



DOG AGILITY INSTALLATION AND MAINTENANCE

Contents

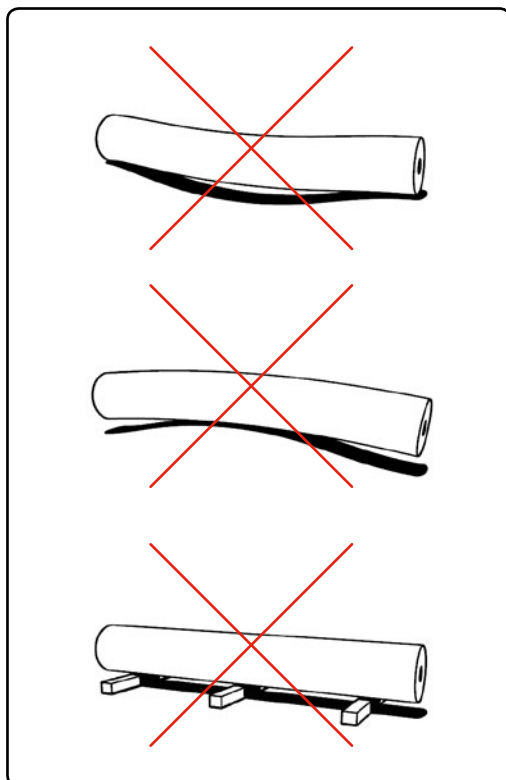
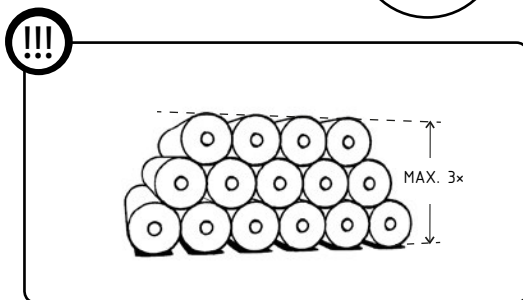
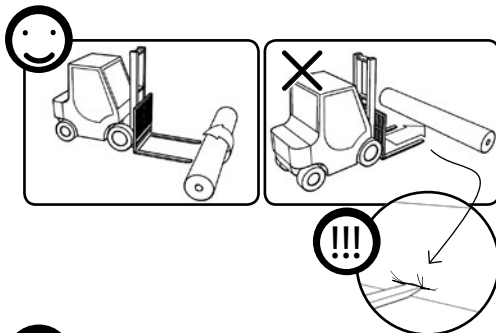
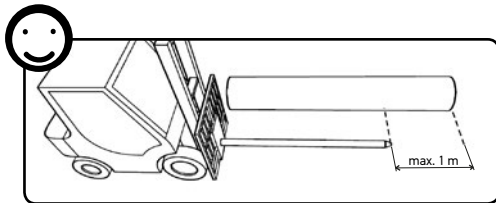
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1. Handling and Storage

Following these instructions allows you to minimize potential damage and to maintain high quality and performance of the product.



1.1. Instructions and equipment for handling

- For unloading and handling the rolls we recommend using handling equipment with a steel rod of at least 3 m length.
- If you only have a fork-equipped handling equipment, a plate must be placed on the fork. The roll must be rolled onto the fork in a way that prevents its puncture.
- During any loading, unloading or handling in general, take utmost care to avoid mechanical damage to the products (the material should not be handled at a temperature below 5 °C).

Note:

When following the above instructions, you must proceed in accordance with the generally applicable rules for ensuring work safety.

