



## HOW AN ATHLETICS TRACK IS MADE

**Mondo Sport&Flooring Production Plant in Gallo d'Alba**

**Inauguration date:** 1948

**Indoor surface:** 40,000 sqm

**Outdoor area:** 15,000 sqm

(Italy)

THE SECRETS OF A CHAMPION-LEVEL TRACK, IN OTHER WORDS, A JOURNEY INTO THE MAKING OF MONDO SPORTS SURFACES.

**Bahamas, 25 May 2014.** In the **Queen Elizabeth Sports Centre**, the Thomas A. Robinson stadium is hosting the **IAAF World Relays**. This is the first edition of the world championships, but there have already been three world records and the best performances of the season in all ten events over the two days. Beneath their shirts, the athletes' hearts beat fast and their emotions are pushed to the hilt. Beneath their running shoes, **Mondo Super X 720** - the latest track from **Mondo**, once again wins over the athletics world.

But what lies behind this track? And how is it made? It's worth going right back to the start and retracing the steps that led to this amazing result.

### BEHIND THE SCENES OF A RECORD

"Behind a record-breaking track there are years of study, research and experience" says **Maurizio Stroppiana, General Manager of Mondo's Track & Field Division**.

"An athletics track is a product that needs top quality ingredients. Carefully selected raw materials, production checks throughout the manufacturing process to ensure the homogeneity of the "sheets" that make up the track, constant research that takes us beyond our limits every time". The success of a product like Mondo Super X 720 is determined by a whole orchestra of elements that only guarantee excellent results if they're skilfully played by the "hand" of a company with more than 60 years' experience to rely on. "This is a fully 'Made in Italy' track", says Stroppiana. "It was designed and produced in our Alba factory". And that's exactly where we went.

### THE PRODUCTION PLANT IN GALLO D'ALBA

The Mondo factory that created the record hat trick of the IAAF World Relays in the Bahamas lies a few kilometres from Alba, in the province of Cuneo. "But this is also where we created the track installed in London for the **2012 Olympic Games** and in **Beijing in 2008**", explains Maurizio



Stroppiana, as we approach the factory. It's a cool morning in June. We can see lorries coming and going; some of them are here to pick up the finished tracks that will be laid in various places around the world, while others are bringing in the **raw materials** that will be **checked in the labs** and prepared for processing. "That container holds the blocks of polymers" – explains Stroppiana in the huge **15,000 sqm** loading bay in front of the factory. – That's where it all begins".

Inside, the factory is a powerhouse of technology: "The whole production process is controlled automatically – says Stroppiana. – It's the best way to ensure optimum product uniformity and the highest levels of quality, drastically reducing any risk of human error".

The polymers that we saw being unloaded at the entrance enter this enormous structure measuring **40,000 sqm**, and rolls of track come out, ready to be laid. In between, there's a process that's only made possible by rubber processing skills and experience.

### THE MONDO LABS - A COCKTAIL OF EXPERIENCE

The beating heart of the Alba plant, **opened 65 years ago** and now counting **150 workers**, is its **Lab**. "Here, the first quality check on the raw materials is carried out" explains Maurizio Stroppiana. "When a track goes into production, we know perfectly what must emerge from our production line. To get the results we want though, everything has to be just right. That's why we check the raw materials straight away, to evaluate what is known as **Mooney viscosity**. It's a very important parameter because it conditions the **workability, dispersion and end characteristics of the track**".

After checking the quality of the raw materials, what happens next? "Next comes the second processing phase: the mixing". While he's speaking, Stroppiana takes us close to a machine: "This is the **Banbury** – he says. - It's like a **huge kneading machine**. Here the polymers are mixed with other materials like antioxidants, accelerants and additives. As you can see, we've got the "recipe" for making unbeatable tracks – he adds, smiling. – It's not enough just to have the raw materials; it takes know-how as well. We're able to **calibrate the exact quantity** of materials to make the right track for a specific place and a specific purpose. We can give the rubber **unparalleled physical and mechanical properties**. This is possible because we know every single processing phase inside out, and we always know precisely where to intervene".

