BONDING AND INSTALLING SYNTHETIC TURF WITH STAUF PRODUCTS (KSA 1)

For synthetic turf sports grounds, DIN SPEC 18035-7 "Sports grounds – Part 7: Synthetic turf areas" differentiates between different layer structures:

A)
→ Synthetic turf
→ Elastic layer
→ Asphalt supporting layer
→ Unbound supporting layer (e.g. crushed stone)
→ Foundation soil

B)
→ Synthetic turf
→ Bound elastic supporting layer
→ Unbound supporting layer (e.g. crushed stone)
→ Foundation soil

C)
→ Synthetic turf
→ Elastic layer
→ Levelling layer (fine grit)
→ Unbound supporting layer (e.g. crushed stone)
→ Foundation soil

THE DIFFERENCES

The flexible layers are subdivided into bound elastic supporting layers and elastic layers. The main component of the flexible layers is STAUF PU GRANULATE BINDER. The following combinations are suitable:

✔ Elastic supporting layer:
STAUF PU GRANULATE BINDER, granulated rubber, sand

→ Elastic layer:
STAUF PU GRANULATE BINDER, granulated rubber

✔ Prefabricated shock pads
(composition according to manufacturers' guidelines)

THE SURFACE TYPES

Different types of surfaces are used depending on the composition of the elastic layer. The surface type depends primarily on the type of sport to be played on the field. The most common of these are football, hockey, rugby, American football and tennis. Multi-purpose synthetic turf is also very popular. The types of surface differ with regard to the infill type, infill material, fibre type, filament type, tape structure, pile height, pile density/number of tufts and the infill depth.

ROLLING OUT AND CUTTING

Depending on the project, the synthetic turf is supplied in rolls up to 3 metres wide. You roll the turf out over the entire sports ground according to the laying plan and leave it for several – ideally 24-48 hours. This allows any production, storage or transport related stresses in the synthetic turf to dissipate and allows the turf to adjust to the conditions on site. Depending on the weather, e.g. in high winds, you should bond the synthetic turf on the same day.

When rolling out the synthetic turf, you should always check to make sure that the fibre direction of the blades remains the same from roll to roll. If you wish to create accents in the appearance of the turf, then this is the time to ensure an even arrangement. The end of each strip should extend several centimetres beyond the edge of the field so that adjustments can be made if necessary. Wait until the adhesive is just about to be applied before precisely trimming around the edges of the synthetic turf field. Please note that there is usually a section of bare backing material without turf fibres at the start of each roll. These excess pieces must be cut off.

The backing material of the synthetic turf rolls comprises tufted bunches of fibres with channels between the rows of fibres, the so-called gauge. Always cut along a channel, where possible, so that the fibres remain intact. Although cutting from the underside does not damage the fibres on the top side, this is not done in practice. Suitable sharp tools and a good deal of experience are important here.

CUTTING THE SEAM EDGES

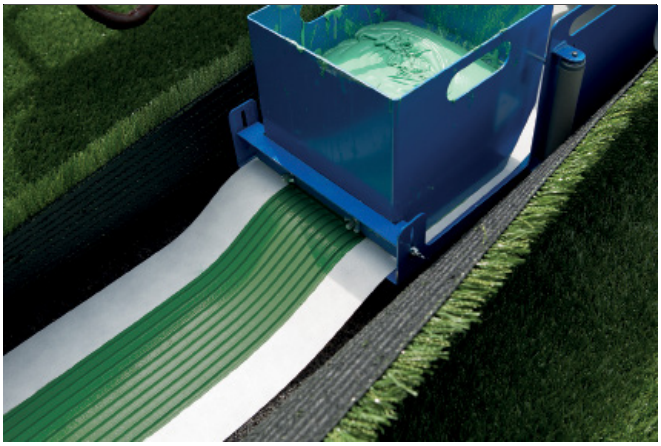
The seam edges must be cut cleanly before bonding takes place. Wherever two strips or other sections of synthetic turf, such as lines or penalty spots, need to be bonded together, you must lay a seaming tape under the seam. Position the seaming tape so that it is centred beneath the joint.

APPLYING THE ADHESIVE

The synthetic turf is bonded using the STAUF applicator machine. Place the seaming tape and adhesive into the applicator machine and adjust the drag line height on the applicator machine using the movable rail to suit the structure of the synthetic turf backing. Adjust the quantity of adhesive to be applied to ensure that the entire surface of the turf will lie in a bed of adhesive. The right amount of adhesive is crucial for the seam strength. Now fix seaming tape in place around the edges of the playing field or court (using long U-shaped pins) and go along the seam with

the applicator machine from one side of the field to the other.