1.2. Instructions for storage

- Artificial turf should be stored ideally in sheltered, dry, dust-free and well aired spaces.
- Should the rolls be stored outdoors, they must be adequately protected against wind and rain.
- The rolls must be placed upon a solid, stable, flat, and properly drained base (asphalt or concrete surface) in a maximum of three layers.
- Individual rolls must be placed such that they are supported along their entire length. Avoid any mechanical load (especially folding) to prevent damage or deformation of the products, or a decrease of their performance.
- Recommended temperature for turf storage is between 5 and 25 °C at 60 % relative humidity.
- Material temperature must not fall below -20 °C nor exceed 40 °C. When expecting temperatures outside this range, protect the material adequately (e.g. by covering).
- If the rolls are stored outdoors and the laying itself will take place indoors, the rolls must be moved to the site of the placement to acclimate (especially important in cold conditions) for at least 24 hours before installation (acclimation period depends on climatic conditions).
- The rolls in storage must not be exposed to heat stress and direct sunlight.
- Artificial turf must not be stored together with chemicals or other substances where inertness towards the stored material cannot be guaranteed.
- Storage period should be reduced to the shortest time possible.

Not observing the above rules may lead to damage and deterioration of the synthetic turf. Applying the right handling and transporting equipment with proper procedures for transport, storage and handling will help maintain the quality of JUTAgrass products.

Claims cannot be accepted if damage was incurred due to improper handling or storage.

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Parameters of flatness of individual layers of the sub-grade

(measured by a 4 m lath)

Existing soil	± 30 mm
Carrying layer	± 20 mm
Levelling layer	± 10 mm

Minimum degree of compaction of the individual layers of sub-grade

	Deformation module	
	Dynamic module - E_{vd}	Static module - E_{v2}
Sub-base	26 MPa	45 MPa
Constructional layers	32 MPa	60 MPa
Verification of the property	Dynamic test	Static test

A condition for performing construction work on firm surfaces is maintaining the minimum value of remolding index $E_{def,2} = 45$ MPa for fine-grained soils, and 120 MPa for coarse-grained soils, respectively. The remolding index must be verified by a load test according to relevant standards (ČSN 72 1006).

The sub-base must be done with proper transverse and lengthwise slopes and deviations in elevation, as well as in accordance with directional demarcation. The sub-base must be effectively drained and have a flat, smooth and homogenous surface that conforms to the requirements for flatness.

Along the entire thickness of the active zone, a specified degree of compaction of 100 % (Proctor-Standard) must be observed. The sub-base must exhibit a value of remolding index in the second load cycle of $E_{def,2} = 45$ MPa. Prior to laying constructional layers, the sub-base must be cleaned. Construction work on constructional layers must not commence without acceptance of the sub-base.

All material must be accompanied with appropriate technical sheets, certificates, including certificates of conformity. The loose materials used for construction must meet standard requirements for sporting fields.

The base beneath the artificial turf should be solid, compact, free from sharp edges, bumps and local unevennesses, and any chemical or mechanical impurities. If the base does not meet these requirements, it must be properly adjusted.

In the attachment, find the composition of the field construction appropriate for laying of artificial turf. If the turf is to be laid on a different kind of sub-base, you must contact and consult the technical department of JUTAgrass.

The contractor for the sub-base is responsible for its construction according to required technological standards and project documentation.

The construction supervisor should regularly check and approve the base parameters specified below:

- Checking proper realization and conformity with project documentation of the drainage, including:
 - Checking proper earthwork, the spacing of drainage tubes, the length and depth of the piping, incline the of the piping (acceptable deviations of drainage piping incline: max \pm 30 mm in cohesive soils and \pm 15 in loose soils)
 - Checking the connections and other elements of the drainage
 - Checking the placement and backfill of the piping
- The individual layers of base construction exhibit the required fractions and their thicknesses
- Directions and inclines within the base correspond to project documentation
- The layers of the base meet the requirements for degree of compaction, moisture, remolding index, flatness, etc.
- The surface does not exhibit any sharp edges, puddles (indicating bad drainage), ruts from constructional machinery, or tracks left by auxiliary leveling machinery which would require refilling and compaction
- In the case of laying on an asphalt slab, the surface must be properly aired. This process can take about 10 – 14 days since the installation of the last asphalt layer, depending on climatic conditions.

The contractor of the turf laying must accept the base construction (in terms of surface quality) before they commence installation of artificial turf. The acceptance of the base must be formalized by a written record signed by all participating parties.

