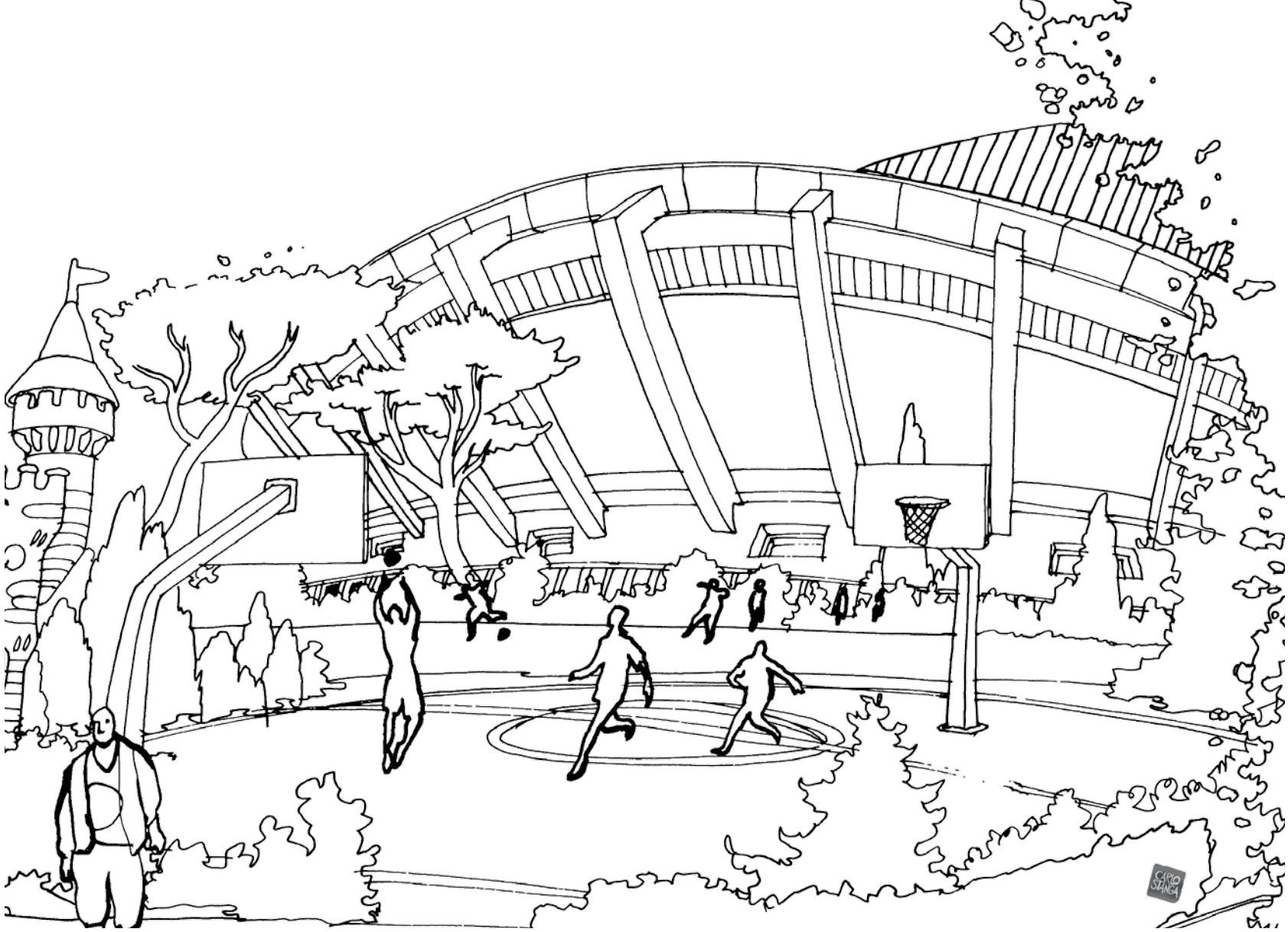

MAPEI®

SPORTS SYSTEM TECHNOLOGY

Edited by Mapei SpA Marketing department
Illustrations by Carlo Stanga

ARTIFICIAL GRASS SURFACES

...the **Mapesoil 100** solution

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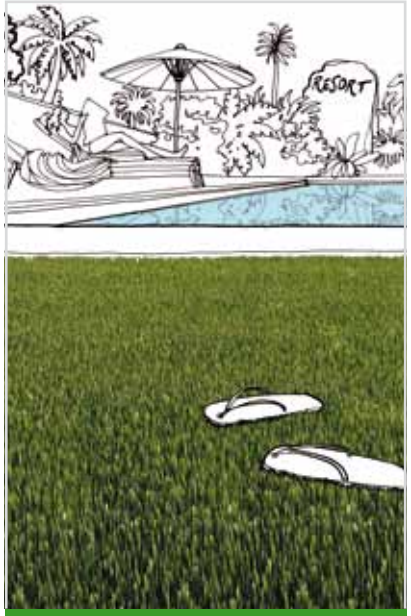
ARTIFICIAL GRASS SURFACES



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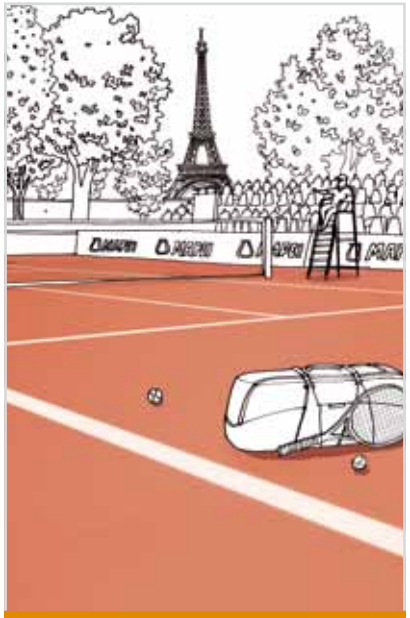

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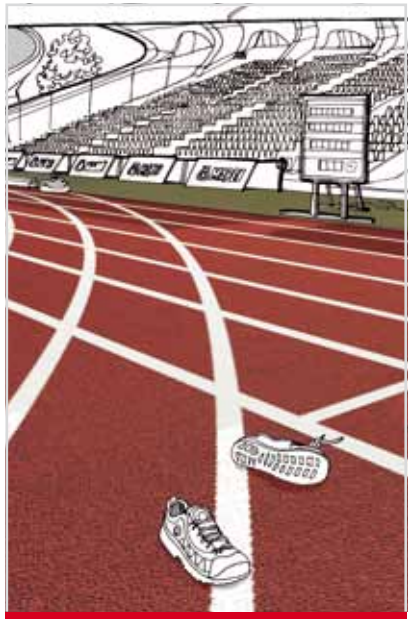

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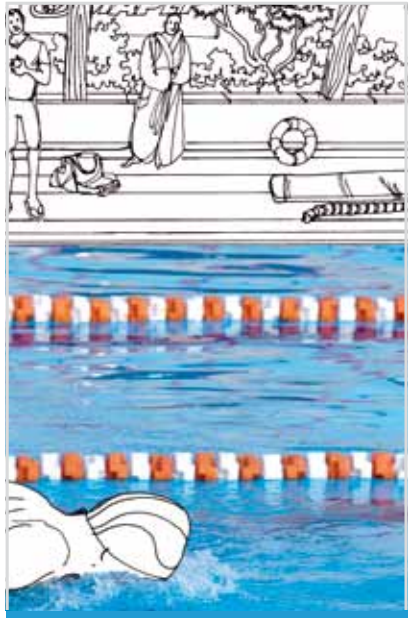

