Manual for the construction and maintenance of cricket pitches with artificial grass mats

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Introduction

This manual is written to assist cricket clubs, municipalities, contractors, and other stakeholders with the construction and maintenance of cricket pitches featuring artificial grass mats, as well as the construction and maintenance of cricket practice cages.

A cricket pitch consists of two parts:

- A hardened sub-base;
- An artificial grass mat.

This document is initially limited purely to the activities, materials, and types of cricket mats needed to construct and maintain a cricket pitch properly.

It is important to maintain the cricket pitch well after construction. Maintenance is a task that must receive constant attention within the club. It is recommended that each club appoint someone responsible for the maintenance of the cricket pitches (execution and/or supervision).

1. Background

1.1 History

Cricket has been played in the Netherlands since 1879. Initially, matches were played on any available grass fields without a specific cricket pitch. With the transition to overarm bowling around 1900, safe cricket pitches were necessary. Initially, bumpy pitches were filled with soil, and the playing surface (the cricket pitch) was rolled with heavy hand rollers. Around 1930, almost all clubs played on a gravel or shell-based sub-base. To prevent excessive wear of the cricket ball, this sub-base was then covered with coconut mats. Between 1960 and 1990, almost all clubs in the Netherlands played on these gravel-like cricket pitches with coconut mats. These cricket pitches were generally of comparable quality.

With the advent of real grass pitches (the international standard for cricket) in the Netherlands in the early 1990s, the bounce, turn, and seam of the cricket ball changed, and artificial grass mats were found to be a solution to approximate these grass pitch characteristics as closely as possible. Previously, coconut mats were rolled up after each match. Often, the cricket pitches were maintained between matches. Holes were filled, and the sub-base was regularly rolled. Possibly even more important, rolling up the coconut mats allowed the sun to harden the gravel-like sub-base during non-match days.

With the introduction of artificial grass mats, which are almost always nailed or screwed down, the mats remained after matches, partly to prevent stretching and the formation of folds in the artificial grass mat (due to rolling up). The sun then played a less significant role in hardening cricket pitches. Rain had a free rein, and cricket pitches remained extremely moist for a long time due to the lack of direct sunlight. Moist cricket pitches are, by nature, less hard. With the introduction of artificial grass mats, the necessary maintenance of cricket pitches as previously described disappeared. As these artificial grass mats remained after matches, less maintenance was done. Therefore, cricket pitches are now moister and softer, and more irregularities in the sub-base now occur.

1.2 The current situation

Based on pitch reports prepared by umpires, it can be observed that there is currently a large variability in the quality of the cricket pitches across the country. Some clubs do little or nothing in terms of maintenance, while others continue playing on the same unworked pitch. The difference in quality of current cricket pitches in the Netherlands is caused by insufficient maintenance or by the use of materials that may be cheaper to purchase but do not deliver the desired result in the long term.

1.3 Objective

The KNCB aims to have good and especially reliable cricket pitches at all levels in the Netherlands. The KNCB follows the guidelines of the ICC (*see figure 1.3*)

ONE DAY - INTERNATIONAL AND TWENTY20 INTERNATIONAL PITCHES

The objective shall be to provide a pitch that is more favourable to the batsmen by providing a surface for good shot-making, and behaves consistently throughout the course of the match so as to provide an even contest for both teams.

Fulfilment of the lowest criteria will determine the overall rating for the pitch. For example, if the pitch demonstrates no unevenness, is just lacking in carry and/or bounce and more than occasional turn, then it must be rated "Below Average".

Referees should take into account the nature and identity of spin bowlers when assessing the amount of turn that the pitch has demonstrated.

ODI/T20I PITCH RATING	Unevenness	Seam Movement	Carry and/or Bounce	Turn	DEMERIT POINTS
Very Good	Little or no unevenness	Little or no seam movement	Good	Little or no turn	None
Good	Little or no unevenness	Little or no seam movement	Just lacking	Little or no turn	None
Average	Occasional	Occasional	Lacking	Occasional	None
Below Average	More than occasional	More than occasional	Minimal	More than occasional	1 Point
Poor	Excessive	Excessive	Very Minimal	Excessive	3 Points
Unfit	A pitch is rated unfit only if it is dangerous				5 Points

Figure 1.3. Guidelines of the ICC for international pitches

The KNCB, in collaboration with the Accommodation Committee, has conducted tests on several cricket pitches with artificial grass mats in the Netherlands. The results of these tests are partly decisive for the standard that has been established by NOC*NSF on behalf of the KNCB in collaboration with two external parties.