The STAUF applicator machine opens the seam, lays the seaming tape crease-free, applies the adhesive in ridges and automatically lays the synthetic turf back into the bed of adhesive. After 15 to 30 minutes, rub the surface down forcefully again onto the tape or roll the seam using a heavy section roller or other suitable device. If any edges stand up, roll them flat again after up to 60 minutes. You can weigh down the seam if necessary after bonding. You can also apply the adhesive using a different suitable device. A notched trowel, TKB C1 to C4, is suitable.



Opening the turf, laying the seaming tape without creases, applying the adhesive and laying the turf in the bed of adhesive: the STAUF adhesive applicator machine performs all of these steps in a single process.

SELECTING THE INSTALLATION MATERIALS AND STAUF PRODUCTS

The performance and loading capacity of the synthetic turf and the durability of its bonded seams depend to a large extent on the combination of adhesive, seaming tape and synthetic turf. The loading applied to the synthetic turf system is determined primarily by the type of sport. Competitive sport associations stipulate specific requirements with regard to the surface. To ensure proper functionality, it is therefore important to use a seaming tape that is correctly dimensioned for the purpose. If the right installation materials and STAUF products are selected, the long service life of the seams will be guaranteed.

THE SEAMING TAPES

The seaming tape is available in different versions, for bonding on one or both sides. The latter has the advantage that seaming tapes at intersections, such as at corner flags or centre circles, can be bonded on top of each other. Seaming tapes with single-sided bonding have a film on the underside, which stops the adhesive from passing through and thus prevents unwanted bonding to the elastic layer beneath it. The disadvantage here is that bonding to this film is not possible. In the case of the double-sided bonding version, this film lies inside the tape. At intersections, these seaming tapes can be simply bonded one on top of the other, without the need for additional measures.

STAUF seaming tapes for one-sided bonding:
C 140, C 145, C 147, C 166, C 230
STAUF seaming tapes for double-sided bonding:
C 345

STAUF ADHESIVE SYSTEMS

STAUF offers a range of adhesive systems for bonding synthetic turf:
2-c polyurethane adhesive: R 202, R 201
1-c polyurethane adhesive: R 401, SP Spot Tack
Upon request 1-c silane-terminated polyurethane adhesive: R 301

The advantages of R 202 and R 201 are their uniform hardening properties, whatever the layer thickness, and the option of using STAUF ACTIVATOR, STAUF R 401 foams in a controlled manner and thus achieves the best possible surface coverage of the surfaces to be bonded. With this synthetic turf 1-c-adhesive, it is also possible to take partial quantities from the container. This allows you to work over a long period without the adhesive hardening in the container. 2-c products, on the other hand, are restricted with regard to their working time, since they have to be used up within their so-called pot life, which commences immediately after mixing.

R 301 is the perfect adhesive for beginners and DIY enthusiasts. It contains no sensitising substances and thus requires no special labelling. It also has the benefits of a 1-c adhesive described above.

The bonding of synthetic turf is extremely weather dependent, since temperature and humidity greatly influence how the adhesive sets. R 202, for example, should not be used at temperatures below 15°C. R 201, which can be used from temperatures of approx. 0°C, is recommended for professional installers who sometimes lay turf even into the winter months.

The hardening process can be accelerated by adding STAUF Activator, if required, to achieve the usual hardening speed. The top product to emerge from STAUF's development activities is the moisture-cure R 401. Using this high-tech product, you can implement any project – even at temperatures around 0°C and in light rain. The hardening process of this 1-c-adhesive can be accelerated by lightly watering the newly laid synthetic turf. For smaller repairs, we recommend SP Spot Tack installation adhesive, which STAUF developed especially for this purpose. This is available in the usual 310-ml cartridges.

ADDING THE INFILL MATERIAL

After the adhesive has dried overnight (24-48 h), you can then apply the infill material, as required for the type of use or length of the synthetic turf fibres. You can brush the infill material in using an infill machine or a hard broom. Brushing against the direction of the fibres has proven effective, since the sand then falls between the fibres, which then automatically stand erect. The infill material burdens and weighs down the synthetic turf and surrounds the synthetic turf fibres so that they remain erect. This helps to ensure that the synthetic turf has a long service life.

All of the adhesives are green, to match the lush green of the synthetic turf.

COMMON COMBINATIONS FOR BONDING SYNTHETIC TURF

STAUF			
Surface type (sport)	**Subsurface**	**Seaming tape**	**Adhesive**
Football	Rigid	C 145	R 202/R 201/R 401
	Elastic, soft	C 147, C 166	
Hockey		C 147, C 230	R 401
Rugby, American football		C 230	R 401
Multi-purpose sports ground	Rigid	C 145	R 202/R 201/R 401
	Elastic, soft	C 147, C 166	
Tennis		C 140	R 202/R 201/R 401
Landscaping/Leisure		C 140	R 301, R 401
Seam repair		C 345	SP Spot Tack, R 401

For information regarding combinations and for questions on synthetic turf laying, please contact STAUF's technical service division.