WMMONDO

SYNTHETIC TRACK SURFACES





TOTAL CONTROL IN PRODUCTION, PRODUCT AND PERFORMANCE.

Production and control of the supply chain is one of our strongest points:

MONDO directly produces its own athletic tracks, sports floorings and synthetic turf systems. The facilities in Gallo d'Alba (Italy), Borja (Spain) and Foetz in Luxembourg are a unique concentration of technology and experience, where from selected raw materials, cutting-edge finished products are produced.

The raw materials are constantly controlled during the manufacturing process, and the final products are tested by independent laboratories that evaluate current environmental standard.





The quality of the air they breathe is just as important as the quality of the surface on which athletes train and compete:

MONDO's products satisfy the most stringent requirements for VOC emission, and have attained the prestigious GREENGUARD Gold Certification.



TOTAL COMMITMENT TO SUSTAINABILITY.



As part of Mondo's commitment to sustainability, Mondo's T&F products are specifically engineered to minimize environmental impact through all stages of the product's life, including production, use, and disposal. Mondo's T&F products guarantee emission of Volatile Organic Compounds (VOCs) in compliance with the most stringent air quality standards, providing an effective contribution against air pollution, which has an impact on athlete's health, well-

> Complies with the requirements of the State of California's Department of Public Health for the emission of **VOCs from Indoor Sources CALIFORNIA SECTION 01350**

Satisfies the limitations imposed by the German DIN 18035-6 Standard on the content of Heavy Metals and Dissolved Organic Carbon (DOC)

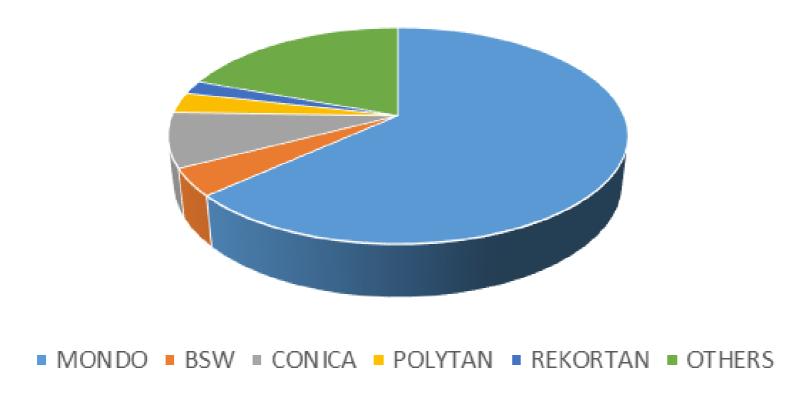


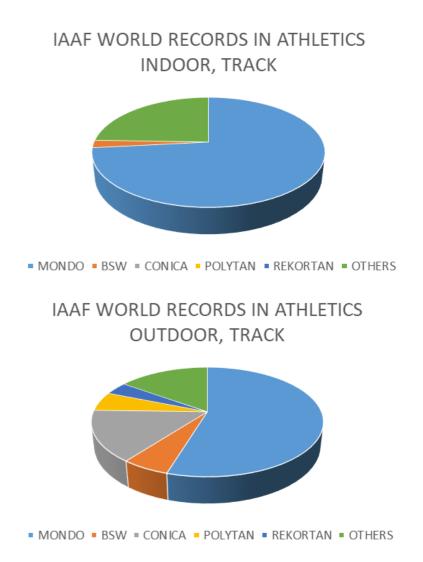


materials

TOTAL COMMITMENT TO ATHLETIC PERFORMANCE.

IAAF WORLD RECORDS IN ATHLETICS OUTDOOR + INDOOR, TRACK







OLYMPIC EXPERIENCE.