1.4 Safety

Cricket pitches must be safe and reliable during every cricket match. The safety of the players must always be the main priority. All cricket pitches in the Netherlands must, therefore, be safe. If uneven ball bounce is observed, pitch maintenance must be given top priority. Uniform ball bounce and no irregularities in the cricket pitch are two examples of this. Only then do bowlers and batters have equal opportunities.

1.5 Guidelines

During a match, the entire surface of the cricket pitch must be dry and must also comply with the ICC guidelines mentioned in the objective (*see figure 1.3*).

The turn and seam movement should also largely depend on the technical qualities of the bowlers and should not be caused by irregularities in the pitch. Ball movement due to insufficient pitch quality is highly undesirable and can also be particularly dangerous.

A cricket pitch must drain well and be free of stones. A good camber of the pitch, width-wise, is essential to drain water to the sides. There should be no edges or pits in the sub-base

1.6 Accountability

This manual has mainly been created by mapping various pitch construction experiences. Some clubs are still forced to dig a cricket pitch annually. On fields often shared with football, the pitch is dug in annually in mid-April and then dug out again at the end of August. This document uses the knowledge available at these clubs.

The KNCB's Accommodation Committee plays an important role in monitoring the quality of cricket pitches in the Netherlands. Whenever a captain and/or umpire reports dissatisfaction with a pitch, the committee, if necessary in consultation with the competition manager or the KNCB office, will contact the club and will advise on how to resolve the identified problems as quickly as possible.

The Accommodation Committee is also available for all other matters concerning cricket accommodations and is advised by, among others, the England and Wales Cricket Board (ECB), NOC*NSF, and other relevant and professional organisations. For questions or comments, contact the KNCB office.

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2. Cricket pitches with artificial grass mat (match and practice pitches)

2.1 Introduction

Cricket pitches used for matches and those installed in practice cages are, hereafter, referred to as 'match pitches' and/or 'practice pitches.' For both types of pitches, grass or other vegetation should never grow on them. Algae growth and other types of vegetation on the artificial grass mats increase the risk of injury. The construction of cricket pitches with an artificial grass mat must comply with the standard as found *in Appendix 1: Cricket Pitch Standard.*

2.2 Quality of cricket pitches with artificial grass mat

All pitches with artificial grass mats must perform within the limits specified in the standard included in *Appendix 1: Cricket Pitch Standard*.

2.2 Essential

No (well) constructed cricket pitch with an artificial grass mat is maintenance-free.

3. General guidelines for cricket pitches

3.1 Location of cricket pitches

Ideally, a field is available where only cricket is played. However, in the Netherlands, cricket pitches are usually located between two football fields. The cricket pitch can then remain during the football season. An additional advantage is that cricket can be played year-round when no other sport is practised.

If installed in the middle of a single sports field (where there are no two adjacent fields), the cricket pitch will usually have to be dug in before the cricket season and dug out again after the season.

Annually dug-in cricket pitches are initially soft and need about six weeks to harden (with a lot of maintenance required).

From a cost perspective, it is also advisable to find a spot at a sports facility where the cricket pitch can remain for twelve months a year.

3.2 Placement and direction of match pitches

Where possible, a cricket pitch should be constructed in a north-south direction. Cricket pitches are always centred in the middle of the cricket field (*see figure 3.2*).

By constructing the cricket pitch in a north-south direction, it is ensured that, at sunset, the batter, who looks towards the bowler, does not lose sight of the ball against the setting sun.

Where this is not possible, tall trees may help prevent directly looking into the sun.

If this is not the case, it is advised to contact the KNCB's Accommodation Committee.

Figure 3.2. Placement and location of cricket pitches

3.2.1 Sight screens

Every cricket field in the Netherlands must have sight screens (*see figure 3.2.1*). Sight screens contribute to safety and, according to the Accommodation Regulations (up-to-date versions of the regulations are available on the KNCB website), must be at least 9 meters wide and 4.5 meters high. Sight screens are placed on both sides of the field, always exactly in line with the cricket pitch. Many types of constructions are possible for the sight screens. For the colour of the screens, refer to the Accommodation Regulations on the KNCB website.

Figure 3.2.1. Placement of sight screens.

3.3 Dimensions of a cricket pitch

Cricket mats supplied by the KNCB are 30 meters long and 2.74 meters wide. For more information, see *section 7 Artificial Grass Mat*.