The manufacturer of the artificial turf recommends checking the following points before accepting the base construction:

- A check of permeability of the sub-base according to DIN EN 18035-6
- Layers of the base meet the requirements for degree of compaction, remolding index and flatness
- Directions and inclines within the base correspond to project documentation

3. Shock pad

Artificial turf is usually laid upon a gravel base, concrete or asphalt. For the purposes of dog agility we recommend laying a shock pad beneath the turf. For this purpose, we have developed the JUTAgrass Agility system, consisting of the textured turf Play Comfort, the pad Matchbase 10 mm thick and a special tape. The pad is laid on the base (gravel, concrete or asphalt). The strips of the shock pad are then freely placed next to one another (not being fixed together by a tape).

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4. Installation of artificial turf with a shock pad

4.1. Climatic conditions

Overall quality and compactness of the surface depends on the installation being done at appropriate climatic conditions. During the entire course of construction work the ambient temperature should not fall below 15 °C. Installation should not proceed during rain or snow. Air humidity should correspond to the local climate (the maximum range of relative humidity values for the laying is 30 – 80 %). The laying of the surface can proceed even if temperatures momentarily (overnight or at dawn) fall below 10 °C. It must be, however, taken into account, that at lower temperatures the turf becomes stiffer and handling may be more difficult.

4.2. Instructions for artificial turf laying

During the laying of the artificial turf (hereafter AT), the following instructions must be observed:

- When installing the individual strips, use only the constructional machinery that does not damage the base and conforms to the following rules:
 - Driving slowly
 - Sufficiently wide turns
 - No sudden braking or accelerating
 - Using low-pressure, low-profile wide tyres; surface pressure of the wheels must not exceed 0.75 kg/cm²
 - Maximum allowed weight per axle is 1000 kg
- When handling the roll of artificial turf by rolling, you must pay attention to the unwind direction
- If the rolls are stored outdoors and the laying itself will take place indoors, the rolls must be in appropriate advance moved to the site of the laying to acclimate (especially important in cold weather)
- The rolls of AT must be unwound in a steady and safe manner (e.g. using machinery such as TurfRoller)
- Any damage to AT incurred during the installation must be appropriately mended
- In the case of claims, secure photographic documentation and roll labels, and contact a responsible person immediately, who will then contact the manufacturer. If a defect is discovered, all handling with the damaged roll is prohibited (such as gluing and trimming).

The following measures should also be observed:

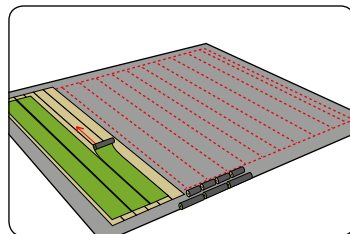
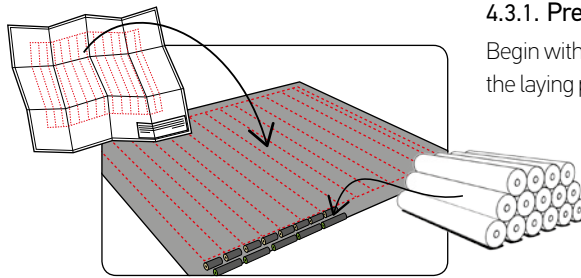
- No smoking on AT or in its vicinity
- No placing of hot items on AT or in its vicinity
- No cutting or sharpening of metals on AT or in its vicinity
- No welding, no open fire on AT or in its vicinity

4.3. Laying of artificial turf with shock pad

Prior to the laying itself, the base must be checked and accepted. The acceptance of the base must be formalized by a written record signed by all participating parties.

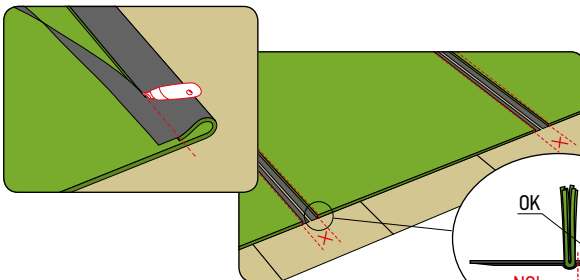
4.3.1. Preparations

Begin with the positioning and directing individual rolls on the area according to the laying plan of the artificial turf and shock pad for the particular sporting field.

