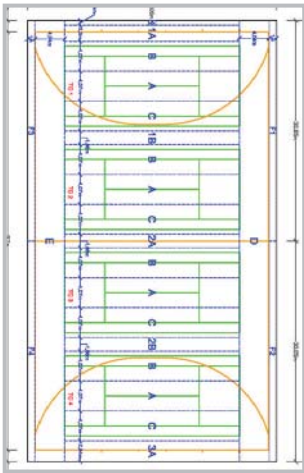


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Different sports require different playing characteristics, and their respective governing bodies stipulate precise requirements. Once the quality of the artificial grass has been chosen according to the sport and to the requirements of the governing body, several steps have to be taken into account in order to secure the successful installation of the artificial grass.

## 1. DRAWING A PITCH PLAN



Based on the exact dimensions of the surface to be covered, LANO SPORTS draws a layout plan for its customers, i.e. a numbered list of each roll of artificial grass, together with the play lines (tufted lines in the carpet and lines to be inlaid on site). Such a plan allows us to optimise the amount of carpet delivered and to reduce losses during the installation. After the customer's final approval, production will commence according to this layout plan: each roll will have a number corresponding to the number mentioned on the plan.

In most cases for full size pitches, the perimeter lines and the centre line(s) are tufted in the carpet and are an integral part of it. As far as tennis courts are concerned, the rolls may be organized as a kit with a totally incorporated layout.

## 2. DELIVERY ON THE SITE

Rolls need to be unloaded with the utmost care, in order to prevent any kind of tearing or damage to the artificial grass.

We recommend the use of a Fenwick type of machine, the unloading head of which will be introduced inside the mandrel of the roll and cover its whole width. In which case one avoids touching the carpet and at the same time the roll is supported on its whole width.

It is advisable not to stack the rolls to avoid crushing them or causing folds. If at all possible, the rolls should be placed on a flat surface with no sharp edges protruding, in the order indicated by the numbers on the rolls. Do not use an unloading machine with forks.

Note: the site foreman needs to make sure the number of rolls corresponds to the number mentioned on the delivery slip.



### 3. INSTALLING THE ROLLS



The installer should place the rolls as indicated on the layout plan, alongside the pitch, ready to be unrolled.

For full size pitches (football, hockey, rugby), the installer should first unroll the rolls across the width of the pitch before bringing them into alignment. He should then place the rolls with incorporated lines on the longitudinal sides.

It is advisable to let the rolls relax before starting gluing them, the more so when temperatures are either very high or very low, or when there is a big difference between day and night temperatures. We recommend installation as of  $\pm 10^{\circ}$  Celsius over a 24-hour period and under dry conditions.

It might be necessary to secure the rolls with sandbags when the weather is bad or when the wind is strong. We recommend the same relaxation rules for tennis courts or smaller surfaces, where rolls will also be unrolled according to the layout plan.

### 4. BRINGING THE ROLLS INTO ALIGNMENT

The installer should determine and materialise the reference axes in order to position each roll precisely where it should go.

In the case of full size pitches, a longitudinal line and a middle line should serve as references. Each strip will be aligned as the work goes on, after linear recutting of the selvages at 15 mm starting from the tufted zone. As soon as a strip is correctly placed in relation to the preceding one, it has to be fixed to it. When aligning the rolls, the installer will make sure to remove, before gluing, any fold created by the installation of the rolls.

Note: if the installer notices serious folds or flaws that relate to the production of the artificial grass, he should immediately get in touch with LANO SPORTS.

### 5. JOINTING THE STRIPS OF ARTIFICIAL GRASS



Strips of artificial grass are usually jointed by seaming tape. Seaming tape has a width of 300 to 330 mm, and is made of a geotextile of 120 to 150 g/m<sup>2</sup>, which is covered by a layer of polyethylene.

When two strips of carpet are jointed, the edge of each strip is upturned, so that the seaming tape can be placed parallel to the strips of carpet, with the polyethylene surface facing the ground.

The seaming tape will be coated evenly with polyurethane bi-component glue which will be prepared on site. 300 to 350 g/m<sup>2</sup> will be applied on the whole length of the seaming tape, 250 to 300 mm across.

The edges of each strip of carpet will hence be glued to the seaming tape. The installer will make sure the edges of the strips of carpet neatly touch each other, and, if necessary, he will use an appropriate tool to ensure a perfect glueing edge to edge.

The same technique will be used to joint the transverse strips of carpet to the longitudinal ones

## 6. INCORPORATING PLAY LINES

The main transversal or longitudinal play lines are usually incorporated in the carpet during manufacture. Some lines, however, such as centre circles, boxes, D's, cornertabs, etc. cannot be incorporated during manufacture and have to be inserted on site, once the strips of carpet have been jointed. With the help of strings and gauges, the installer will draw the lines to be added on the artificial grass. Using a tool with a double blade, he will cut the artificial grass following the lines he has drawn just before. Once cut, the line of artificial grass will be removed and replaced by a coloured line corresponding to the layout. This coloured line will either be delivered in rolls according to the required width, or be cut on site from an appropriate coloured strip. The inlaid line will be jointed to the rest of the surface following the same jointing principle as the one used for the strips of carpet. A seaming tape will be placed between both edges cut in the surface and coated with glue (see above). The line to be inlaid will be glued onto the seaming tape. The installer will make sure the inlaid line perfectly fits the rest of the surface.



## 7. SAND-FILLING

With the exception of hockey water based pitches, most artificial grass pitches require sand-filling in order to gain the necessary ballast. The silica sand in-fill should consist of non-abrasive, well rounded, washed and dried, dust-free particles. The size and quantity of sand particles to be used will depend on the quality of the artificial grass (see the technical data sheet of the chosen type of artificial grass). The sand will preferably be delivered in silos or in big bags, which make it easy to load the sandblasters used by the installer.

We recommend the use of sandblasters that are fitted for artificial grass: upturning of the fibre before sand-filling, sandblasting in front of the sandblaster before the wheels pass over it, in order to avoid any deformation of the artificial grass, intensive brushing with brushes moving laterally.

Sand-filling must be done with dry sand and in dry weather conditions. The fitter will make sure the sand is deeply and evenly spread in order to ensure a good and even surface, and to avoid possible folds in the future.



## 8. ADDING RUBBER GRANULES

The latest kinds of artificial grass devised for football or rugby are filled with a layer of rubber granules on top of the sand layer.

This layer of rubber granules gives the playing surface the comfort, the flexibility and the characteristics required by the relevant standards. The type and the quantity of granules to be used will depend on the chosen type of artificial grass (see technical data). The rubber granules will be dry and preferably delivered in big bags, which make the filling of the sandblaster so much easier.

The filling with rubber granules will be done in several layers. After each layer, the fitter will brush the surface in order for the rubber granules to be evenly spread. The filling should be done in such a way as to keep 15 to 20 mm of artificial grass free of rubber granules, as specified on the technical data sheet. However, if the total amount of recommended granules is used immediately during the installation, the surface will soon be completely covered. We therefore recommend a first filling that will keep 15 to 20 mm of fibre free of rubber granules. After 3 months' use and the effects of rain, the rubber granules will have entered the artificial grass more deeply. At this time it will be appropriate to top up with rubber granules reaching the required quantity (refill with 2 to 3 kg/m<sup>2</sup>).

Only then will the tests carried out on site be representative and match the technical data or standards.



## 9. CLEANING UP THE PITCH

Once the installation is completed, the fitter will remove all the remaining fibres from the surface, as well as any kind of litter.

He will make sure wrappings have been taken away, and he will clean the areas close to the silos or big bags, where the sand and granules were poured in the blasters.