Once the mat is delivered, the club must cut out the wicket holes and apply the markings themselves (*see figure 3.3)*

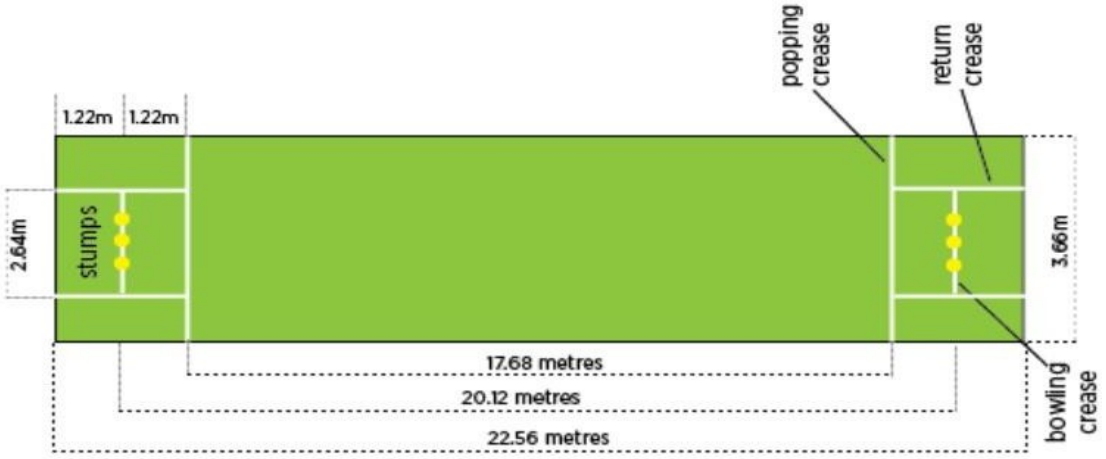


Figure 3.3. Dimensions of a cricket pitch.

3.3.1 Cutting out wicket holes

For cutting out wicket holes and measuring the distance between the two wickets, first measure the artificial grass mat and do not make assumptions about the dimensions provided by the supplier. The distance between the wickets must be 20.12 meters. The wickets (3 stumps at each end of the pitch) themselves are 22.86 centimetres wide. Based on this, it is advised to cut a piece of 30 centimetres by 10 centimetres from the pitch. The final markings must then be applied at the correct place on the mat. To determine the location of the middle stump on a KNCB-supplied cricket mat, it is important to measure beforehand. Once this is done, the following calculation can be used:

Length of artificial grass mat minus the distance from wicket to wicket (20.12 meters). This gives a 'remainder' that must be divided by two. The result is what should be maintained at both ends and is the position where the wicket should be placed. Here is an example with measurements: Length of mat is 30 meters – minus 20.12 meters from wicket to wicket = Remainder 9.88 divided by 2 sides = 4.94 meters from both ends.

The width of the mat is 2.74 meters. The middle stump is placed at 1.37 meters. Cut (straight, of course) around the just determined location of the middle stump a piece from the mat of 30 centimetres (in the width of the mat) by 10 centimetres (in the length of the pitch). Naturally, for mats shorter or longer than 30 meters, a different calculation must be applied according to the indicated principles

3.3.2 Markings

Pitch markings can be applied with good ground paint according to the above scheme. Wooden templates are commercially available for applying markings (*see figure 3.3.2*).
When applying markings, also consider the 'protected area' (*see figure 3.3.2*). The Laws and Playing Conditions make no distinction between grass pitches and pitches with an artificial grass mat [1].

