 2) Carbonfiber itself is not heat mouldable. You need thermo sheets.
Exception: Boots featuring the new SHMR Technology which is used in Powerslide and Core Racing shoes
- 3) The stiffness of composite materials depends on the materials and their matrix
- 4) New technologies in the manufacturing of carbon fiber materials also guarantee 100% accuracy in the production of the shells
- 5) New technologies allow to create new shell designs in carbon fiber as well
- 6)

Below you can find an overview which kind of material we use for the shell construction of our Powerslide and Core Racing collection.

Composite Schale	Carbon Schale ¹
Powerslide	Powerslide
R2, R2 Kids, R4 Vi-RS, Vi-RS Junior, VI-SL	Double X, Vision ² , Vision Junior ² , Infinity ³ , C8 ² , PH9 ²
Core Racing	Core Racing
	Vi-Pro, Icon, Triple X ² (all models made with full carbon)

¹ SHMR technology used in all models listed below

² shell made of Carbon/Fiberglass/Basalt Fibre

³ shell made of Carbon/Fiberglass



The Materials – Upper

PU-Nanoleather

PU-nanoleather upper material is soft yet very strong and resistant. This outstanding material wraps around the foot like a sock and provides the support and performance the modern skater is looking for.

The following models feature the microfiber nanomaterial:

Core Racing: all models

Powerslide: all racing shoe models

Bionic Bridge Design

It is a radical change in internal and external boot design. It was not invented by Powerslide, we just learned from our mother nature and architecture. Bridges are built to last and withstand the forces of nature. Hanging bridges are designed after the bionic constructions of spiders nets, holding up tons of weight and forces. This bionical construction has now been transferred of Powerslide skates. Reinforcement where needed, flex and freedom of movement in all other areas. A new sensation of wrap around fit provided by stitching lines, internal reinforcement bridges and internal longitudinal softfibers result in more speed per stride, with an unmatched comfort.

Design follows function at the very best, not just look and design. Pure performance, light weight construction and pure skating feeling.

The following models feature the Bionic Bridge Design:

Powerslide: Infinity

Core Racing: Icon, Triple X²

Lorino™

Lorino™ is a high tech microfiber material that we use in several racing shoes for the inner lining. The features are:

- durable
- breathable
- easy to clean
- light weight
- comfortable

Lorino™ is used in the following models:

Powerslide: Double X¹, Vision¹, Vision Junior¹, Infinity¹, C8¹, PH9¹, Vi-RS¹, Vi-RS Junior¹, Vi-SL¹, R2¹, R4¹

Core Racing: Vi Pro, Icon, Triple X²

¹ Lorino is used in the lining material around the toe box of the boots



Waterdrop Suprafiber (WDS)

Our new **Waterdrop Suprafiber** is an all new very special and sensitive Microfiber that we use for the inside lining. The fibers are extra long to give more comfort and due to their hollow design they are also able to transport moisture away from the skin. WDS is very soft to the skin with excellent and luxurious draping qualities. But what makes the real difference to conventional microfibers are the hollow dimples. They contain hollow fibers that create air circulation, providing an extra cooling effect. That means in the end less heat / sweat inside the shoe and a higher comfort. Furthermore it results in better blood circulation and less fatigue of the foot for an overall improvement of performance.

Waterdrop Suprafiber is used in the following models:

Powerslide: Double X¹, Vision¹, Vision Junior¹, Infinity¹, C8¹, PH9¹, Vi-RS¹, Vi-RS Junior¹,
Vi-SL¹, R2¹, R4¹

Core Racing: Vi Pro, Icon, Triple X²

¹ Lorino incl. WDS is used in the lining material around the toe box of the boots

Poron

Poron Urethans have been originally designed for medical purposes where custom form cushioning and comfort is most important. We chose a slow recovery urethane for our racing shoes – a unique custom contouring material. This material rebounds slowly when compressed, which results in a custom fit or contour during each use. The material will continue to return to its original shape when not in use. Features of Poron urethans are:

- shock absorbing to protect against impacts
- breathable to keep feet dry and cool
- maintains cushioning for maximum performance
- lightweight and flexible for continuous comfort

Poron – Performance for the Life of your shoes!

Poron is used in the following models:

Core Racing: Vi-Pro, Icon, Triple X²

Speedfoam

Speedfoam is another advanced material used in our racing shoes. This foam is soft, but not too soft to absorb energy yet very comfortable. Step in and feel well from the very first minute you wear the boot.

Speedfoam is used in the following models:

Powerslide: Double X, Vision, Vision Junior, Infinity, C8, PH9, Vi-RS, Vi-RS Junior, Vi-SL, R2,
R2 Kids, R4

Core Racing: Vi-Pro, Icon, Triple X²



What is the mounting distance of your boots?

The following chart will give you an overview of:

1. models divided by mounting distance
2. models divided by type of mounting block

165mm	195mm
Powerslide	Powerslide
All models with size smaller than 37 EU / 5,5 US, Vi-RS Junior, Vision Junior, R2 Kids, R2 ¹ , R4 ¹	R2, R4, Vi-RS, Vi-SL, Double X, Vision, Infinity, C8, PH9
Core Racing	Core Racing
All models with size smaller than 37 EU / 5,5 US	Vi Pro, Icon, Triple X ²

1 size 37 and 38 only. Bigger sizes feature 195mm mounting distance
 2 starting with size 37 EU / 5,5 US!

1-1	X-Slot
Powerslide	Powerslide
R2 Kids	R2, R4, Vi-RS, Vi-SL, Double X, Vision, Vision Junior, Infinity, C8, PH9
Core Racing	Core Racing
	Vi Pro, Icon, Triple X ²