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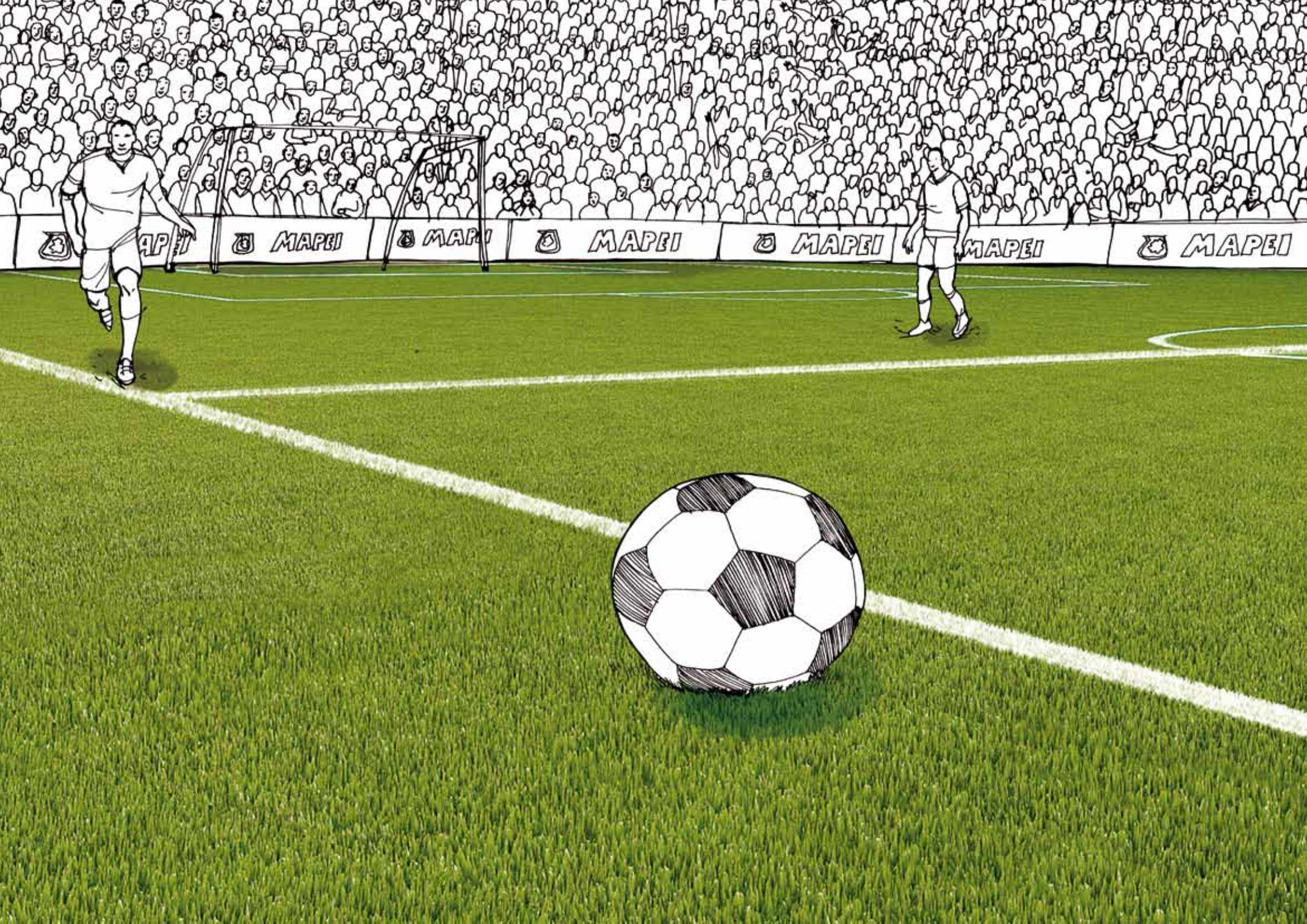
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ARTIFICIAL GRASS SURFACES

Artificial grass playing surfaces

Thanks to the considerable advantages a synthetic surface offers compared with natural grass and thanks to the new technological systems available, the number of playing surfaces made from the latest generation of synthetic grass has increased significantly over the last decade. Mapei has a complete system of products available for installers of synthetic grass which offer a valid contribution to the high quality standards of new playing fields, from products for consolidating the substrate and bonding the synthetic grass, right up to the addition of the stabilising infill granules.

Preparing substrates with Mapesoil 100

Mapei research has developed a system for stabilising and consolidating soil to make substrates for synthetic grass playing surfaces with horizontal drainage, **Mapesoil 100**, specifically developed for application in the playing fields sector. **Mapesoil 100** is a hydraulic-action, fibre-reinforced, powdered stabilising agent used to make substrates for synthetic grass playing fields through a process of soil stabilisation. The main areas of use for **Mapesoil 100** are:

- ❑ Substrates for synthetic grass playing surfaces with horizontal drainage;
- ❑ Consolidating and stabilising the substrate of existing playing surfaces (e.g. clay tennis courts);
- ❑ Maintenance work on existing synthetic grass playing fields by cold-recycling existing bitumen conglomerate substrates.

Mapesoil 100 is mixed with the existing soil and, by means of a consolidation process, modifies and improves the physical and mechanical properties of the material (aggregate and/or the soil) being stabilised, such as its workability, load-bearing capacity, durability and volumetric stability.
The main characteristics and advantages of **Mapesoil 100** are:

- ○ Easy to apply;
- ○ The thickness of the layer treated is reduced;
- ○ The existing substrate soil can be used;
- ○ Only requires the use of standard agricultural tools;
- ○ Substrates are quicker to prepare;
- ○ The old synthetic grass surface may be re-used;
- ○ Improves the efficiency of the playing field's horizontal drainage system;
- ○ Improved playing comfort and safer playing surface for athletes.

...the **Mapesoil 100** solution

MAPESOIL 100: the new eco-sustainable solution to prepare substrates

Thanks to its special formulation developed in the Mapei research laboratories, **Mapesoil 100** may also be used to stabilise waste material from maintenance work carried out on existing playing surfaces, which means costs associated with waste disposal are reduced, less energy is consumed and there is a lower impact on the environment.

1. Milled bitumen conglomerate. **Mapesoil 100** can be used to cold-recycle old bitumen conglomerate substrates. After milling, the material can be stabilised directly on site, thus avoiding costs associated with handling and disposing of special waste.
   Mapesoil 100 also makes the treated material inert: material treated with **Mapesoil 100** has passed the transfer in water test according to the local leaching test (Photo 1).

2. Clay playing surfaces. **Mapesoil 100** may be used to stabilise old clay tennis courts prior to installing the latest generation of synthetic grass with horizontal drainage.

3. Worn synthetic grass playing surfaces. **Mapesoil 100** allows the old synthetic grass surface to be re-used so it does not have to be disposed of. By means of a simple process which separates the stabilising infill granules and chops up the grass, the worn playing surface that needs to be replaced may be added to the mixture with **Mapesoil 100** and incorporated in the substrate for the new playing surface. All these operations can be carried out directly on site which means movement of the materials is reduced to a minimum (Photo 2).


photo 1

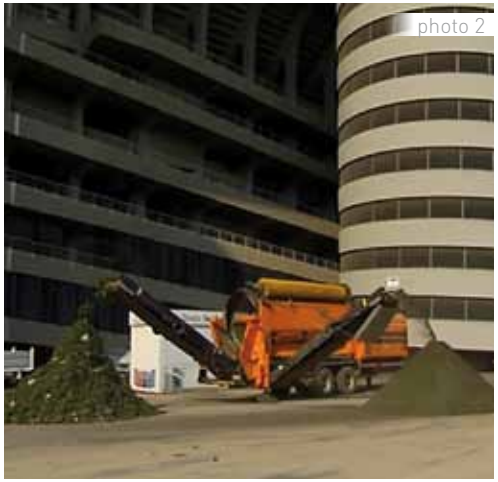


photo 2

ALBINOLEFFE U.S. SOCCER CLUB TRAINING GROUND - ZANICA, BERGAMO - ITALY

The new headquarters of AlbinoLeffe U.S. now covers an area of seven hectares, and is located between the towns of Zanica and Comun Nuovo. The sports centre is the result of a complete overhaul carried out in the last few years, which has included extending the dressing rooms, restructuring the office complex and creating a new layout for the main training pitch. A new training pitch was commissioned by the club in 2011, made using the latest generation of synthetic grass. For the substrate, the solution chosen consisted in stabilising the soil with **Mapesoil 100**, the latest generation in fibre-reinforced stabilising agents, while **Ultrabond Turf PU 1K** high performance adhesive was used to install the synthetic grass playing surface.

MEAZZA STADIUM - MILAN - ITALY

In the summer of 2012 the pitch at the Meazza Stadium was completely overhauled, and included both the playing area and the perimeter.
For the perimeter part of the pitch the latest generation of synthetic grass was used, while for the substrates, two innovative, eco-sustainable solutions developed in the Mapei R&D laboratories were adopted. Two types of substrate were prepared:

1. With horizontal drainage. The substrate for the synthetic grass was prepared by means of a stabilisation process using **Mapesoil 100**, and by adding the old, worn grass playing surface which had been chopped up beforehand.
   The aggregates treated with the **Mapesoil 100** had also been recycled.
2. With vertical drainage. The substrate for the artificial grass was prepared using **Mapesoil VD** high performance, high durability binder in combination with specially selected aggregates to guarantee good drainage of the substrate.

PIANCASTAGNAIO MUNICIPAL STADIUM - SIENA - ITALY

The Piancastagnaio Municipal Stadium was completely overhauled and the natural grass playing surface was replaced with the latest generation of synthetic grass. The work was carried out following a request from the Pianese ASD Sports Club, with the contribution of the same Sports Club. The substrate was prepared using **Mapesoil 100**, which played an important role in reaching the minimum mechanical performance levels specified for the project: every year the annual Palio di Piancastagnaio horse race is held on the pitch, and the playing surface and substrate are subjected to considerable stress.

THE "ROUNA" DUAL SOCCER/RUGBY PITCH - PROSECCO, TRIESTE - ITALY

This investment was strongly desired by the Organising Committee and was made possible thanks to the intervention of the Assessor for Sports for the Autonomous Friuli Venezia Giulia Region and the collaboration of the Trieste City Council, and marked the start of a complete overhaul of the "Prosecco Sport Centre". A playing field for soccer and rugby matches with a surface made using the latest generation of synthetic grass and horizontal drainage was made. The substrate was prepared by means of a stabilisation process using **Mapesoil 100**, which meets the technical and performance specifications of both Federations (Soccer and Rugby). The occasion chosen to inaugurate the pitch was the Egor 2012 (European Golden Oldies Rugby) event, an ideal opportunity for the "oldies" to promote the values of rugby amongst the younger generation.