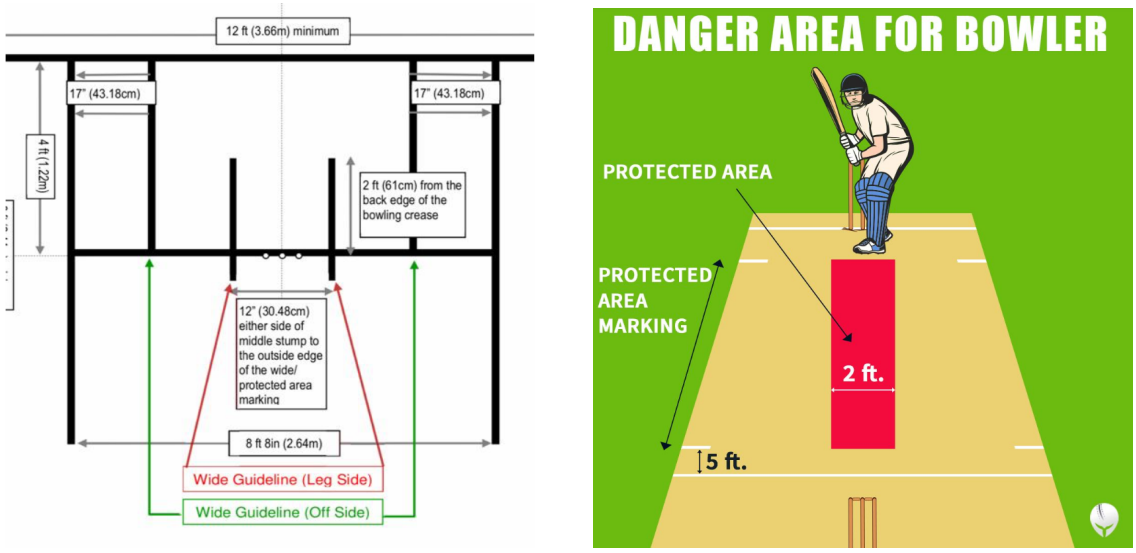


Figure 3.3.2. Markings of a cricket pitch and protected area.

[1] Grass wicket clubs in the Netherlands often play on a different cricket pitch almost every week. These clubs have experience with pitch markings, so it is advisable to contact them for queries.

3.4 Points to consider during execution

3.4.1 Height relative to the ground level

A common mistake is that the cricket pitch is lower than ground level (*see figure 3.4.1*). The resulting edge can be dangerous because a ball bouncing on it can then make unpredictable movements.

In short, the pitch must be slightly higher or at least exactly level with ground level. When constructing, keep in mind that regular rolling of the pitch causes the materials to settle, and the pitch will gradually lie slightly deeper

Figure 3.4.1. Height of the pitch relative to ground level.

3.4.2 Drainage

Cricket pitches must be surrounded by good drainage [2]. This drainage is necessary to drain rainwater as quickly as possible, ensuring player safety (slipping). Umpires ultimately decide if a field is playable. When digging the trench for the cricket pitch, ensure that the existing drainage is not damaged. At fields where the cricket pitch is placed between two existing sports fields, this is usually not a problem. However, where a cricket pitch is installed on a single sports field, there is a significant risk of damaging the drainage. The municipality can provide drawings showing where and how deep the drainage pipes are installed in the field.

[2] When digging out the ditch for the construction of a cricket pitch, one must ensure that the excavation work does not damage the existing drainage. For fields where the cricket pitch is placed between two existing sports fields, this will usually not be a problem. However, when a cricket pitch is placed on one sports field, the change of damage to the drainage is very real. Drawings of the draining pipe locations and depth can be requested from the municipality.

3.5 Risk assessment

For the construction of cricket pitches with artificial grass mat and practice cages, two important topics require attention before construction can begin:

- Safety of the proposed installation
- Quality of the installation

SAFETY	CONSIDERATIONS
Orientation	The direction of play should be north-south to avoid batting and bowling towards the setting sun. This is especially relevant in the evening and later in the season.
Trees (near the practice cages)	These can create shadows across the playing surface. In addition, fallen leaves can create hazardous conditions.
Roads	Roads cause noise, and the training activities can pose a safety risk to drivers and pedestrians. When roads are directly around the playing field and/or practice cage, it is advisable to place high ball catchers.
Paths	Users of paths may be at risk when passing the facility and may cause distraction to users of the practice cage. High ball catchers are also advised.
Soil conditions *(sand, clay, silt, peat)*	Soil conditions have a major impact on the quality of the facility as they influence the design.
Other facilities	Users of other (sports) facilities may be at risk if the cricket pitch or practice cage is built too close to that other (sports) facility and is used at the same time.

QUALITY	CONSIDERATIONS
Pitch	The quality of the materials used in the construction of a pitch or practice cage, the quality of the finish, and the playing performance of the pitch are all factors that must be taken into account in the risk assessment.
Cage construction	The quality of the posts, sleeves, crossbeams and other supports influences the durability of the practice cage and thus the safety of users and spectators.
Nets	The quality of nets, mesh size, and skirt affect the durability of the facility and the safety for users and spectators. A net width of 4.5 centimetres is usually used for cricket purposes.

