

WATERPROOF BOOTS GIVE DECO A BOOST

In common with many other sports, a game of football can be won by a single moment of genius; last-minute free-kicks from specialists such as Andrea Pirlo, Ronaldinho, Juninho Pernambucano, Juan Román Riquelme and Deco are a classic example.

When this happens, fans and players alike always go nuts. That's partly because no one in this situation can ever really bring themselves to expect the unexpected; it's an extremely difficult skill, with even the greatest having a conversion rate of, maybe, one in five. Plus, if it does win the game, it's often worth serious money. In the world's most prestigious club competition, the UEFA Champions' League, each win in the group stages is worth around \$500,000 in bonus payments to the team.

Therefore, when the dead-ball specialist steps up to attempt to curl a free-kick over the wall and into the top corner, you have to hope his boot and, by extension, his foot are in the best possible condition. In the rain and snow of a winter's night, keeping feet, socks and boots warm and dry could be the difference between success and failure.

That's why, at the start of this season, footwear and apparel brand Umbro launched a new line of football boot, the Ultra SX, promising a breakthrough in exactly this area. The company persuaded Deco, star midfielder for FC Barcelona and for the Portuguese national team (he was born in Brazil but has a Portuguese passport), to be the famous face at the launch of the new boots.

Little did Deco know that, to emphasise the point that the Ultra SX boot was ideal for playing in wet conditions, Umbro had decided to submerge him in a

Barcelona and Portugal midfielder Deco is the star at the forefront of a new development to make football boots waterproof.



The Ultra SX is the first football boot to use Outdry. The technology makes the boot waterproof without compromising on breathability.



tank of water—on and off—for four hours and have him kick a specially treated ball around for the cameras.

It's pure exaggeration for the purposes of marketing, but Umbro's conversations with professional footballers have revealed that players really don't like playing with wet feet. In really rainy conditions, many of them will wear one pair of boots and socks for the warm-up, another for the first half of the game and a third set for the remaining 45 minutes.

The aim with the Ultra SX is to stop the feet from becoming cold and wet, which, as we have said already, can mean the difference between winning and losing. Umbro's belief is that the waterproof Ultra SX can make a real difference.

OLD TECHNOLOGY

The boots may be new, but the technology that makes them waterproof has been on the market for several years.

It's called Outdry and it's the invention of Italian firm Nextec. The company's research and development manager, Matteo Morlacchi, explains that Outdry has already made an impression on the activewear arena, having first gone into outdoor walking shoes that Gonella, another Italian company, brought to market three years ago. Other footwear providers in the same space, including Lafuma, have since moved to incorporate the technology in their shoes too.

It's now decades since Gore started making apparel

In wet weather, professional footballers often get through three sets of footwear, changing to a dry pair after the warm-up and at half-time in the game.

waterproof with its membrane technology. But, as Mr Morlacchi points out, the membrane was, at first, in the lining but was not an integrated part of the jackets or pants. "It was separate," he insists. "The garments were waterproof, but they were uncomfortable because water stayed in between the layers."

Gore moved on and, some years later, introduced two-layer and three-layer laminated fabrics, joining the membrane and the external fabric together, taping the ends to seal them. This method could not be applied to footwear as so much taping would be needed to seal all the seams.

"The state-of-the-art solution to this then became a kind of waterproof bootie," Mr Morlacchi continues. "It works in exactly the same way as clothing first did with Gore-Tex, with the waterproof bootie separated from the upper of the shoe. Water can penetrate it, leaving a cold feeling for the wearer and compromising breathability."

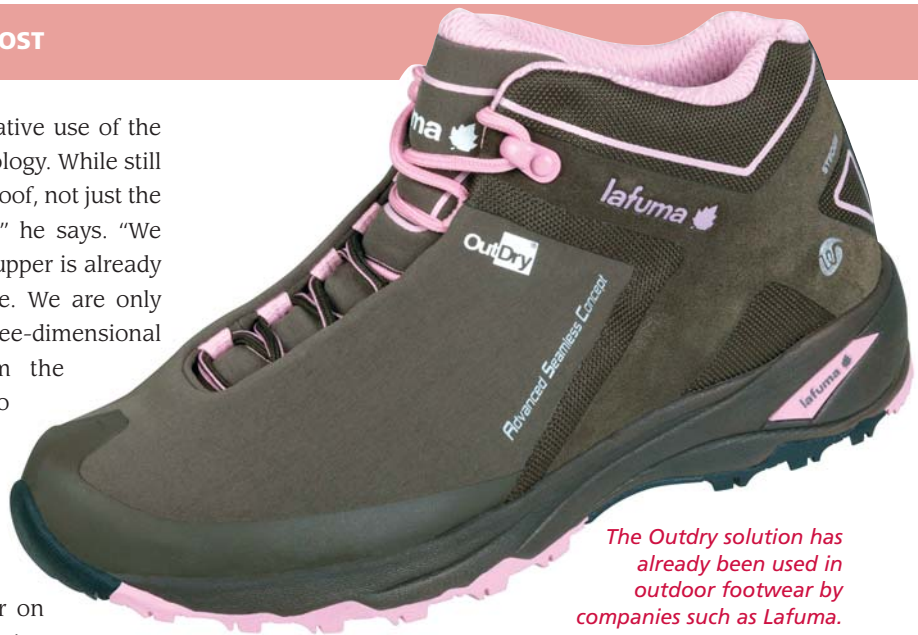
His other main criticism of this technology is that the bootie is flat, not fitted to the foot, which sometimes wrinkles or blisters up when you start to wear the shoe. In the context of football boots, the discomfort this would cause would be unbearable, even for amateur players. ➤

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Outdry, in contrast, is not just an alternative use of the membrane idea, but a whole different technology. While still breathable it makes the whole upper waterproof, not just the lining, Mr Morlacchi argues. "We laminate," he says. "We bond the membrane to the upper when the upper is already stitched and has a three-dimensional shape. We are only able to do this because we have a special three-dimensional pressing machine, adapted for us from the diaphragm-moulding machines they use to press three-dimensional parts in the aerospace industry."