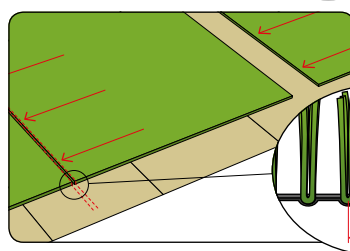


Installation of the shock pad is concurrent with the installation of the turf. The pad is always unrolled to the width of one turf roll.

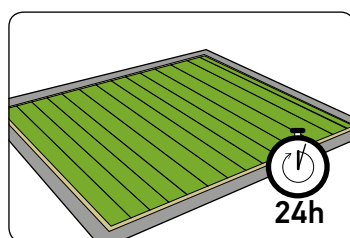
The shock pad is supplied in rolls. The roll is unrolled to the required length, with a 30 cm overlap. During unrolling the pad must be agitated so that the material does not shrink (it is originally wound at a pulling stress). The strips of the pad are laid to fit tightly next to each other. The seams are not taped nor glued.



From each of the turf roll, an edge is cut-off (the stitch line closest to the edge). The cut is led immediately next to the inner part of the suture. With the roll unrolled, cuts can be performed also from the backside by a special cutter or utility knife.



In between the individual rolls, leave a gap corresponding roughly to the width between the stitch lines. The rolls must not overlap, they must be sufficiently stretched and free of waves.



After unrolling and trimming of the edges the turf and the pad must be let to acclimate. This period of relaxation depends on the climatic conditions, storage conditions and duration. The recommended relaxation period is at least 24 hours.

After acclimation the shock pad may be cut to the desired length using a very sharp knife.

7.3.2. Gluing This document is created for the purpose of providing basic information to project designers, contractors and investors. Being only a recommendation, it does not replace proper project documentation (nor contract documents). The seams of the turf are joined unilaterally by a special tape for artificial turfs. Due to constant improvements to the products and technological procedures, the information contained herein may be altered without prior notice.

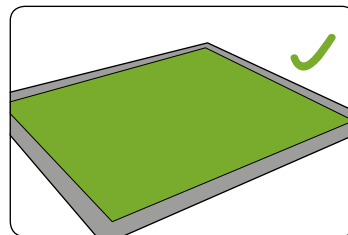
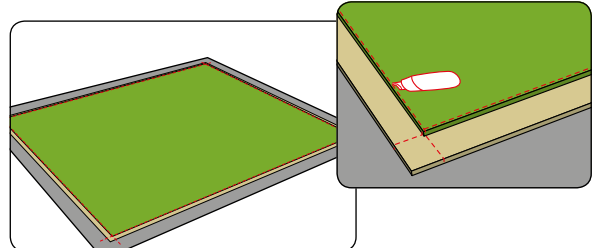
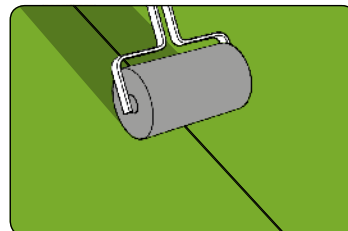
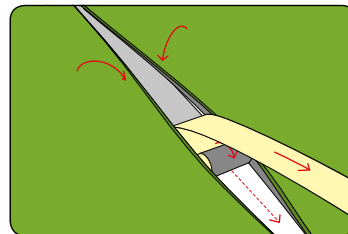
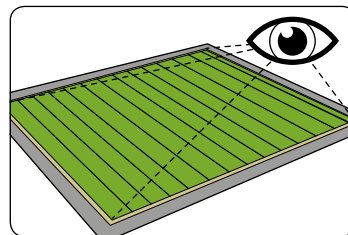
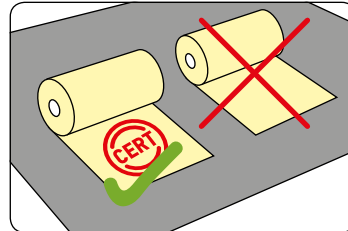
Prior to the taping itself you should check the stretch of the turf and the width of the gap between the turf rolls.