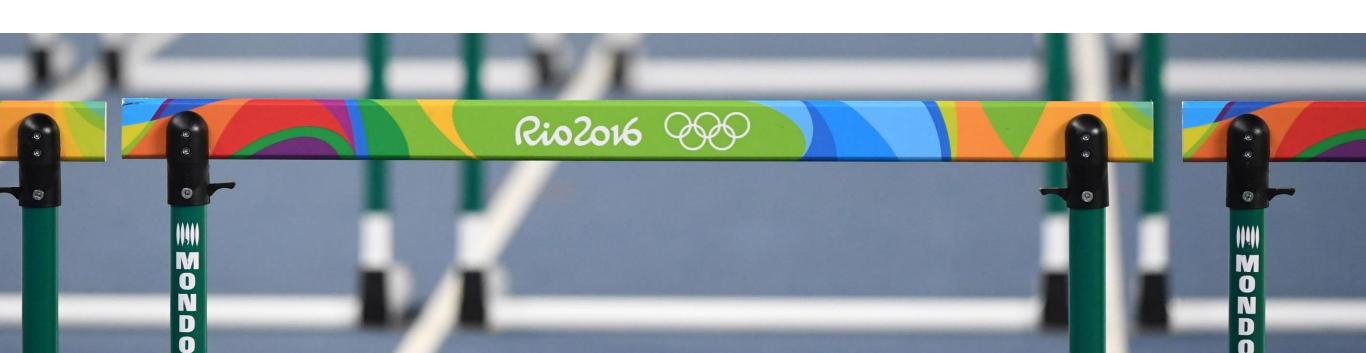
Respect for the athletes' health and environment, ease of installation and first-rate technical support are only some of the reasons Olympic Committees choose MONDO as an Official Supplier.