The manufacturer can then complete the shoes using a regular lining application, finishing up with what he calls a "perfectly bonded" product that stops water on the surface of the upper, allowing no penetration.

The discussions between Umbro and Nextec over the possibility of using the idea in football boots began about a year ago. The sports company looked closely at the finished Gonella shoes and formed a clear idea of how the concept could work. It was already working on the Ultra SX product and was, therefore, able to laminate the Outdry membrane onto one of the prototypes and do some proper testing. These tests showed a big improvement on previous football-boot performance.



The Outdry solution has already been used in outdoor footwear by companies such as Lafuma.

I'M FEELING GOOD

The main area of improvement was in the feeling in the player's foot. Mr Morlacchi says it would have been impossible to offer a player the same level of sensitivity using a bootee, even if it was only one or two millimetres thick.

The Ultra SX boots are now available in the wider market, retailing at around \$350 a pair. Umbro was surprised at how quickly the first product-run sold out and

“...technically speaking...”

MEMBRANE WITH A DIFFERENCE

Outdry is an extremely thin resin membrane that can be three-dimensionally laminated to the back of an upper to provide an impenetrable barrier against water from the outside whilst, at the same time, allowing a high degree of moisture absorption and permeability from the inside. It is flexible and elastic with excellent adhesion properties under stress and is easily bonded to the light leather uppers used for football boots without affecting comfort or flexibility.

Unlike most membranes, transpiration occurs by chemical osmosis rather than micropores that may be deformed during laminating. Outdry's hydrophilic property also reduces condensation inside the boot, preventing perspiration saturation and consequent loss of body heat. A big attraction for shoemakers is that it can be laminated to the upper after the maximum amount of seaming is already complete.

The process involves placing the stitched upper inside-out over a shaped form. The membrane, in either one or two cut shapes with overlap allowances, is laid over the upper and the form enters the laminator. The upper then requires only one (back seam), or at most two, applications of heat-



Membrane is laminated to upper without any interspace

seal tape to finish. A conventional lining stitched round the throat and topline completes the assembly.

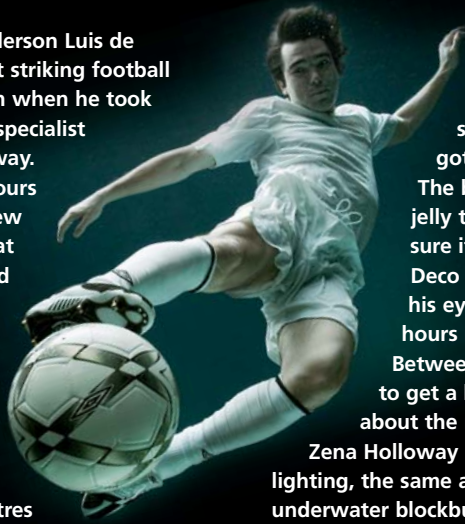
Design is of course important and, in addition, the reversed upper must fit tightly to the form in order to ensure maximum overall contact with the membrane. Nextec will assist at the design stage, so that the system can be fully optimised.

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A DAY WITH DECO

Barcelona and Portugal playmaker Anderson Luis de Souza (Deco) created some of the most striking football imagery ever at the start of this season when he took part in a photo-shoot for Umbro with specialist underwater photographer Zena Holloway. Deco flew to London and spent two hours showing off his skill in a completely new arena, the special 'Underwater Stage' at Pinewood film studios, usually reserved for big-screen productions such as the James Bond movies.

The idea to shoot Deco underwater was part of the launch of Umbro's Ultra SX boots, the first Umbro boots to feature Outdry waterproofing technology from Nextec. The tank is six metres deep and 20 metres



long. The water was heated to the temperature of a bath to make sure that the footballer did not suffer from the cold, and four trained safety divers were on hand in case he got into any trouble underwater.

The ball used in the shoot was filled with jelly to maintain neutral buoyancy, making sure it neither sank nor rose to the top. Deco used an eye-bath full of milk to stop his eyes from stinging after a total of two hours in the water.

Between each shot he returned to the surface to get a breather and to receive instructions about the next photo to be taken. Photographer

Zena Holloway used more than 50,000 watts of lighting, the same amount as film-makers used in underwater blockbusters such as Titanic and The Abyss.

quickly had to produce an extra 1000 pairs.

Deco's influence on this cannot be discounted, but he did, in fact, spend most of the start of this current season on the sidelines because of injury (unrelated to his antics in the tank). Umbro's belief is that demand has been high for a much more straightforward reason: this is a good idea.

The sports brand was aiming to sit down again with

Nextec during the month of January to discuss adding Outdry to other models. Matteo Morlacchi harbours no doubts about the relationship continuing, in spite of Nike's move to acquire Umbro, which is nearing completion.

"Our worry was that the development teams at the two brands might merge," he admits. "But it seems that they want to keep them distinct from one another." 🍕

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