Insert the tape between the turf rolls. Then remove the protective foil and gradually unroll the tape roll while the turf is being pushed into the tape. During the entire course of the taping, keep an eye on the centering of the tape along the midline of the seam.

For the installation it is important to keep a temperature of at least 15 °C and all the materials perfectly dry; otherwise, the tape will not adhere to the turf.

At the end, trim all the overlaps of the area and the pad to their final dimensions.

The surface can immediately withstand load.



5. Tools necessary for the installation

For the laying of artificial turf you will need a basic set of tools intended for the handling, cutting, stretching and taping of the turf. The set should contain the following:

1 Seam fix



2 Gripping tongs



3 Edge trimmer



4 Grass cutter



5 Spare blades



6 Special knife



7 Tape measure



8 Turf puller



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Proper maintenance is essential for:

- surface quality
- playing characteristics
- long lifespan
- safety

6.1. Keeping a maintenance log

Keeping a maintenance log is a very important method of tracking the maintenance and use of the field. It enables the operator to record dates, types of activities, length of continuous maintenance, staff training, machinery used, etc.

Maintenance is based on the following simple principles:

- keeping the surface clean
- repairing minor defects before they become serious

To ensure long-lasting performance at full functionality it is imperative to follow the maintenance log as well as the maintenance manual.

Keeping and archiving the maintenance log throughout the service life of the product is a condition for the turf system warranty.

6.2. Cleaning the turf

The cleaning of the turf for the purposes of (dog) agility is done by special cleaning machines that combine vacuuming with rotary brushes.

Within the range of common use, industrial vacuum cleaners can be employed for the removal of hair. To remove dog excrements, use water with a disinfectant. Apply the solution to the affected area and then treat it with an industrial vac.

6.3. Snow removal

When mechanically removing snow, great care should be taken to avoid damage to the artificial turf. Snow can be removed either with a special plough designed for artificial turf, a rubber-edged front snow blade, or a snow blower. Both the blade and the blower should be set above the turf surface and equipped with guiding wheels.

7. Maintenance and check-up of artificial turf

Every maintenance step must be recorded and archived in the maintenance log for the corresponding sporting field.

7.1. Daily maintenance and check-up

Daily maintenance focuses on checking the state of the field and doing basic treatment. It involves the following procedures:

- removal of municipal waste such as plastics, paper, cans, bottles, etc.
- removal of organic debris such as needles, leaves, etc. with a leaf blower or leaf collector
- visual check of the field and the seams

7.2. Weekly maintenance

- removal of moss, algae, and other vegetation

Weekly maintenance of the turf focuses on the state of the turf, pollution of the surface and vegetation growth. It is especially important in rainy regions and also wherever daily maintenance is not feasible.

Growth of vegetation can be avoided by regular visual checks and mechanical removal. Timely removal of vegetation prevents its rooting and spread.

Plants should be removed by picking, without the use of sharp tools in order to avoid damaging the fabric or fibres.

7.3. Monthly maintenance

- brushing to achieve perfect removal of all debris from the area
- cleaning drainage infrastructure
- cleaning field surroundings and removing dirt and debris that could be brought into the field
- removal of weeds and vegetation around the field

8. Inspection of artificial turf

Artificial turf is subject to wear and tear caused by regular use, the weather, air pollution, etc. Damage may be caused mainly by improper usage (inadequate shoes), activities for which the turf is not designed, and insufficient maintenance.

To ensure that the turf has not been damaged nor it is in danger of potential damage, regular checks must be carried out. Any defects found must be fixed immediately.