### THE MATERIALS TAKE SHAPE

The mixing is done in two steps: in the first, the materials are mixed together; during the second, accelerants are added. The mixture then passes through the rollers to make it even, and it's separated out into several sheets. "We take a sheet from each mixture (always the same sheet, for example the first or the second...). The sheets of the various mixtures are then grouped together to create the batch that will form the raw material of the track. A system organised in this way guarantees a track with **no change in the colour tone**".

But what happens to the mixture obtained? We spoke of a "kneading machine" earlier on, so now it seems only natural to speak of "baking". That's more or less what happens during the **calendering phase** (when the final shape of the track is defined). "In order to be ready, our track has to be vulcanised. This is the fourth phase: after the quality check, the mixing and the calendering, **vulcanisation** completes the process. At this point we adjust the **degree of elasticity** which is fundamental for an athletics track" concludes Stroppiana.

### THE BIOMECHANICS OF THE TRACKS

"Throughout the processing, our tracks are subjected to continuous tests to assess their technical characteristics and elasticity response. The product only leaves our plants when we're sure it's exactly as we want it" explains Maurizio Stroppiana. There's a very specific reason for all this meticulousness when it comes to checking: the track will only allow athletes to reach their best possible results if all its characteristics correspond to what was indicated by our **R&D labs**. The study and research to create a winning track doesn't relate only to experience in rubber processing (which is no small thing in itself); it takes into consideration a whole range of **biomechanics studies** that "have led us to define, amongst other things, a specific shape for the **honeycomb cells underneath the surface** of a track".

### THE STUDIES AND RESEARCH

At the roots of a product like this lie the studies that Mondo R&D carries out, with the support of international **academic pools** and **professionals recognised worldwide**. The study behind these tracks involved people like **Mauro Testa**, a researcher specialised in biomechanics. And it's Mauro who tells us about the incredible work behind the definition of the shape of the honeycomb cells, that we spoke about earlier. "By analysing the rotating movement of the foot, - says Testa - we modified the shape of the cells in the sub-layer of the track, in contact with the asphalt. The concept was to develop a surface that would allow the deformation of the track according to the movement of the foot. We realised that a **hexagonal shape**, slightly elongated in the running direction, gave the athlete a feeling of **greater comfort** and also **improved his/her performance**".

### THE TECHNICAL OFFICE AND THE PLUS FACTORS OF A MONDO TRACK

The skilled processing of the rubber, and the creation of unique tracks, aren't the only plus factors of Mondo. The Alba company is able to **sustain the customer in every phase of system production**. Starting from the **design**, through to **installation, logistics** and **after-sales assistance**, the Mondo technical team knows all the standards and regulations in force, the characteristic features of the individual sports disciplines, and the requisites for top performance results.

"Our Technical Office is the perfect ally for architects and building firms – says Maurizio Stroppiana. – Our technicians collaborate with the designer,

laying on the table all the Mondo experience. There are so many aspects to be considered, and so many “tricks”, that it's impossible to be aware of all of them unless you've worked for years and years on hundreds of installations all over the world”.

### EXPERIENCE AND CERTIFICATIONS

The laying of an athletics track for international events isn't something you can just rustle up. “Mondo is one of the few companies worldwide that guarantees **continuous, complete assistance**. There are many factors that have to be assessed for an installation. To name just one: the prevailing winds. A track laid in a windy place has to take into account the force of the wind on the athlete, and the study for the correct layout of the rings must be absolutely precise. The same accuracy that's needed when the asphalt base is laid on the ground. In a structure that has to respect the regulations, tolerance levels are critical. Our support emerges here as well: a constant presence and help to **obtain all the certifications** needed for the track. We know how to do this; we've been doing it for years, forever. Our experience is something that nobody can ever imitate”.

Now we know what lies behind the many records won on Mondo tracks: the athletes' sweat and tears, of course, but also a unique product that's the perfect blend of biomechanical innovation and production technology. A product that contributes to their success and has allowed the Gallo d'Alba company to become a worldwide point of reference for athletics.