11 times supplier of the Olympic Games

MONTREAL 1976	SEUUL 1988	SYDNEY 2000	LUNDUN 2012
MOSCOW 1980	BARCELONA 1992	ATHENS 2004	RIO 2016

BEIJING 2008

LOS ANGELES 1984 ATLANTA 1996





UPCOMING TOP LEVEL COMPETITIONS ON MONDO



















SURFACES ADAPTED TO ALL LEVELS OF PERFORMANCE: THE ATHLETE IS ALWAYS IN THE FIRST PLACE

TOP COMPETITION

MONDOTRACK WS 13,5 mm

COMPETITION AND PROFESSIONAL TRAINING

SPORTFLEX SUPER X 720 13,5 mm

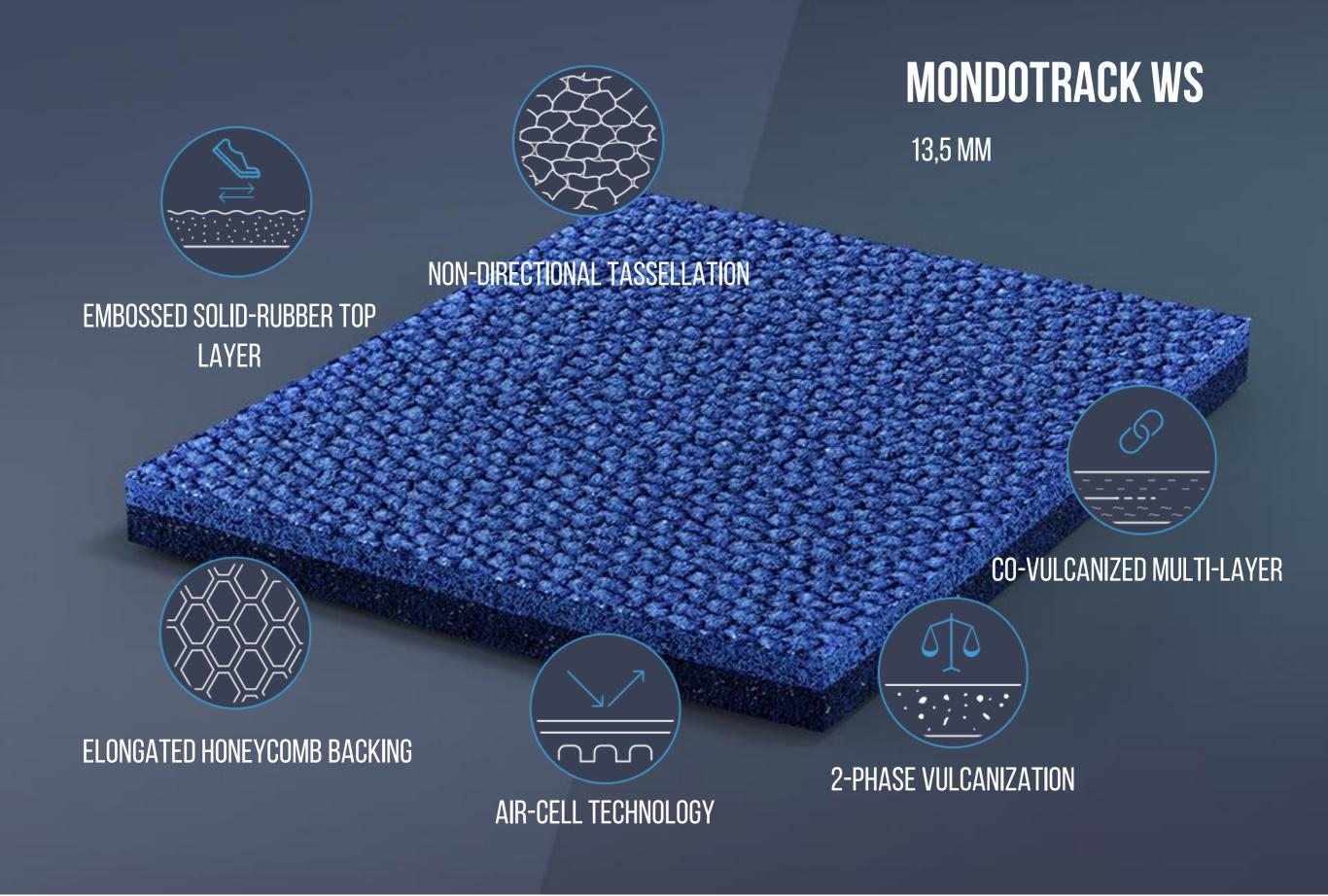
SCHOLASTIC, NON PROFESSIONAL AND RECREATIONAL

- SPORTFLEX SUPER X 720 K35
- SPORTFLEX SUPER X 720 K37

LEISURE

- MONDORUN
- SPORTFLEX M









CO-VULCANIZED MULTI-LAYER DUAL DUROMETER

Two different layers of solid rubber with their own formulations, vulcanized together to form a continuous, seamless piece of material.

The vulcanization process guarantees a molecular bond between the two layers, resulting in a continuous, seamless piece of material.

With guaranteed uniform thickness and technical characteristics over the entire track surface, Mondo's products eliminates the variable spots that can cause breaks in the athlete's rhythm.

In this way, Mondo's products help improving athletic performance and reducing fatigue and the risk of



EMBOSSED SOLID-RUBBER TOP LAYER

The top layer is made of solid vulcanized rubber. An embossed pattern of alternating elevations and depressions on the surface forms a complex, interconnected channel network that guarantees traction and efficient water drainage without the need for surface coatings or partially embedded rubber granules, which could become loose over time.





AIR-CELL TECHNOLOGY

The track's bottom layer incorporates an array of air-filled cavities that compress as the athlete's foot impacts the surface, absorbing impact force and vibrations, and converting the maximum amount of kinetic energy into stored energy. As the athlete's foot leaves the surface, the compressed air causes the cells to spring back to their original shape, acting like bowstrings and projecting the athlete up and forward.



ELONGATED HONEYCOMB BACKING

The supporting layer features an embossed pattern of ribbings that surround a uniform array of hexagon-shaped cavities that are uniquely elongated in the running direction. The resulting honeycomb-shaped geometric construction is deformable in three dimensions. Ribbings are spaced and positioned to facilitate the lateral deformation of the surface, expediting the rolling of the foot from the 5th metatarsus to the 1st metatarsus while providing continuous foot support and reducing lower-leg lateral movement. As a result, athlete contact with the surface is minimized, foot stability is enhanced, and movement efficiency is maximized with significant improvement in athletic comfort and performance. Protected under industrial design law.





2-PHASE VULCANIZATION

The top layer incorporates a three-dimensional network of purpose-made, pre-vulcanized deformable elements, with controlled composition and elasticity, that provides a significant increase in the elastic response of the surface and ensures greater uniformity of dynamic response over the whole track. This minimizes the need for athletes to make posture adjustments and reduces fatigue. It also provides greater stride length control, which is essential for athletes that must run to, and then takeoff from, a specific point, such as hurdlers, long and triple jumpers, pole vaulters and high jumpers.



NON-DIRECTIONAL TESSELLATION

The non-directional tessellation pattern enhances traction and surface drainage so athletes' shoe spikes do not need to penetrate the track surface to grip in dry or wet conditions.