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When operating a sporting field with artificial turf, the following standards must be observed:

- To prevent soiling and staining the field surface by mud and dirt from the shoes, cleaning zones must be established (e.g. cleat cleaners, rugs, etc.).
- Use only appropriate shoes that do not damage the fiber and do not cause its pulling out. It is forbidden to use shoes with metal soles or cleats, soles with metal core, or trekking shoes. Soles without a profile pose a high risk of injury.
- The field must only be used for the purposes for which it was built, and not for any other activities or sports such as javelin, discus, in-line skating, etc.
- It is forbidden to use chemicals not approved by JUTA a.s. Some chemical substances may negatively impact the lifespan of the artificial turf. We thus recommend that any such use be consulted with JUTA a.s.

Circulation of vehicles on artificial turf is permitted only to the maintenance machinery authorized by a specialized company or JUTA a.s. Artificial turf must not be in contact with petroleum-based substances, including fuels. Vehicles must be refueled outside the field. In the case of fuel leakage, sand or sawdust must be put on the spill immediately and the liquid must then be completely removed.

Vehicles circulating on the field must be equipped with low-pressure, broad tyres with a low profile, not exceeding 0.75 kg/cm² of surface pressure on the turf system. Observe low speed and always make wide turns; prevent jerky braking or acceleration.

If circulation of a heavy vehicle is unavoidable, the areas of artificial turf must be covered so that weight can be evenly distributed, not overloading the surface. Cover material should be carefully selected in order to avoid damage to the fiber. Freely accessible or public grounds must be protected against vehicle entry and other unauthorized use by appropriate construction elements.

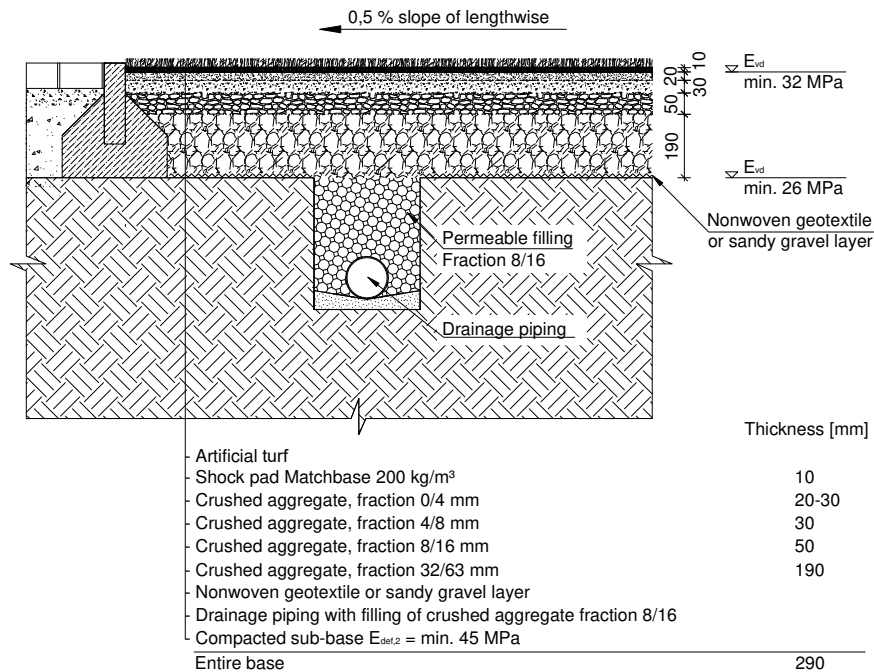
If the sport field is used for events other than for which it was designed, appropriate protective construction work should be carried out (e.g. covering). During such activities, point load on the turf system cannot be controlled and damage may be inflicted on the turf.

WARNING!












Fire, smoking, and pyrotechnics are strictly forbidden on the artificial turf and in the surrounding area.