RESORT

ARTIFICIAL GRASS SURFACES

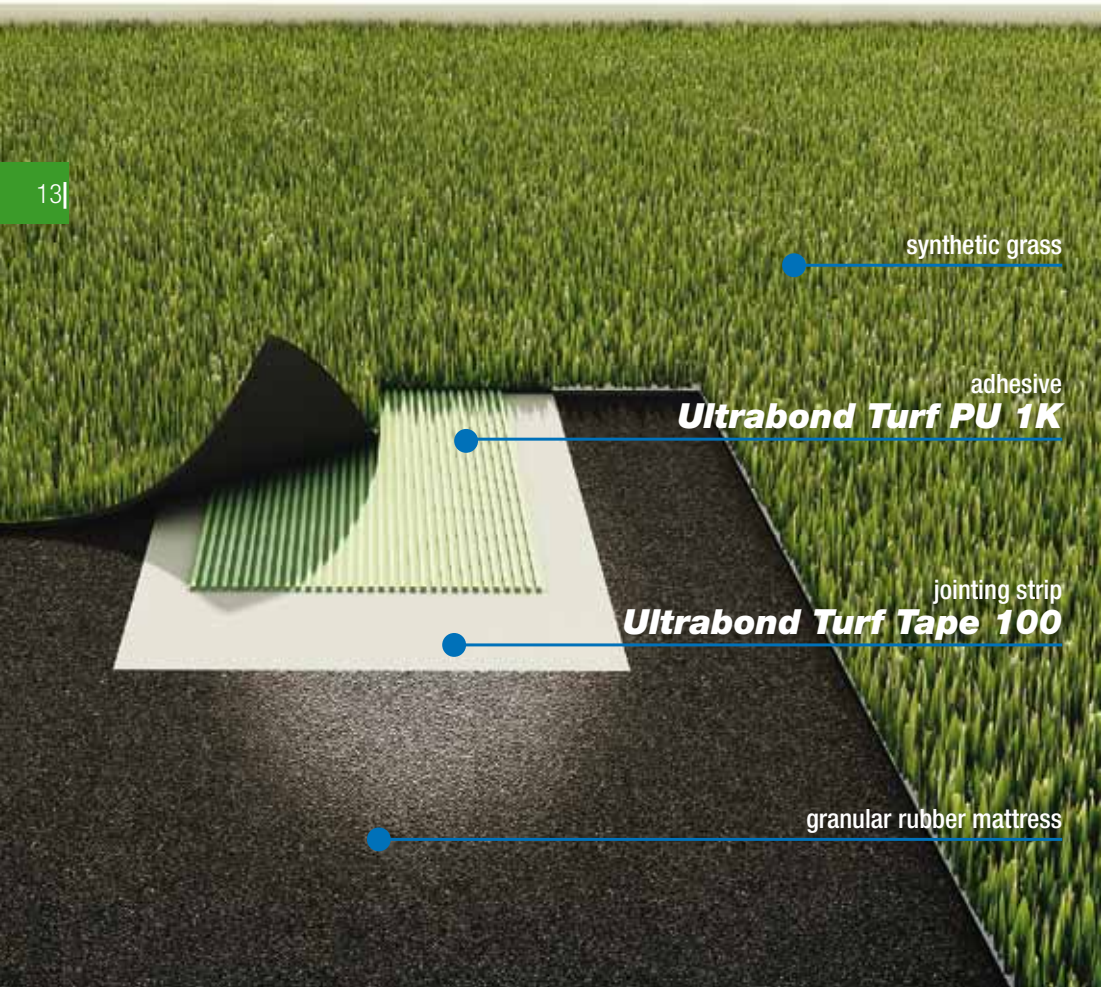
Installing synthetic grass with Ultrabond Turf System

Mapei has a complete range of products available for installing synthetic grass playing surfaces, the **Ultrabond Turf System**, which includes a jointing strip and a complete range of adhesives, chosen according to the installation conditions and the requirements of the installer of the grass.

- **Ultrabond Turf Tape 100**: jointing strip for bonding rolls of synthetic grass and the lines for marking out pitches for various sports.
- **Ultrabond Turf PU 2K**: two-component, solvent and water-free polyurethane adhesive with very low emission of volatile organic compounds (VOC) (certified EMICODE EC1 R Plus by the GEV Institut) for bonding synthetic grass surfaces. Particularly suitable for use at low temperatures and for users allergic to epoxy and epoxy-polyurethane products.
- **Ultrabond Turf PU 1K**: one-component polyurethane adhesive for bonding synthetic grass surfaces, ideal for users allergic to epoxy and epoxy-polyurethane products. Particularly suitable for use at low temperatures. Since this is a one-component, ready-to-use adhesive, no catalyser needs to be added which makes it particularly easy to use and there is no risk of incorrect mixing ratios.
- **Ultrabond Turf 2 Stars**: two-component, solvent and water-free polyurethane adhesive with very low emission of volatile organic compounds (VOC) (certified EMICODE EC1 R by the GEV Institut) for bonding synthetic grass surfaces. Particularly suitable for use at low temperatures and for users allergic to epoxy and epoxy-polyurethane products.

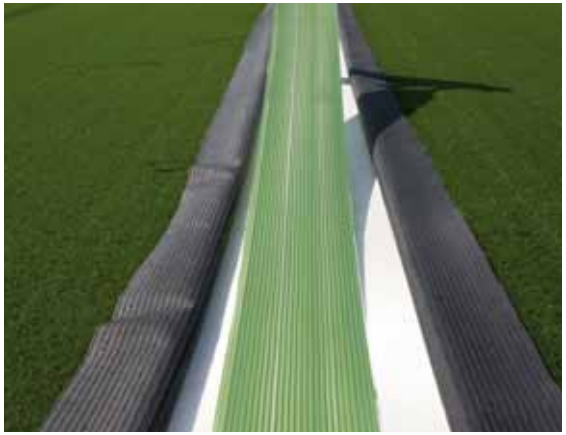
The main characteristics of the adhesives in the **Ultrabond Turf** range are:

- Excellent rib stability;
- May be used at low temperatures (as low as 0°C);
- Contain no water or solvents;
- Form an extremely tough film when hardened;
- Particularly suitable for users allergic to epoxy and epoxy-polyurethane products.



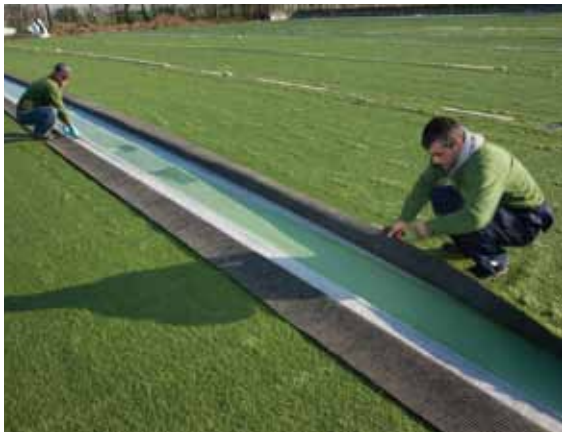
Ultrabond Turf PU 1K - TECHNICAL DATA (typical values)

Consistency:	creamy paste
Colour:	green
Density (g/cm³):	1.35
Brookfield viscosity (mPa·s):	45,000 ± 5,000 (23°C, rotor 7.50 rpm)
Application temperature range:	from 0°C to 35°C
Open time (formation of skin):	80-100 minutes
Set to foot traffic:	approximately 12 hours
Ready for service:	after 7 days
Shore A hardness (DIN 53505) (7 days at 23°C + 14 days at 50°C):	60
Elongation at failure (DIN 53504) (%) (7 days at 23°C + 14 days at 50°C):	280
Adhesion of Ultrabond Turf Tape 100 to synthetic grass [shear test according to EN 12228 (FIFA specifications)]:	- 1850 N (after 4 days at 23°C) - 2200 N (after 4 days at 23°C +14 days at 70°C in H_2O)
In service temperature range:	from -30°C to 80°C



ATALANTA CALCIO SOCCER CLUB TRAINING GROUND - ZINGONIA, BERGAMO - ITALY

The home of Atalanta at the Bortolotti Centre in Zingonia (Bergamo) has got a new appearance: from a brand new synthetic pitch to the covered stands where fans can follow training matches while sitting comfortably and sheltered from rain. On this occasion too, installation of the new synthetic grass playing surface at the training ground for the team from Bergamo included Mapei among the key players who supplied **Ultrabond Turf PU 2K**, a specialised two-component, solvent and water-free polyurethane adhesive with low emission of volatile organic compounds.