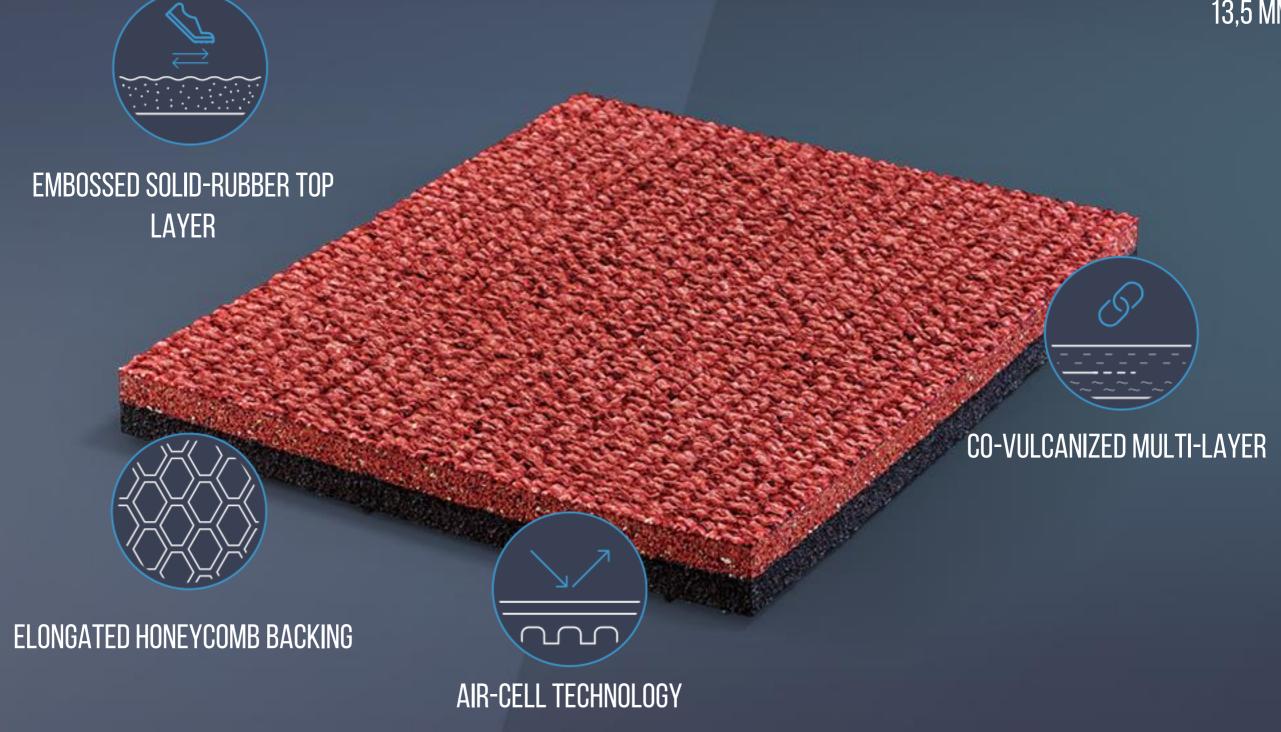
Therefore, athletes can use compression spikes, which boost athletic performance by maximizing surface deformation and reducing the time and energy that spike penetration and retraction require. The unique, non-directional tessellation pattern is protected under industrial design law.