Fastening materials	The quality of the fasteners, straps, laces, brackets, concrete, pegs and other attachments affects the durability of the practice cage and the safety of users and spectators.
Design	In addition to the aforementioned components, the design and layout of the exercise cage play a major role in the safety and durability of the cage.

FINANCE	CONSIDERATIONS
Purchase	Availability of funds for the construction of the training cage.
Maintenance *(regular and annual)*	A structural budget is needed to finance the annual maintenance of the practice cage.
Insurance(s)	Should the practice cage be insured against, for example, storm damage or damage that is caused intentionally or unintentionally?

4. Construction of the cricket pitch

4.1 Method/Step-by-Step Plan

4.1.1 Step 1: Safety above all

It is important to always pay attention to the safety of those involved in the construction of a cricket pitch. Materials may be used that are not handled daily.

4.1.2 Step 2: Excavation

After determining where the cricket pitch will be located, a trench is dug at least 40 centimetres deep, 30 meters long, and 2.74 meters wide (*see figure 4.1.2 for examples*). See *Appendix 1*: Cricket pitch standard specifications. Ultimately, the regular grass and the artificial grass must be at the same level without hard edges as a separation. If edges are installed, they must be below ground level and made of wood or plastic. Such edges are sometimes used to separate materials and to screw down the mat.

Figure 4.1.2. Excavation of a cricket pitch

4.1.3 Step 3: Materials for construction

The construction and composition of a cricket pitch are important. Specifications are provided in *Appendix 1*. If another construction or composition of materials is chosen, player safety may be compromised, and the quality of the cricket pitch will decrease

4.1.4 Step 4: Construction

Pour the sand into the trench, and compact the sand with a roller (*see figure 4.1.4*). Note that the sand must be watered for compaction, especially if it is dry, and that the sand layer is the required thickness everywhere.

Then, the soil (type of soil can be found in *Appendix 1*) is poured and distributed in the trench (layer thickness 10 centimetres). To compact the soil as well, it is wise to wet it thoroughly before rolling for better results. By compacting both layers well, the chance of pits at a later stage is minimal.

Then, the semi-hardening layer (layer thickness 4 centimetres) is applied. Once this is done, the semi-hardening layer must be rolled for the first time. By frequent rolling, the composition of the materials

becomes compact.

Regularly moisten the semi-hardening layer between rolling and let it dry before rolling again. Fill any pits that appear with the semi-hardening layer.

It is not advisable to compact the semi-hard surface with a vibrating plate during construction. This gives an irregular result of holes and bumps; furthermore, vibrating can cause the top layer to become too dense, which makes maintenance (loosening) more difficult (see maintenance at the beginning of the season).

Figuur 4.1.4. Hand roller

4.1.4 Delivery

After all the above steps have been completed, the entire cricket pitch is properly installed. It must now be checked/tested whether the construction meets the established standard. Several tests must be performed, which can be found in the standard (*Appendix 1*). If all test results fall within the established standard, a 'certificate' can be issued to the club by the executing party. Finally, interim maintenance of the cricket pitch is very important.

5. Maintenance of cricket pitches

5.1 Safety above all

It is important to always pay attention to the safety of those involved in the maintenance of a cricket pitch. Materials may be used that are not handled daily.

5.2 Maintenance at the start of the season.

In most cases, the artificial grass mat does not remain outside during the off-season, and nature has free rein from September to April. The grass at the edges of the cricket pitch will probably have settled in the top layer, and grass and weeds will also have appeared on the cricket pitch.
The edges must be trimmed again to bring the cricket pitch back to the correct size, and all grass and weeds on the cricket pitch must be removed.
In many cases, new semi-hardening material (see *Appendix 1* for specifications) must be applied to bring the cricket pitch back to the correct height relative to the surrounding grass. To achieve a good bond between the old and new semi-hardening material, the semi-hardening must first be thoroughly loosened. Then, with a leveller (see figure 5.2.1), the semi-hardening is evenly distributed over the cricket pitch. Only then can the new semi-hardening be applied and again raked (*see figure 5.2*) and smoothed (*see figure 5.2.2*). For levelling, handy tools are also available: a scraper on a handle, a rubber rake, and a smoothing blade on a handle. It is then recommended to pull everything tight with a 3-meter-long slat or beam. Water the pitch lightly and let the water evaporate before proceeding.
Once this is done, the dry pitch can be rolled for the first time. Note that rolling should be done when the pitch is dry. Rolling a wet pitch means the semi-hardening will stick to the roller, causing pits and bumps. The drier the pitch, the easier it is to roll.
After rolling, water again carefully, let it dry, and smooth again with a slat/plank. Fill every pit with semi-hardening (possibly after carefully scraping away the pit). Repeat this process several times.
For the first rolling, the following three points are important:

1. Levelling or scraping
2. Watering
3. Rolling
4.

Figure 5.2

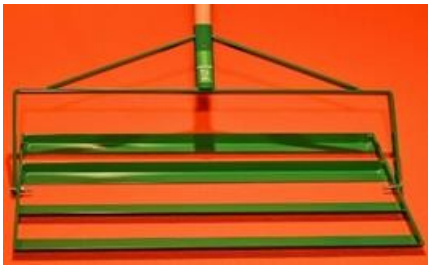


Figure 5.2.1

Figure

5.2.2

Figure 5.2.3 Alternative materials that can be used for scraping/levelling the pitch.

Rolling is to compact the semi-hardening. The cricket pitch slowly becomes hard. Then allow the sun to further harden the pitch. When rolling, make sure to stop at the end of the cricket pitch and not to drive the roller onto the grass at the ends, to preserve the grass. In the first few times rolling, semi-hardening may stick to the roller or remain on the scraper of the roller. When reversing the roller, the material ends up in the grass, which is not the intention.

5.2 Levelling or scraping before or during the season

Scraping can be done in various ways. It can be done with a grid work 50 centimetres wide on a handle with a hinge point on the grid. By moving this back and forth over the semi-hardening surface, the grid scrapes some of the semi-hardening off and drops it where there is a hole or pit.

Levelling can also be done with an aluminium scraper on a long handle (*see figure 5.2.1*). By making circular movements over the semi-hardening with the scraper, semi-hardening is also released to fill holes and pits. After scraping, a drag net should be pulled in the lengthwise direction of the cricket pitch, stopping in time to avoid getting semi-hardening on the grass

5.3 Watering

To compact and harden the semi-hardening surface, water must be given when the semi-hardening is dry. Make the semi-hardening thoroughly wet, and when the puddles have disappeared, rolling can be done. The above process must be repeated several times and can often take more than a day before the desired result is achieved.

5.4 Soft cricket pitches

A common complaint is that the cricket pitch does not become hard. This often occurs with newly constructed cricket pitches or those provided with new semi-hardening. As previously mentioned, semi-hardening is a natural product and therefore subject to wear. The wear of the semi-hardening is caused by temperature, moisture, and, not least, by play. Compared to sand, which consists of grains, clay consists of plates with little space between them. The more the semi-hardening wears, the fewer spaces there are in the semi-hardening. The coarse parts in the semi-hardening decrease over the years, making the semi-hardening more compact. This process takes time. Rolling a lot helps.

5.5 Hardening a cricket pitch

Remove the mat (be careful not to create folds when rolling up the mat). Rolling up the mat will create a bulge in front of the mat. Do not push the mat over this bulge, as it will cause a fold that probably will never come out. It is better to pull the mat completely backwards from the bottom so that the bulge disappears and the mat lies flat again. Another option is to slide the mat completely off the cricket pitch. That does require some muscle power, and it is advisable to do it with help.
Now that the mat is off the cricket pitch, the sun can harden the pitch. By frequent rolling, letting the mat 'sun', rolling, sunning, rolling, etc., the cricket pitch will harden quickly [3].

[3] Always first try to improve the hardness of the cricket pitch by removing the mat and letting the sun do its work (always in combination with extra rolling). After a few weeks, depending on the amount of sun, it will become visible that the hardness of the cricket pitch has improved considerably

5.6 Foot holes – play damage

Especially in places where the bowler takes off on the cricket pitch and where the batter stands, pits can form during the season. This damage from play can be easily repaired. Loosen the semi-hardening where the damage occurred and add new semi-hardening. Make a heap of new semi-hardening on the damaged spot, thoroughly wet the semi-hardening, and tamp it down firmly. A steel ground tamper (*see figure 5.6*) works wonders. Once the water has settled and the spot has dried, the excess semi-hardening can be carefully removed with the scraper.

Figure 5.6

5.7 Placing stumps (wicket)

Once the cricket pitch has been constructed, it is important to cut out pieces of semi-hardening at the location of both wickets to add clay. Most clubs place a (plant) box up to 10 centimetres deep in this cut-out piece of cricket pitch and fill it with local clay (or clay obtained from one of the grass wicket clubs in the Netherlands). To determine where the semi-hardening should be cut out, it is advisable to roll out the previously prepared cricket mat and lay it exactly in the right place. The holes in the mat that have been cut out indicate where the 'clay box' should be placed [4].