PARMA CALCIO SOCCER CLUB TRAINING GROUND - PARMA - ITALY

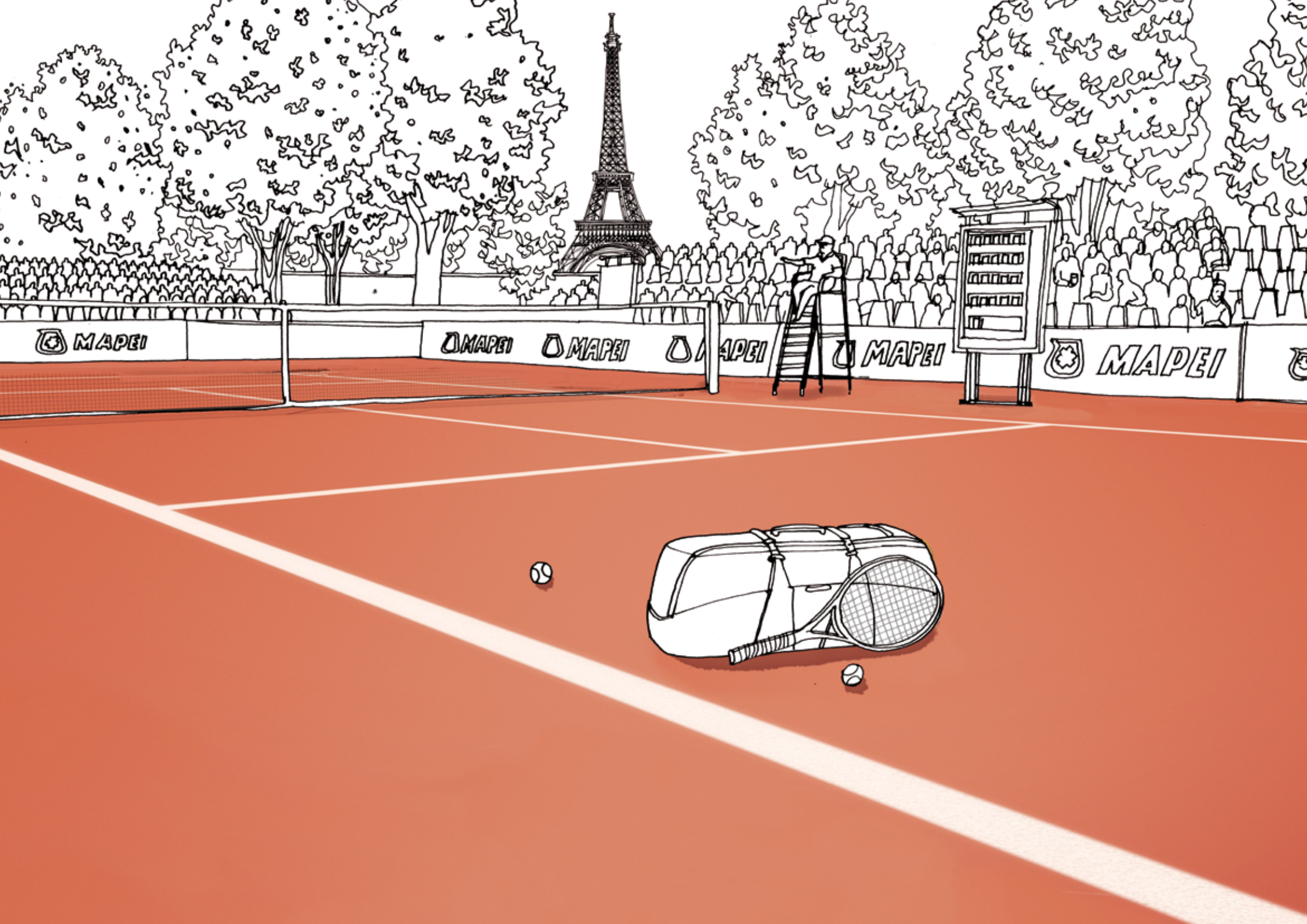
The Collecchio sports centre is just a few kilometres from Parma and is one of the most complete and modern structures in the Serie A, and is where the first team and some of the youth teams carry out their training sessions: 114,000 square metres and a 1,200-seat stand for the Youth Team matches and the midweek friendly matches for the first team. Apart from the main pitch, there are another six available for the first team and youth teams, and there is also an athletics track used for warming up. In 2010, a new pitch with the latest generation of synthetic grass was built using **Ultrabond Turf PU 2K**, a specific two-component, solvent and water-free polyurethane adhesive with very low emission of volatile organic compounds.

RODOVIA SPORTS CENTRE - BRAGA – PORTUGAL

The synthetic grass playing surface for the 7-a-side football matches was installed using **Ultrabond Turf EP 2K** two-component, epoxy-polyurethane polymer-based adhesive.

ARTIFICIAL GRASS PLAYING FIELD, HAJDÚ-BIHAR - DEBRECEN - HUNGARY

A new pitch with the latest generation of synthetic grass was made using **Ultrabond Turf PU 2K**, a specific two-component, solvent and water-free polyurethane adhesive with very low emission of volatile organic compounds.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RESIN SURFACES

Acrylic resin playing surfaces

Any sport, whether played at amateur or professional level, requires high performance and a high degree of comfort from the playing surface. Resin playing surfaces made using the **Mapecoat TNS System**, developed by the Mapei R&D laboratories, is a combination of resistance, strength, durability, comfort and safety while playing.

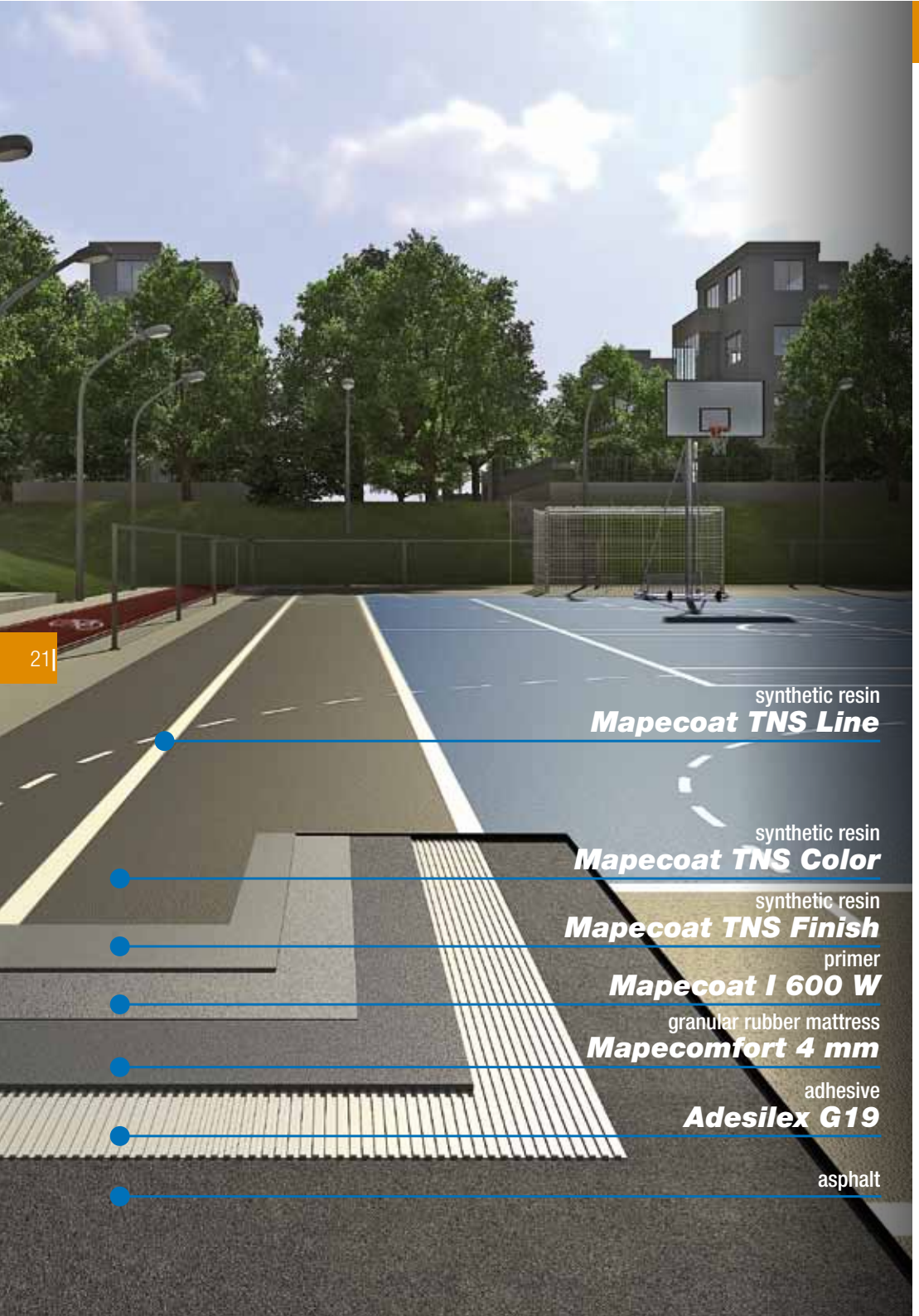
Installation of tennis courts using the Mapecoat TNS System

Mapecoat TNS System is a system of coating and finishing products made from acrylic resin in water dispersion and selected fillers. They may be used to form playing surfaces for various indoor and outdoor sports and multi-purpose playing areas with high resistance to wear, UV rays and various weather conditions.