SPORTFLEX SUPER X 720

13,5 MM









CO-VULCANIZED MULTI-LAYER





ELONGATED HONEYCOMB BACKING

EMBOSSED SOLID-RUBBER TOP

LAYER



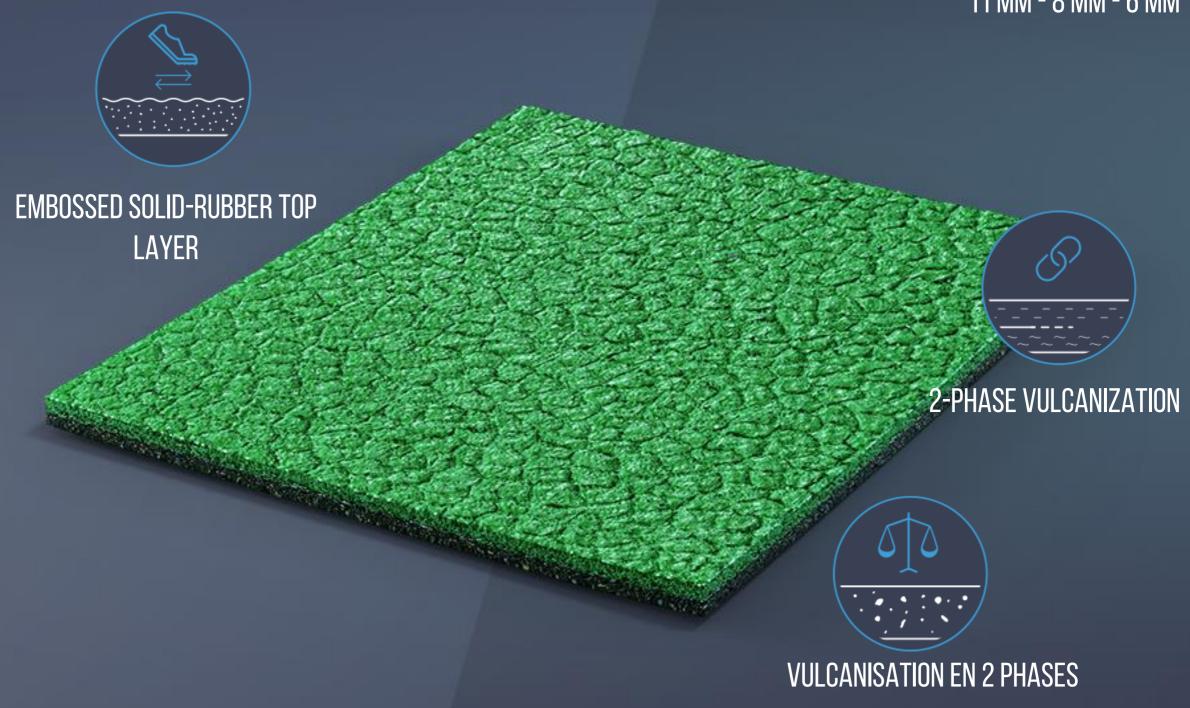






SPORTFLEX M

11 MM - 8 MM - 6 MM





WMMONDO

MODULTRACK AND STREET EVENT MODULES

SOLUTIONS TECHNIQUES









WMONDO

MONDO PRE-MANUFACTURED RUBBER-BASED SYSTEMS VS. POURED-IN-PLACE POLYURETHANE-BASED SYSTEMS

Mondo Pre-manufactured Systems



Totally pre-manufactured, factory-made product, consisting of two layers of rubber-based material with different physical properties, calendered and vulcanized together in order to create a seamless product. The top layer is texturized to guarantee water flow and traction. The bottom layer consists of a geometric construction, deformable in three dimensions, that incorporates air-filled cells. The air-filled cells compress when the foot hits the surface, absorbing impact force and vibrations, and spring back to their original shape when the foot leaves the surface, projecting the athlete up and forward. The product is glued to the sub-floor with 2-component thixotropic urethane adhesive. Vertical seams between adjacent rolls of material are pre-compressed and sealed with 2-component thixotropic urethane adhesive.



Poured-in-place Full Pour Systems



Totally on-site made product, consisting of three or more layers of different material, poured in place one above the other. The running surface consists of a layer of colored EPDM rubber granules manually broadcasted and partially embedded into a thin coat of 2-component self-leveling polyurethane binder. The bottom layers are made of colored EPDM or black SBR rubber granules from recycled tires, manually broadcasted and totally embedded into a thick layer of self-leveling 2-component polyurethane binder. The optional application of a topical aliphatic sealing lacquer will improve appearance and will help locking in place the EPDM rubber granules in place.

Poured-in-place Base Mat with Structural Spray



Totally on-site made product, consisting of a two layers of different materials, poured in place one above the other. The top layer consists of a mixture of colored EPDM rubber granules and single-component polyurethane binder, applied on site by spray. The bottom layer consists of a base mat made of black SBR rubber granules from recycled tires, coated with single-component polyurethane binder, laid on site with a paving machine that automatically adjusts the thickness of the mat in order to compensate any bump or depression of the sub-floor.

Poured-in-place Sandwich Systems



Totally on-site made product, consisting two layers of different materials, poured in place one above the other. The running surface consists of a layer of colored EPDM rubber granules manually broadcasted and partially embedded into a thin coat of 2-component self-leveling polyurethane binder. The bottom layer consists of a base mat made of black SBR rubber granules from recycled tires, coated with single-component polyurethane binder, laid on site with a paving machine that automatically adjusts the thickness of the mat in order to compensate any bump or depression of the sub-floor. The optional application of a topical aliphatic sealing lacquer will improve appearance and will help locking in place the EPDM rubber granules.

Semi-Prefabricated Sandwich Systems



Hybrid system consisting one layer of rubber and polyurethane-based materials, poured in place over a factory-made black mat. The running surface consists of a layer of colored EPDM rubber granules manually broadcasted and partially embedded into a thin coat of 2-component self-leveling polyurethane binder. The bottom layer consist of a factory-made base mat made of black SBR rubber granules from recycled tires, coated with single-component polyurethane binder. The black mat is glued to the sub-floor with 2-component thixotropic urethane adhesive. Vertical seams between adjacent rolls of material are sealed with 2-component thixotropic urethane adhesive. The optional application of a topical aliphatic sealing lacquer will improve appearance and will help locking in place the EPDM rubber granules.