10. Attachment – a sample cross-section

10.1. Arrangement with crushed aggregate



Explanatory notes for materials:

	Crushed aggregate Fraction 0/4 mm		Permeable filling Fraction 8/16		Concrete pavement
	Crushed aggregate Fraction 4/8 mm		Sand		Binder course
	Crushed aggregate Fraction 8/16 mm		Sub-grade		Crushed aggregate
	Crushed aggregate Fraction 32/63 mm		Plain concrete		

Technical conditions:

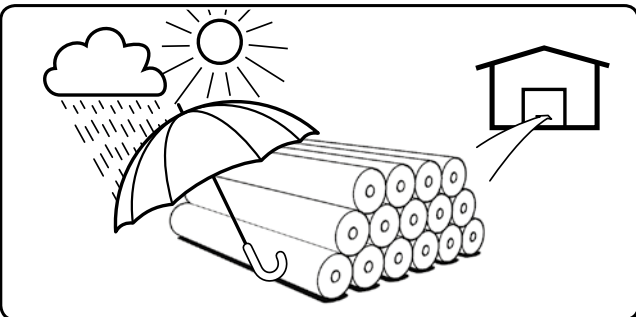
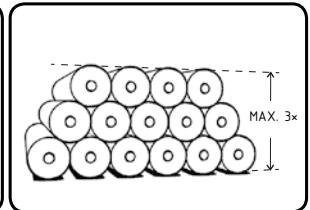
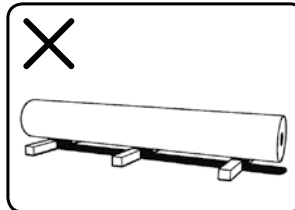
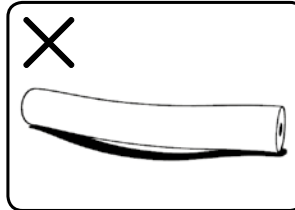
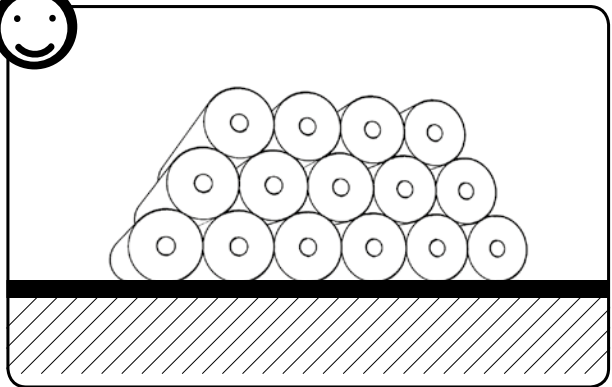
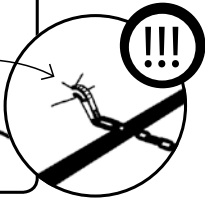
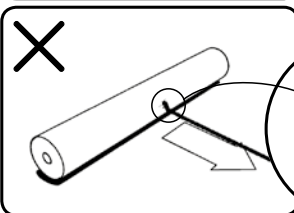
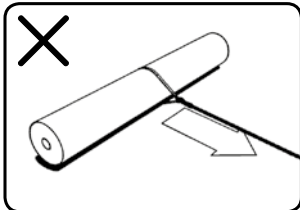
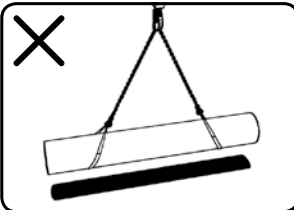
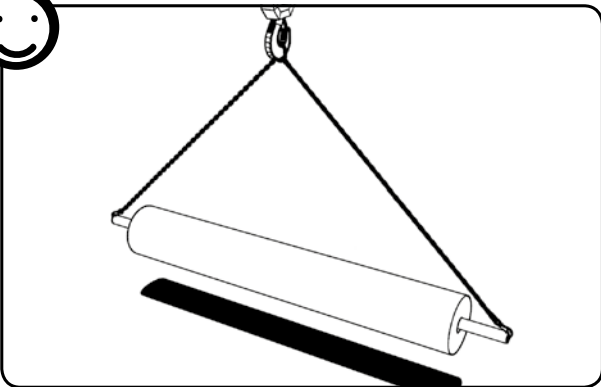
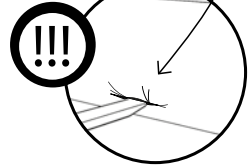
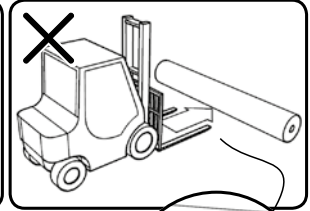
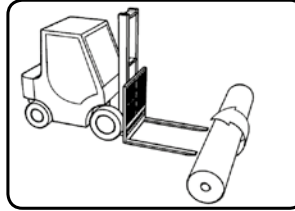
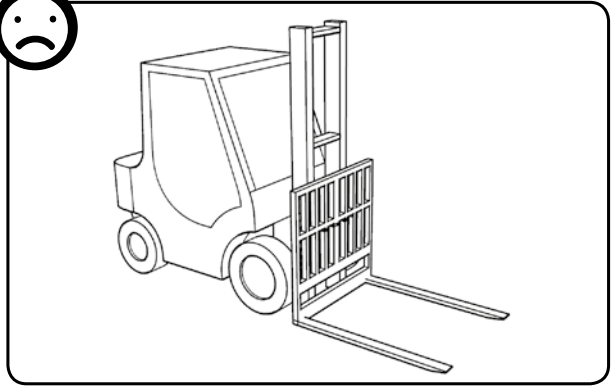
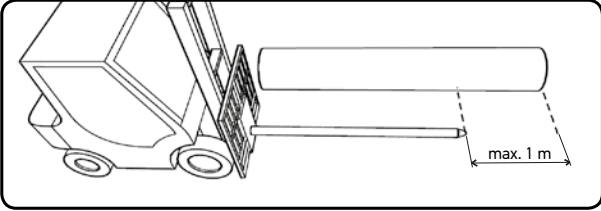
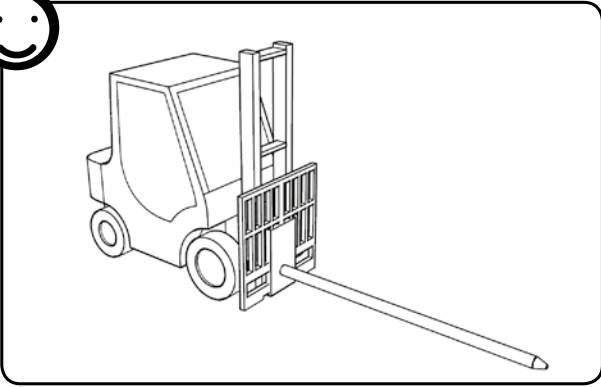
- Specified in the standard DIN EN 18035-7:2014-05
- Parameters of levelness of the individual sub-grade layers (measured by a 4m lath)
 - sub-base ± 30 mm
 - carrying layer ± 20 mm
 - leveling layer ± 10 mm
- All materials used must be accompanied with technical sheets, certificates, and conformity certificates
- The loose materials used for construction must meet standard requirements for sporting fields ČSN DIN 18035-4
- Necessary geotechnical research and assessment
- Sub-grade drained according to project documentation
- Base layers must be compacted stepwise layer by layer
 - Minimum degree of compaction of the individual sub-grade layers
 - sub-base - E_{vd} = min. 26 MPa tested by dynamic test
 - E_{v2} = E_{def,2} = min. 45 MPa tested by static test
 - constructional layers - E_{vd} = min. 32 MPa tested by dynamic test
 - E_{v2} = min. 60 MPa tested by static test
- If the final layer is made from crushed aggregate of the fraction 0/4 mm, it is necessary to compact it while moist

Note:

- This section depicts a compositional design of our turf system
 - The composition has standard dimensions
 - Actual dimensions will be adjusted according to geotechnical assessment for which the project designer or architect bears responsibility

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This document was created for the purpose of providing basic information to project designers, contractors and investors. Being only a recommendation, it does not replace proper project documentation (nor contract documents). Due to constant improvements to the products and technological procedures, the information contained herein may be altered without prior notice.



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