Playing surfaces made using **Mapecoat TNS System** are moderately elastic, offer excellent playing comfort and have excellent technical performance characteristics, such as the bounce of the ball, sudden changes in direction while running and a high degree of safety, and provide an excellent balance between stability and slide for those who use such surfaces.

Mapecoat TNS System can be used to make:

- Tennis courts
- Basketball courts
- Volleyball courts
- 7-a-side football pitches
- Handball courts
- Skating rinks
- Cycle tracks
- Recreation parks
- Urban features
- Car-parks in shopping centres to divide pedestrian areas and the areas for car parking



The systems available with the **Mapecoat TNS System** are as follows:

- **Mapecoat TNS Professional**: multi-layered system made from acrylic resin in water dispersion for professional indoor and outdoor tennis courts.
- **Mapecoat TNS Cushion**: medium-elasticity, multi-layered system made from acrylic resin in water dispersion for professional indoor and outdoor tennis courts.
- **Mapecoat TNS Comfort**: high-elasticity, multi-layered system made from acrylic resin in water dispersion used in combination with granular rubber matting for professional indoor and outdoor tennis courts.
- **Mapecoat TNS Multisport Professional**: multi-layered system made from acrylic resin in water dispersion for indoor and outdoor multi-purpose sports courts and pitches.
- **Mapecoat TNS Multisport Comfort**: high-elasticity, multi-layered system made from acrylic resin in water dispersion used in combination with granular rubber matting for indoor and outdoor multi-purpose sports courts and pitches.
- **Mapecoat TNS Urban**: acrylic resin-based coloured coating in water dispersion with selected fillers for coating cycle tracks, footpaths and urban features.

THE "SPREGA" PRIVATE TENNIS COURT - SPLIT - CROATIA

MAPECOAT TNS COMFORT

This private indoor tennis court in the city of Split was created by installing the **Mapecoat TNS Comfort** system over an existing concrete substrate after it had been prepared according to the specification.

The installation cycle consisted of preparing the substrate by thoroughly cleaning the surface, sealing the expansion joints and then roughening the surface of the concrete. Sheets of **Mapecomfort** 4 mm were unrolled over the surface on the first day, followed by bonding all the underside of the rolls to the substrate on the following day using **Adesilex G19** two-component adhesive. The surface was then treated with **Mapecoat I 600 W** primer, coated with **Mapecoat TNS Finish** followed by **Mapecoat TNS Color**, and then the lines to delimit the playing surface were marked out.

TENNIS COURT AT FOGGIA TENNIS CLUB - ITALY

MAPECOAT TNS CUSHION

Since 1970, the Foggia Tennis Club, with 9 courts of which 2 in porous cement, has been one of the main centres for the sport in the Puglia Region.

The client wanted to overhaul the two courts in porous cement, and transform them into more modern acrylic resin courts using the **Mapecoat TNS Cushion** system.

To apply this solution, the substrate had to be re-made. The old substrate was no longer suitable for the **Mapecoat TNS Cushion** system because the slope was not sufficient to allow rainwater to run off. It was decided, therefore, to completely remake the substrate by applying a new bitumen mat (binder plus a wear mat).

The various phases to make the playing surface comprised the application of three coats, one after the other, of **Mapecoat TNS Grey Base Coat**, followed by 2 coats of coloured finish **Mapecoat TNS Finish** (the inner part of the court in blue TNS 16 and the outer area of the court in green TNS 19). The last step was to mark out the court using **Mapecoat TNS Line**.

MULTI-PURPOSE SPORTS PITCH - CREMELLA, LECCO - ITALY

MAPECOAT TNS MULTISPORT PROFESSIONAL

This involved the construction of a new multi-purpose sports pitch in the town of Cremella (Lecco), installed on a concrete pad over an area of 1,100 m^2. It is used for various sports, such as basketball and volleyball, and there is also a mini athletics track.

The substrate, which had been made according to precise technical specifications (waterproofed with polythene sheet before casting the concrete to contrast hydraulic lift, followed by embedding electro-welded mesh in the concrete), was deemed suitable for installing the **Mapecoat TNS Multisport Professional** system.

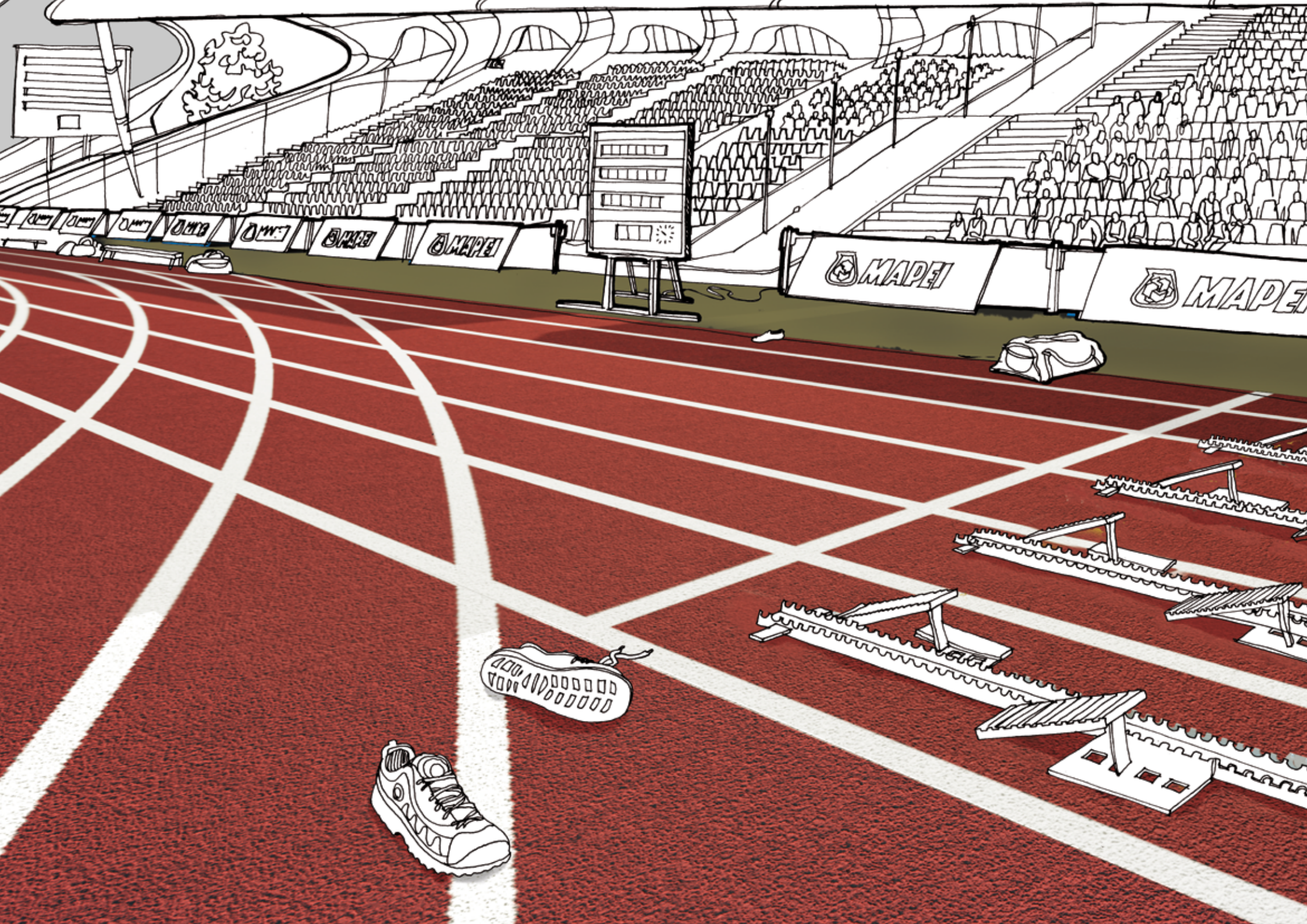
The next phases included preparation of the substrate (roughening the surface and then cleaning it), application of **Mapecoat I 600 W** primer and, once this first coat was dry, application in sequence of a layer of **Mapecoat TNS White Base Coat**, three layers of **Mapecoat TNS Finish** and a final coat of **Mapecoat TNS Paint**. The last step was to mark out the court for the various games to be played.