	Mondo Pre-manufactured Rubber-based Systems	Poured-in-place Polyurethane-based Systems
Uniform Physical Properties	100% uniform, factory-made product.	Dependent on skill of applicator(s), varying climatic conditions during application, and levellness of sub-floor.
Uniform Thickness	100% uniform, factory-made product.	Dependent on skill of applicator(s) and on levelness of sub-floor. Self-leveling polyurethane componds tend to run downhill toward the inner laners and to accumulate in correspoiondance of any depression.
Uniform Appearance	100% uniform, factory-made product.	Non uniform as a consequence of manual broadcasting of EPDM rubber granules. The application of a topical aliphatic sealing lacquer will improve appearance, but will also reduce athletic performance and traction.
Uniform Athletic Performance	100% uniform, factory-made product.	Athletic performance will vary from spot to spot and from installation to installation. The properties of the installed product are dependent on skill of applicator(s), varying climatic conditions during application, and levellness of sub-floor.
Conformity to Specifications / IAAF on-site Certification	100% guaranteed, factory-made product.	Not guaranteed, as the properties of the installed product are dependent on skill of applicator(s), varying climatic conditions during application, and levellness of sub-floor.
Customizable	Products can be tailored within certain limits by system and thickness selection. Further customization can be achieved through the installation over a pre-manufactured shock pad. As all components are pre-manufactured in a factory-controlled environment, the installed products are guaranteed to meet the desired physical and dynamic properties.	Samples can be tailored within certain limits.



	Mondo Pre-manufactured Rubber-based Systems	Poured-in-place Polyurethane-based Systems
Air-cell technology	The air-filled cells that are hosted in the bottom layer effectively absorb harmful impacts and vibrations.	As a consequence of the installation process, polyurethane systems guarantee very low volume of voids between adjacent EPDM or SBR rubber granules.
Deformable Geometric Construction	Yes, thanks to Mondo's unique calendering moulding process.	No, polyurethane systems are solid by nature
Free of surface coatings or partially embedded rubber granules	The solid rubber top layer, totally free of surface coatings and loose granules, provides slip-resistance and traction to the point where spikes are not required to penetrate the track surface. Compression tiered spikes improve surface deformation and require the lesser effort to penetrate and retract.	The top layer typically consists of partially embedded rubber granules that have a tendency to get loose over time and that provide sufficient traction only with needle spikes that penetrate deep into the track surface, reducing surface deformation and requiring greater effort to penetrate and retract.
Free of Vertical Joints	Multiple vertical seams between adjacent rolls. Compression seams technique and the use of 2- component thixotropic polyurethane adhesives, in connection with the high tensile strength of the product, prevent vertical seams from opening over time	Williting joints between adjacent hours Cold
Free of Horizontal Joints	Seamless vulcanized construction. The vulcanization process guarantees molecular bond between the two layers. The end result is a continuous, seamless piece of material.	One or more horizontal joints between overlying layers, that might separate at the bond line.



	Mondo Pre-manufactured Rubber-based Systems	Poured-in-place Polyurethane-based Systems
Low VOC Emission	Mondo's track products meets or exceeds the most stringent European and North American requirements for emission of Volatile Organic Compounds (VOCs), such as the French VOC Label for Construction Products, and the North American Greenguard Certification for Chemical Emission of Indoor Products.	No, polyurethane products typically do not meet the minimum European and North American requirements for emission of VOCs.
High Fire Resistance	Mondo's track products are available in a special fire-resistant version, fire-rated Cfl-s1 in accordance with the Euroclass system, which dictates the best safeguards in the case of fire, including minimal toxicity.	No, polyurethane products typically do not meet the minimum Euriopean and North American requirements for fire-rating of indoor construction products.
Free of SBR Rubber Granules from Recycled Tires	The product does not incorporate any SBR rubber from recycled tires, potentially harmful to human health and to the environment. The product is classified as non-hazardous waste with EWC Code 170203.	The product might incorporate large quantities of SBR rubber from recycled tires, potentially harmful to human health and to the environment, and typically extremely expensive to dispose of.