[4] The stumps stand better in the clay than in the semi-hardening. Moreover, by making the clay a bit wet, the stumps can be easily secured.

6. Cricket practice pitches/cages

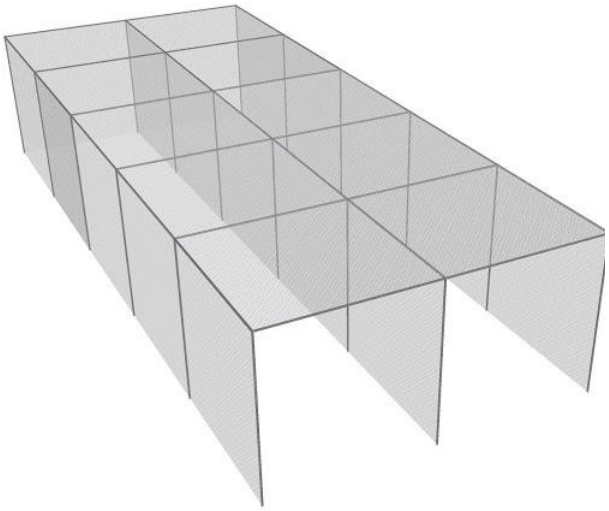
6.1 Location of the practice pitches

Just as with the construction of a (match) cricket pitch, it is also very important that the cricket practice pitches/cages are constructed in the right place.

The same principles apply as for constructing a match cricket pitch, so in a north-south direction. In addition, surrounding trees must be taken into account. Trees create shadows in the evening hours that make the ball difficult to see, which can endanger the safety of the player. Most (club) training sessions start after 6:00 pm.

6.2 Examples of practice cages

Below are some images of cages. When a club is considering constructing or replacing practice cages, it is advisable to first contact the KNCB. The association can provide advice.



The blue intermediate strips are available upon request from one of the KNCB suppliers.

Where there is no space for the construction of practice cages, the purchase of a mobile practice cage may be considered. This can then be driven over a match pitch.

Note: A mobile cage limits training opportunities and also puts extra strain on the field (the bowler's run-up can become bare, and with intensive use, there is little time for the damaged grass to recover).

6.3 Specifications of practice cages

Pitch:

- Cricket pitches have a run-up area for the bowler of at least 10 meters. For the construction of a practice cage, assume a total length of 40 meters and a width of 4 meters per pitch.
- When constructing pitches, use the standard for cricket pitches as included in the appendix of this document.

Cage structure:

- Lengte approximately 25 meters
- Height 4 meters

Nets:

- As a white ball is mainly used nowadays, it is advisable to use black nets.
- Let nets hang loose or at least not tightly stretched. Balls hit into the net should fall down.
- Ensure that all net connections are completely closed so that no ball can pass through for the safety of people around the cage.

Pole protection:

- Nets always hang on the inside of the poles.
- Balls may bounce back from the construction poles. By protecting the poles with pipe insulation, bouncing is prevented.

Power supply:

- Consider installing electricity for, for example, the use of a bowling machine

Screen:

- From the cage, a dark background is necessary because a white ball is used. Sometimes a background of shrubs suffices. However, it is advisable to use a 'screen.' A screen can be made of solid material, such as planks, but nowadays mesh cloth is often used. Mesh cloth is more vulnerable and less durable than, for example, wood. For the screen, maintain a width of at least 4 meters and a height of 4 meters

6.4 Specific points of attention for practice cages

- Please take into account a possible permit application for the construction of an exercise cage
- Take into account a KLIC notification (are there pipes underground where construction is taking place)
- Take into account any Right of Superficies. The owner of the land on which a cage is located becomes the owner of an exercise cage by means of accession

7. Artificial grass mat

The artificial grass mat is an essential part of a cricket pitch and is part of the established standard (see *Appendix 1* for the specifications). It is, as it were, the last step of the process of constructing and/or maintaining a cricket pitch and the mat is just as important as using the right materials and the quantities used for the construction of the cricket pitch or the maintenance carried out.

The artificial grass mats with which the KNCB has good experience are the Robusta mats. These can be ordered via the KNCB. If a club, municipality, or other party intends to deviate from the Robusta artificial grass mat available from the KNCB, consult the KNCB before purchasing a new artificial grass mat.