MULTI-PURPOSE SPORTS PITCH AT THE FRASCATI SALESIANS INSTITUTE - ROME - ITALY

MAPECOAT TNS MULTISPORT COMFORT

Inaugurated in August 2012, the area where the intervention was carried out was the games and sports area outside the main school building which was divided as follows:
total area 3,100 m^2
- ▷ 600 m^2 dedicated to 5-a-side soccer and handball (the area being worked on)
- ▷ 312 m^2 dedicated to basketball and volleyball
- ▷ 650 m^2 dedicated to volleyball and skating
- ▷ 1200 m^2 dedicated to pedestrian areas

Because the existing surface was made from old asphalt cobbles, and was not deemed suitable to carry out the work mentioned above, the entire area had to be overhauled (the trees in the middle of the area and around the edges were removed). The first step was to install a new bitumen mat to create a monolithic surface suitable for applying the **Mapecoat TNS** system. The next phases included preparation of the substrate (cleaning and then smoothing over the small dips and hollows in the surface), unrolling the **Mapecomfort** 4 mm (on the first day), followed by bonding the **Mapecomfort** 4 mm with **Ultrabond Turf PU 2K** two-component adhesive the following day. Then a coat of **Mapecoat I 600 W** was applied, followed by **Mapecoat TNS Finish**, **Mapecoat TNS Paint** and, the final step, marking out the lines of the courts and pitches for the various games.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RUBBER SURFACES

Rubber playing surfaces

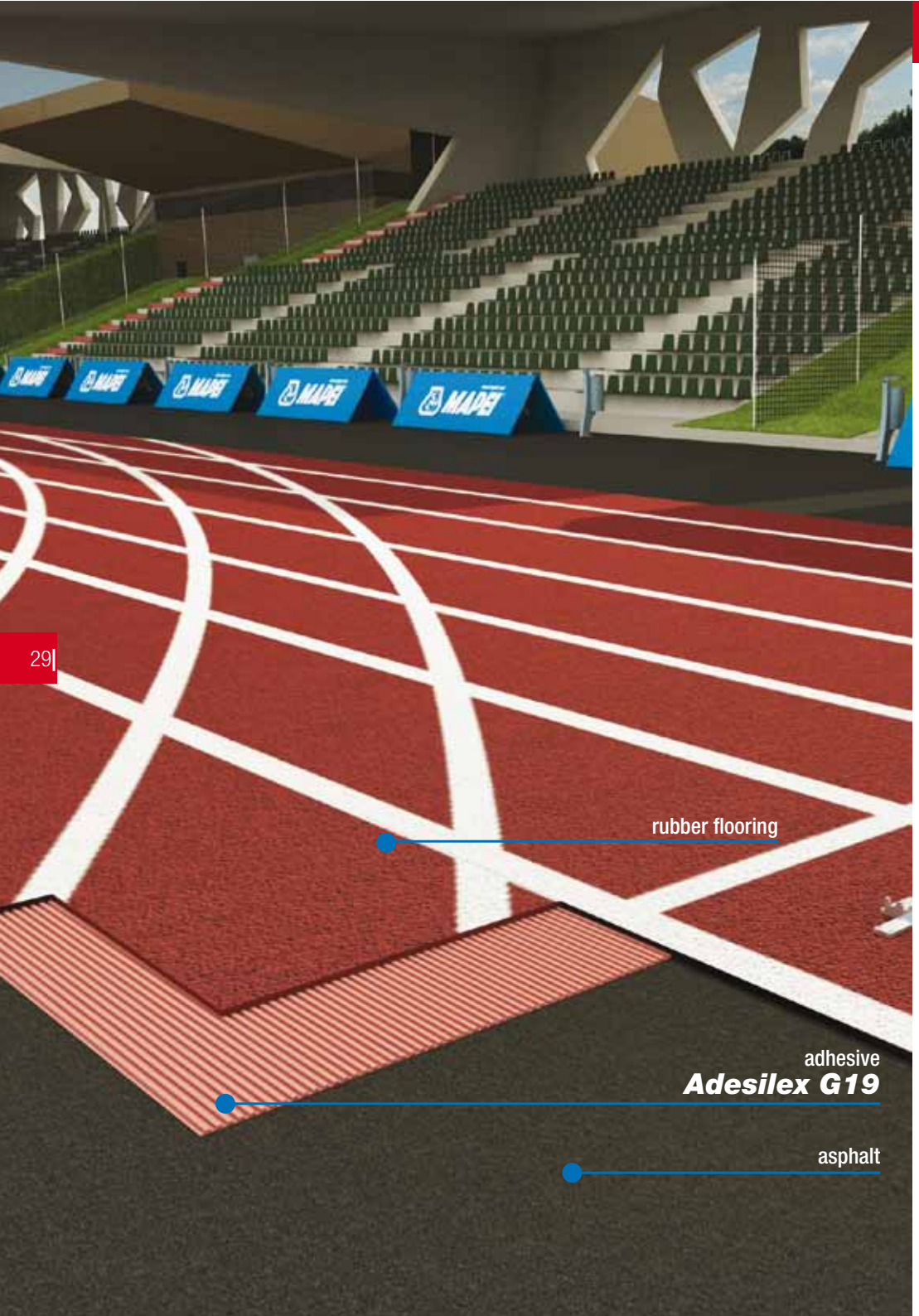
Outdoor playing surfaces made from the latest generation of synthetic rubber stand out for their high level of comfort, safety and high resistance to wear. Playing surfaces are made from very high quality synthetic rubber, natural mineral fillers and eco-compatible pigments which make the surfaces highly functional, very strong and durable over the years.

Installation of athletics tracks using Adesilex G19

For athletics tracks made from rolls of synthetic rubber, polyurethane adhesives must be used which have the capacity to adhere to the substrate, normally made from a layer of bitumen cementitious conglomerate.

For this type of application, Mapei has developed specific adhesives such as **Adesilex G19** and **Adesilex G20**, which have been used to make numerous athletics tracks for the most prestigious sporting events, such as the Olympic Games.

These adhesives have the capacity of adhering perfectly to both the bitumen substrate and the synthetic rubber coating, and at the same time offer excellent resistance to tangential stresses transmitted to the underlying substrate during races, and so help athletes reach optimum performance levels.



Adesilex G19 - TECHNICAL DATA (typical values)

	Component **A**	Component **B**
Consistency:	thick paste	fluid liquid
Colour:	beige, red, green or black	
Density (g/cm³):	1.5	0.92
Brookfield viscosity (mPa·s):	300,000 (rotor E - 2.5 rpm)	30 (rotor 1 – 2.5 rpm)
Mixing ratio:	component A : component B = 94 :6	
Brookfield viscosity of mix (mPa·s):	180,000 (rotor 7 - 10 rpm)	
Pot life of mix:	50-60 minutes	
Application temperature range:	from 10°C to 30°C	
Open time:	1 hour	
Adjustment time:	90 minutes	
Set to foot traffic:	12-24 hours	
Ready for service:	after 3 days	
Peel adhesion at 90° according to EN 1372 - after 14 days at 23°C (N/mm):	rubber: → 3 (failure of coating) PVC: → 3 (failure of coating)	

OLYMPIC STADIUM - LONDON - UK

The London Olympic Stadium was officially inaugurated on the evening of the 6th of May in front of 40,000 spectators, when there were still exactly 2012 hours to the official opening ceremony of the XXX Olympic Games (the third Olympic Games to be held in the city of London, following those held in 1908 and 1948). The structure hosted the opening and closing ceremonies of the Games, as well as all the athletics events and Paralympics events. Mapei took part in the construction of numerous sports structures, including the Olympic Stadium. To lay the athletics track in Mondo-Track FTX, a special, multi award-winning sports surface made from synthetic rubber, **Adesilex G19** two-component, epoxy-polyurethane was used, an adhesive that guarantees excellent toughness and elasticity while in use and which is ideal for use in damp environments.

OLYMPIC STADIUM - BEIJING - CHINA

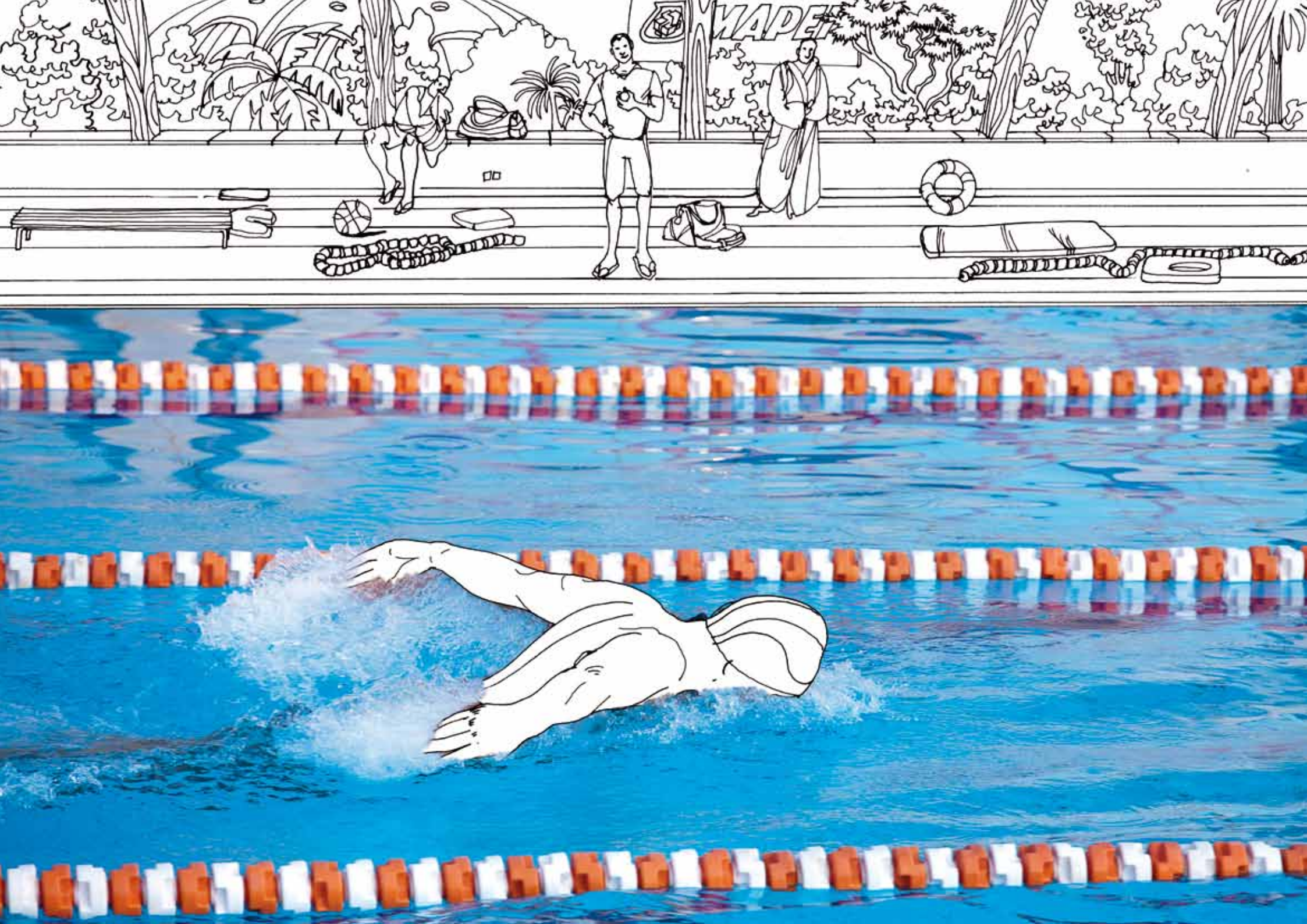
This imposing and original architectural complex, which became the most famous worldwide symbol of the Beijing 2008 Olympic Games, took 5 years to build and cost 320 million Euros. The complex covers an area of 250,000 m^2 and hosted the opening and closing ceremonies of the 2008 Olympic Games, as well as 57 different athletics events. The main athletics track for the races and for warming up, in addition to the flooring in the internal pedestrian areas and various service areas, all red rubber, were installed using **Adesilex G19** adhesive.