	Mondo Pre-manufactured Rubber-based Systems	Poured-in-place Polyurethane-based Systems
Ease of installation in variable and/or adverse weather conditions	Yes, within certain temperature limits, with no consequences on the physical and dynamic properties of the installed product. The thin layer of polyurethane adhesive that is used for the installation is immediately covered with the synthetic surface, which works as a protective blanket throughout the curing process.	No. The product is mixed and applied on site, and will remain highly sensitive to moisture and temperature throughout the curing process, which lasts several days. During that period of time any significant change in ambient conditions will modify the performance of the installed product, causing remarkable variations of pysical properties.
Ease of Cleaning	The solid texturized rubber surface, free of coatings and surface granules, has a limited tendency to hold dirt. If needed, it can be effectively cleaned with a hose or with standard industrial cleaning equipment	The extremely coarse surface has a strong tendency to collect and hold dirt. The partially embedded rubber granules of the surface can get loose as a result of industrial cleaning operations.
Ease of Repairs	Damaged areas can be easily cut out and replaced with identical material from the attic stock provided by Mondo. The 2-component adhesive will cure within a maximum of 12 hours, causing negligible facility downtime.	Damaged areas can be cut out and replaced with new material mixed and poured on site. However the resulting patch is never flush with the surrounding surface and will not guarantee the same physical and dynamic properties. The patch will require several days to cure, causing remarkable facility downtime.
Ease of Resurfacing	A new layer of Mondo can be installed over old Mondo tracks. The old surface must first be sanded as much as needed to remove the top oxidized portion.	A new layer of Polyurethane can be installed over old polyurethane tracks. The old surface must first be sanded as much as needed to remove the top oxidized portion.



	Mondo Pre-manufactured Rubber-based Systems	Poured-in-place Polyurethane-based Systems
Will not deteriorate over time	All track surfaces deteriorate over time as a consequence of spike traffic and weathering. However, most athletic properties of Mondo's products are supplied by the air cells and by the deformable geometric construction of the bottom layer, which is protected from weathering and spike damage, guaranteing limited change of performance over the years.	All track surfaces deteriorate over time as a consequence of spike traffic andweathering. However, most athletic properties of polyurethane products are supplied by the top layer, which is directly exposed to weathering and spike damage, causing significant change of performance over the years.
Will not chalk over time	All rubber products have a tendency to deteriorate over time, creating a chalklike, powderly residue on the surface.	All rubber products have a tendency to deteriorate over time, creating a chalklike, powderly residue on the surface.
Will not revert over time	As the vulcanization process is irreversible, Mondo's vulcanized rubber tracks will never revert.	As the cathalization of urethane is reversible, polyurethane tracks might revert and become sticky and spongy over time.
Will not lose internal cohesion over time	As Mondo's products are made of solid vulcanized runbber, Mondo's tracks will never lose internal cohesion.	Sandwich systems might lose internal cohesion and/or became loose from the subfloor as a consequence of accumulation of water into the bottom layer.





"...The thickness of Mondo's products will vary substantially at bends as the material is stretched around the radius..."

To the contrary, when stretched around the radius the thickness of Mondo's products only varies by a maximum of \pm 100 μ , which has absolutely no influence on athletic performance.



"...Force reduction of Mondo's products depends on the consumption of adhesive that partly fills the holes on the backside of the mat..."

To the contrary, the adhesive is applied with a dented trowel that guarantees a consistent thickness of adhesive under the Mondo material.





"...Adhesion of polyurethane products to the base is always excellent, while that of Mondo's products depends on adhesive and weather during application and for some time after. ..."

Actually, both full-pour polyurethane systems and Mondo's products guarantee excellent adhesion only if applied to clean, dry substrates with ambient temperatures ≥10°C (50°F).

However bond of full-pour polyurethane systems depends on priming and weather conditions throughout the curing process, while that of Mondo's products requires no priming and it is independent from weather conditions during the curing process: the thin layer of polyurethane adhesive that is used for the installation is immediately covered with the synthetic surface, which works as a protective blanket throughout the curing process.

Adhesion of sandwich systems is always poor as it solely relies on single component binder that is intermixed with reground tire granules to create the base mat. Essentially, after a few years, the weight of the system is keeping it down.





"...Polyurethane tracks are seamless..."

To the contrary, polyurethane tracks always include multiple vertical joints between adjacent pours. Cold joints might mirror through the surface or split open over time.

Furthermore, unlike Mondo's vulcanized products, polyurethane products always incorporate one or more horizontal joints between overlying layers, that might separate at the bond line.



"...Polyurethane products can be easily resurfaced while Mondo's product can not..."

To the contrary, both full-pour polyurethane and Mondo's products can be resurfaced with one or more new layers of polyurethane or with one new layer of Mondo. The number of new layers of polyurethane (each approx. 3mm thick) or the thickness of the new layer of Mondo (available in 6, 8, 10mm) shall be selected based on the expected athletic performance).

Resurfacing of sandwich systems might be challenging and risky in the event of loss of internal cohesion or accumulation of water in the bottom layer.