If a club, municipality, or other party ultimately chooses to purchase another artificial grass mat than one recommended by the KNCB, it is important that the result meets the established standard.

Conclusion

If, despite the above explanation, it is not possible to construct a cricket pitch that meets the standard, the KNCB Accommodation Committee is ready to provide further advice.

Appendix 1: Specifications of a cricket pitch

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NOCNSF-KNCB2-15.1 **Normblad: 1 / 4** **2022 Apr**	**CRICKETPITCH** Wedstrijd en Training	NOC*NSF

Deze norm is opgesteld door de KNCB.

Deze sporttechnische norm is gebruiksgebonden en van toepassing op een cricketpitch met een kunstgras toplaag.

Voorts zijn van toepassing al die maatgevende materiaaltechnische normen die constructiegebonden zijn.

Sporttechnische normen

Eigenschappen

Algemeen

- de pitch dient uitgevoerd te worden in één en dezelfde constructie
- de constructie dient uniform in opbouw en samenstelling te zijn
- het oppervlak dient naadloos te zijn

Testmethode:CN/C1.1

Afmetingen en belijning

- conform accommodatiereglement KNCB

Testmethode:CN/C2.2

Hoogteligging

- afschot mag via een één- of tweezijdig afschot worden aangebracht
- in de breedterichting is een maximaal afschot van 1,25 % toegestaan
- in de lengterichting is geen afschot toegestaan
- de afzonderlijke hoogteliggingen in één hoogteliggingsraai mogen niet meer dan 10 mm van de gemiddelde hoogteligging in die raai afwijken

Testmethode:CN/C2.1

Vlakheid

- een maximale oneffenheid van 6 mm is nog juist toegestaan
- over een afstand van 300 mm is een maximale oneffenheid van 4 mm toegestaan
- scherpe overgangen (zogenaamde drempels) mogen niet voorkomen
- binnen 1 meter mag slechts één oneffenheid voorkomen
- overgang pitch omliggend oppervlak, maximale oneffenheid 8 mm.

Testmethode:EN 13036-7

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NOCNSF-KNCB2-15.1 Normblad: 2 / 4 2022 Apr	CRICKETPITCH Wedstrijd en Training	NOC*NSF

Eigenschappen

Verticale vervorming

≤ 2 mm

Testmethode:CEN/TS 16717

Schokabsorptie

10 - 25%

Testmethode:CEN/TS 16717

Energierestitutie

≥ 70%

Testmethode:CEN/TS 16717

Torsie

25 Nm - 50 Nm (dimpled rubber sole)

Testmethode:EN 15301

Balstuit verticaal

≥ 400 mm

Testmethode:EN 12235

Balstuit onder hoek

≥ 86%

(cricket bowling machine, v_0 = 19,0 $m.s^{-1}$ +/- 0,5 $m.s^{-1}$)

Testmethode:EN 13865

Glans

oppervlak dient niet glanzend te zijn danwel schittering te vertonen

Testmethode:ISO 2813

Oppervlaktekleur

groen, egaal danwel gemeleerd

Testmethode:N/F13.1

Brandbestendigheid

zwaar ontvlambaar

Testmethode:DIN 51960

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Eigenschappen

Uniformiteit

(toleranties t.o.v. gemiddelde waarden)

constructieopbouw	geen
constructiesamenstelling	geen
schokabsorptie	+/- 5% (absoluut)
torsie	+/- 5 Nm
balstuit verticaal	+/- 10%

Testmethode:CN/C1.2

Constructie

toplaag	kunstgrasmat goedgekeurd door KNCB
fundering 1	50 mm +/- 10 mm (elke individuele meting) halfverharding conform NOCNSF-M12.a
fundering 2	minimaal 100 mm lava conform NOCNSF-M2.a
onderbouw	onderbouwdrainzand conform NOCNSF-M3.c

Constructie(hoogte) dient te voldoen aan NOCNSF-CONSTR2 en NOCNSF-CONSTR2.1

Testmethode:CN/C1.3

Duurzaamheid

≥ 5 jaar

Testmethode:N/C0.3

Condities

Klimaat

bij een temperatuur van 0 °C tot +40 °C en onder droge omstandigheden Testmethode:N/C0.1	alle eigenschappen dienen aan de normen te voldoen

Gebruik

april tot oktober ≤ 400 uur Testmethode:N/C0.2	alle eigenschappen dienen aan de normen te voldoen