OLYMPIC STADIUM - ATHENS - GREECE

The Olympic Stadium is the largest stadium in Greece, and was the main hub of the 2004 Olympic Games. In front of more than 70,000 spectators the opening and closing ceremonies were held, as well as all the most prestigious athletics events and the final in the soccer tournament to decide the winners of the gold medal. It is located in the Oaka poly-functional sports centre, and stands out in particular for the roof designed by the Spanish architect Santiago Calatrava. The part of the stadium used for the athletics events was completely renewed, and Mapei installed the athletics track using the adhesive **Adesilex G19**.

OLYMPIC STADIUM - SIDNEY - AUSTRALIA

It covers an area of 16 hectares and was designed by architects from the Hok Lobb studio, the most highly renowned experts in the field of sports complexes, in collaboration with the Australian studio Bligh Voller Nield. It is a structure that follows the pattern of the two symbols of Sydney - Harbour Bridge and the Opera House - and the adoption of special mobile stands on rails allows the Stadium to be quickly transformed according to the type of sports event to be held, from athletics to rugby or soccer. Avant-garde solution were adopted in the stadium, such as the athletics track which was not cast in place, but bonded using the high performance adhesive **Adesilex G19**.

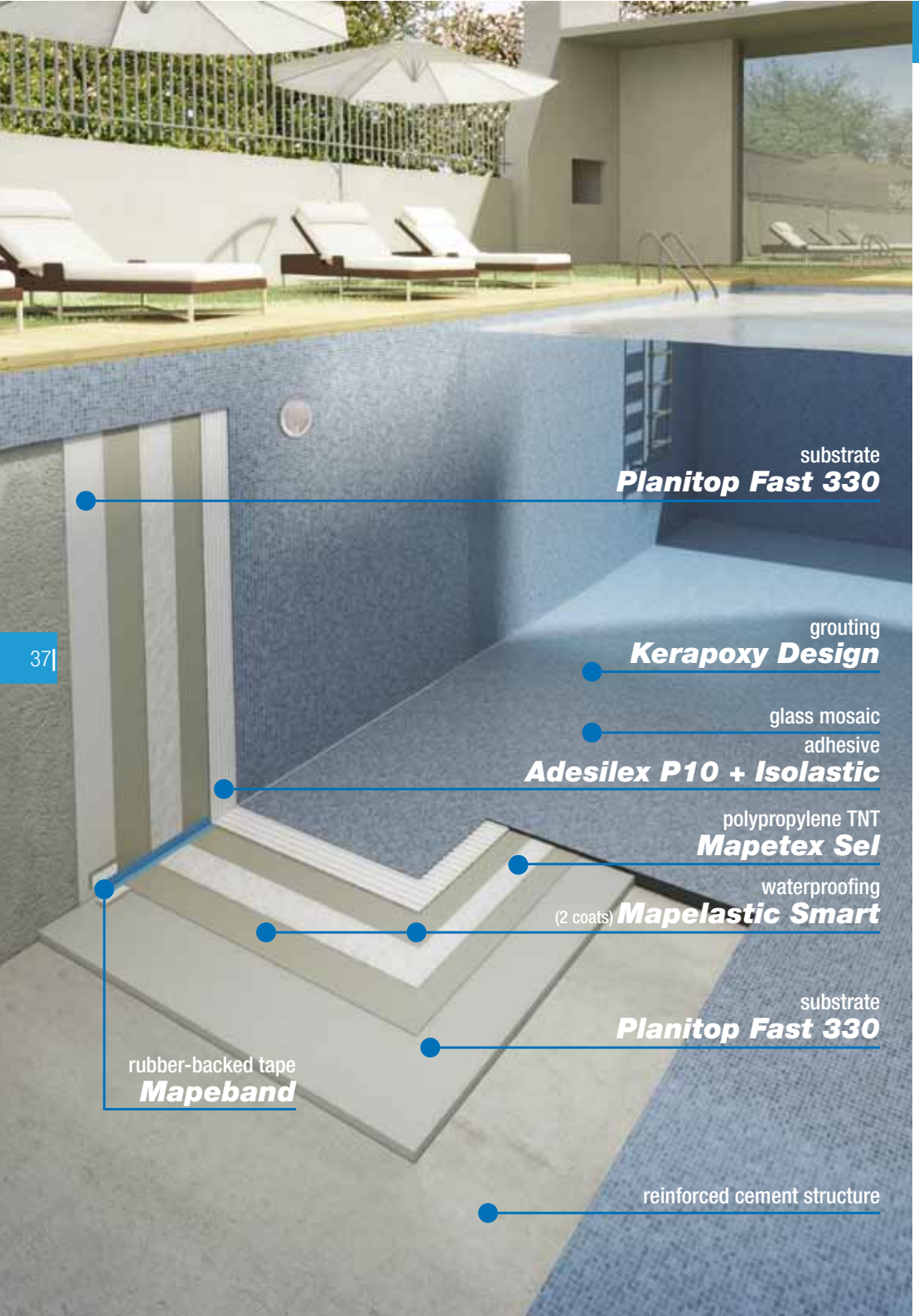


SWIMMING POOLS

Swimming pools

Reinforced concrete is normally used to build swimming pool complexes and structures and, because they are normally in direct contact with water, and also with damp in the case of structures below ground level, they are subjected to "aggressive" phenomena which could compromise their durability.
If the durability of a structure with a swimming pool is compromised it will require constant maintenance, the structure may have to be closed down and there will be a loss in earnings.
It is very important, therefore, that the structure is protected with products that guarantee that it remains watertight and, above all, that increase its service life, such as a cementitious system for example, with excellent flexibility that offers a high level of protection, and that adheres perfectly to the concrete.
Mapei, the world's leading manufacturer of chemical products for the building industry, offers support for designers, building companies and those who apply such products in both new swimming pools and in those requiring renovation work.
Over the last twenty years, Mapei has developed a complete range of products that can be used to create suitable waterproofing systems.

- **Mapelastic** and **Mapelastic Smart**, two-component, elastic cementitious mortars;
- **Mapenet 150**, alkali-resistant glass fibre mesh;
- **Mapetex Sel**, macro-perforated non-woven polypropylene fabric;
- **Mapeband** and **Mapeband TPE** (and their special T and "X" shaped pieces), waterproofing tapes for fillet and structural joints;
- **Drain Vertical** and **Drain Lateral**, accessories for drains;
- **Mapeproof Swell** one-component water-expansive paste used to make waterproof seals around through-elements, drains and openings during renovation work;
- **Mapegrout** and **Planitop** ranges, special mortars for repairing and levelling off substrates before applying products from the **Mapelastic** range.