"...Local repair of polyurethane products can be done easily, while that of Mondo's products cannot be done in an esthetical manner..."

To the contrary, damaged Mondo areas can be easily cut out and replaced with identical material from the attic stock provided by Mondo. The 2-component adhesive will cure within a maximum of 12 hours, causing negligible facility downtime

Damaged polyurethane areas can also be cut out and replaced with new material mixed and poured on site, but the resulting patch is never flush with the surrounding surface and will not guarantee the same physical and dynamic properties. The patch will require several days to cure, causing remarkable facility downtime.





"...More than 60% of all World Records presently ratified by the IAAF were set on a Mondo track. This is not because Mondo's products are faster than polyurethane products: it is simply because Mondo is a sponsor of the IAAF, and as such it is selected for all major international competitions..."

Actually the opposite applies: international meet organizers prefer Mondo because Mondo is faster, and nothing brings more prestige and visibility to an international track meet than fast times and World Records.

International meet organizers also prefer Mondo because Mondo's products are pre-manufactured and totally unaffected by climatic conditions during installation. As such, Mondo's products are the only ones that guarantee the IAAF on-site Class 1 facility certification, which is a standard requirement for major international competitions.

Numbers speak for themselves: 60% of all WR presently ratified by the IAAF were set on a Mondo track, but only a small percentage of all WR were set during an IAAF event, and only a small percentage of all IAAF events takes place on Mondo tracks. As an example, only 30% of the Diamond League events take place on a Mondo track. However 100% of all WR aver set during a Diamond League event were set on Mondo.

Why shall we spend extra money to purchase a Mondo track when many cheaper, IAAF-certified products are available?

ANSWER: The IAAF certification of track products is based on third party laboratory testing of samples that are fabricated by the manufacturers under no control by the IAAF or by the third party laboratory. Those samples do not necessarily replicate actual installed products. Furthermore the IAAF certification is only based on athletic performance, not on sustainability nor on durability.

You shall select a Mondo track:

- To preserve the health of your athletes and to protect the environment from potential contamination;
- To give your meet organizers a chance to obtain the highest levels of athletic performance during competition;
- To give your athletes and coaches a chance to practice on the same track surface that they will most likely compete on;
- To reduce the life cycle cost of your installation, as disposal of potentially hazardous waste is extremely expensive, and is set to become more expensive over the years.



Why shall I purchase a Mondo track instead of a COMPANY * track?

ANSWER: COMPANY is substantially larger than Mondo; nonetheless of all World Records presently ratified by the IAAF, ...** records were set on a COMPANY track, while over 60 records were set on a Mondo track.

To us, this simply means that COMPANY's tracks are not good for competition.

As professional athletes achieve their best results when practicing on the same surface they will compete on, the above also means to us that COMPANY's tracks are not good for professional training.

This said, we know that COMPANY's full-pour urethane systems are quite durable. If you live aside air quality, sustainability and life cycle cost, those full pour urethane systems might work well for scholastic, recreational and non-professional use.

We do not recommend COMPANY's sandwich systems, as those are largely overpriced when compared to their full-pour urethane systems or with our premanufactured systems.

* Polytan, Conica, BSW, Beynon-Target

** Polytan < 5; Conica < 10; BSW <5; Beynon none



I heard that a few Mondo tracks did harden prematurely, first becoming crusty and slippery, then eventually cracking and crumbling

ANSWER: Were those track of brick red color, and were they installed before the end of the year 2009?

Yes, they were

ANSWER: Have you noticed or heard the same about other Mondo colors or about brick red Mondo tracks manufactured after the year 2009?

No, I have not

ANSWER: This is perfectly in line with my knowledge of the problem. In mid 2009 we discovered that, in connection with extreme weather events, our brick red iron oxide pigment, traditionally the most UV stable of our pigments, could become instable, triggering a chain reaction that could lead to premature oxidation of the surface. In late 2009 we modified the original formulation of our brick red products in order to duplicate its resistance to extreme weather. No events of premature weathering were ever noticed on any brick red Mondo track manufactured after the year 2009, nor on any other color track ever manufactured by Mondo.



Were those brick red Mondo tracks that did suffer from extremeweather-related premature weathering replaced under Mondo's warranty?

ANSWER: No they were not, as the increased frequency and intensity of extreme weather events is a totally unexpected Act of God that we could not foresee at the time the original formulation of our brick red products was conceived.

However we offered to our Customers substantial discounts on the purchase of a new Mondo track, so as to fully compensate them for the loss of use of their original Mondo track.