Waterproofing swimming pools with Mapelastic Smart

A number of years ago, the Mapei R&D laboratories developed **Mapelastic Smart**, a product for protecting and waterproofing reinforced concrete structures. **Mapelastic Smart** is also highly elastic and fluid and has excellent workability.
As well as these characteristics, **Mapelastic Smart** also has the capacity of forming an excellent bond with surfaces, and this bond remains stable for a long time, thus making structures much more durable. Used in combination with **Mapetex Sel**, it follows the movements of the structures and has a crack-bridging capacity of more than 3 mm.
Mapelastic Smart may be applied by trowel, with a roller or by spray, and is used to waterproof swimming pools, bathrooms, saunas and other areas connected with swimming pools, as well as flat roofs.
Mapei also has a wide range of suitable adhesives to choose from for installing tiles in swimming pools, and which one to use depends on the type of tiling, the surrounding conditions during installation and the amount of time available before the structure is put into service. Furthermore, since **Mapelastic Smart** is an elastic waterproofing product, the adhesive used for the tiling must be class C2 according to EN 12004 standards, and its deformability must be suitable for the size of the tiles.

The following products may be used:
- **Adesilex P10** + **Isolastic** for installing ceramic and glass mosaic;
- **Ultralite S1**, **Ultralite S2**, **Keraflex Maxi S1**, **Kerabond** + **Isolastic** or, for quicker interventions, **Granirapid**, **Elastorapid**, **Ultralite S1 Quick** and **Ultralite S2 Quick** for clinker and porcelain tiles, and for dimensionally stable stone that is not sensitive to staining.

The following products may be used to grout the joints:
- **Keracolor** + **Fugolastic** or, for quicker interventions, **Ultracolor Plus**;
- **Kerapoxy**, **Kerapoxy CQ** and **Kerapoxy Design** for swimming pools with thermal water or sea water.

VILLA EOLO, FORTE DEI MARMI - LUCCA - ITALY

A private villa and swimming pool have been built in Forte dei Marmi, one of the most exclusive parts of the Versilia area.
Mapei took part in the construction work by supplying products to waterproof the swimming pool and the areas below ground level, for the flooring and for finishing operations.
The concrete structures for the swimming pool were made entirely using Mapei products; the substrates were patched up and levelled off with **Adesilex PG4**, **Mapegrout 430** and **Planitop Fast 330**, while the sloping screed on the bottom of the swimming pool was made from **Topcem Pronto**.
The pool was waterproofed with products from the **Mapelastic** range. **Mapelastic** + **Mapenet 150** was used to waterproof the structures of the pool, while **Mapelastic Smart** + **Mapetex Sel** was used to treat the more complex areas. The fillet joints between the horizontal and vertical surfaces were sealed with **Mapeband**.
The pool was completed by installing mosaic with **Adesilex P10** + **Isolastic** which was then grouted with **Keracolor** + **Fugolastic**. The joints were sealed with **Mapesil LM**.

SWIMMING POOL, FORUM DI ASSAGO - MILAN - ITALY

A 50 metre Olympic swimming pool was built at the Mediolanum Forum di Assago at the end of the 1980's. The pool and all the associated facilities, however, were never used. The owners recently decided to renovate the entire structure and open it to the general public.
Work was completed in 2011, and included preparation of the substrates by protecting the reinforcing steel with **Mapefer 1K** and repairs to the structure using **Mapegrout 430**.
The pipe-work was then sealed with **Idrostop B25** and the light fittings were sealed with **Mapeproof Swell**. The structural joints, on the other hand, were waterproofed with **Mapeband TPE** bonded in place with **Adesilex PG4** epoxy adhesive, while the fillet joints between the horizontal and vertical surfaces were sealed with **Mapeband**.

The pool was then waterproofed with products from the **Mapelastic** range. **Mapelastic** with **Mapenet 150** embedded in it was applied on the walls, while the bottom of the pool was waterproofed using a combination of **Mapelastic Smart** and **Mapetex Sel**.
Work was completed by installing ceramic tiles. **Keraflex** adhesive was used to install the tiles, while the tile joints were grouted with **Keracolor GG**. The check joints were treated with **Primer FD** and **Mapefoam** and then sealed with **Mapesil AC**.

JINDRICHUV HARDEC AQUAPARK - CZECH REPUBLIC

In 2009, on the banks of Lake Vajgar in the city of Jindrichuv Hardec (Czech Republic), a sports complex was inaugurated which included an open-air aquapark and a number of covered swimming pools for various types of sport.
Work included waterproofing all the pools in the water sports complex and the areas connected to the pools.
The first operation was to prepare the substrates correctly with products such as **Adesilex P4** and **Nivoplan** to even out the surfaces. The screeds were then made using **Topcem Pronto**.
The next step was to waterproof the pools by sealing the fillet joints between the horizontal and vertical surfaces with **Mapeband** and then applying a layer of **Mapelastic** with **Mapenet 150** embedded in it.
Work was completed by installing mosaics and ceramic tiles. The mosaic was installed with **Adesilex P10** + **Isolastic** and then grouted with **Kerapoxy Design**. The tiles, on the other hand, were installed using **Keraflex Maxi**, **Elastorapid** and **Kerapoxy**. The joints were then grouted with **Mapesil AC**.

SA AQUATIC & LEISURE & GP PLUS HEALTH CENTRE - ADELAIDE - AUSTRALIA

In April 2011, for the occasion of the Australian Age Swimming Championships, the most modern and complete aquatics centre ever built in Australia was officially inaugurated. The complex includes pools for top-level competitions for various water sports, and a large area dedicated to spare time and leisure, with a pool with access for the disabled, a pool for small children, two spectacular slides and other pools in the spa and wellness area.
Mapei was involved in the construction of this imposing complex by supplying waterproofing systems for the pools and areas around the pools, as well as adhesives and mortars to grout the tiling.
The substrates of the pools were firstly primed with **Mapeprim SP** and **Primer G**. The pools were then waterproofed using **Mapelastic Smart**, while for the toilets **Mapegum WPS** was used.
Work was completed by installing the tiling with **Keralastic T**, **Kerabond Plus** + **Isolastic 50**, **Granirapid** and **Tixobond Fine S1**, and the joints were grouted with **Kerapoxy Design** and **Ultracolor Plus**. The joints, on the other hand, were sealed with **Mapesil AC**.

furthermore ...

1 **SANTIAGO BERNABEU - MADRID - SPAIN**
Products used: **Carboplate**, **Adesilex PG1**

2 **SOCCER CITY STADIUM - JOHANNESBURG - SOUTH AFRICA**
Products used: **Adesilex PG1**, **Adesilex PG2**, **Adesilex PG4**, **Mapeband TPE**, **Mapefer 1K**, **Mapeflex PU45**, **Mapegrout Hi-Flow**, **Mapegrout Fast-Set**, **Planitop 100**

3 **NISHISHINA ARENA - JAPAN**
Product used: **Adesilex G19**

4 **SKI JUMP ARENA - OSLO - NORWAY**
Products used: **Dynamon System**, **DMA 3000**, **Monofinish**, **Mapecure I**, **Nonset 120**

5 **VUT SPORTS CENTRE - BRNO - CZECH REPUBLIC**
Products used: **Mapefinish**, **Elastocolor**, **Mapecoat I 24**, **Primer AF**, **Mapeflex PU45**, **Mapefoam**

6 **CHARLOTTE ARENA - USA**
Products used: **Kerabond+Isolastic**
(N.B: **Isolastic** is distributed as **Keralastic** on the North American market)


LONDON 2012

LONDON 2012 OLYMPICS

1 **WEMBLEY STADIUM**
Mapei products were used in various areas during construction work on the new stadium. **Eco Prim R**, **Mapetex System** and **Ultraplan Eco** were used to make the installation substrates, while **Keracolor FF**, **Keracolor GG**, **Keraquick** + **Latex Plus** and **Mapesil AC** were used to install the ceramic flooring and tiling.

2 **WIMBLEDON CENTRE COURT**
Mapei played a leading role during the modernisation work carried out on the guest stands and the terraces of the famous Centre Court. **Topcem** e **Ultraplan Eco** was used to prepare the substrates, while **Keraquick** + **Latex Plus** and **Ultracolor Plus** were used to install the ceramic.

3 **LIFE PLYMOUTH SPORTS AND TRAINING CENTRE, PLYMOUTH, DEVON**
The complex was chosen to host the training sessions of the Canadian and Lithuanian swimming and diving squads. Mapei products were used to install the ceramic tiles in the swimming pool, the diving pool and in various service areas, such as the adhesives **Keraquick** + **Latex Plus**, **Keraflex** and **Kerapoxy**. The joints were grouted with **Ultracolor Plus**.

- PRODUCTS FOR CERAMICS AND STONE MATERIALS
- PRODUCTS FOR RESILIENT AND TEXTILE MATERIALS
- PRODUCTS FOR WOODEN FLOORING
- PRODUCTS FOR CEMENTITIOUS AND RESIN FLOORING
- PRODUCTS FOR ACOUSTIC INSULATION
- PRODUCTS FOR BUILDING
- ADMIXTURES FOR CONCRETE
- PRODUCTS FOR STRUCTURAL STRENGTHENING
- PRODUCTS FOR THE REPAIR OF MASONRY
- PRODUCTS FOR THERMAL INSULATION
- WALL PROTECTIVE AND DECORATIVE COATINGS
- PRODUCTS FOR WATERPROOFING
- PRODUCTS FOR UNDERGROUND CONSTRUCTIONS
- ELASTIC SEALANTS AND ADHESIVES
- GRINDING AIDS FOR CEMENT

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