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*SM150T soil  
moisture  
meter for  
amenity turf*

# Soil Moisture Meter

*growing  
through  
innovation*

# The **SM150T** soil moisture meter allows you to record the moisture content of your playing surface, enabling you to better manage your turf moisture requirements, whilst highlighting any issues across the playing surface.

## Introduction

Soil water plays a critical role in turf health, as grass plants require water to survive. Their primary water source is held within the soil pore network. This makes measuring water content critical on sports turf surfaces. In addition, soil water content also directly affects surface performance. In general terms, the higher the soil water content of a sports surface, the softer it will be. For golf, this directly affects how a ball interacts with a putting surface, both in terms of impact with the surface and then when it rolls across the green. For pitches, soil water influences both playability and susceptibility of a surface to damage during play.

Soil water content is also a controlling factor of how quickly organic matter is decomposed in the soil. Soils that are wetter for longer periods of the year, tend to be more susceptible to excessive organic matter accumulation and the formation of thatch.

The measurement of soil water content is a critical part of good greenkeeping practice and groundsmanship. Monitoring soil water content can alert turf managers to potential problems before visual symptoms become evident. It can also enable managers to assess the efficacy of turf maintenance operations.

## Soil water content measurement

If a playing surface appears to be unduly soft, measuring soil water content, along with other soil assessments, can indicate if there are underlying drainage issues. This can be especially useful if there are localised issues, as the ease of measurement means a number of areas can be tested quickly. The onset of drought stress during a dry summer can cause significant turf health issues. Measuring soil water content routinely can highlight when values have become too low and the risk of turf health damage from drought stress is increased.

If there is a history of localised soil hydrophobicity on a playing surface, taking regular soil water content measurements can indicate where these areas are, when to carry out mitigation operations and how effective they have been. Using a soil moisture meter can be very useful to assess uniformity of irrigation application. Simply measure soil water content before and after irrigation to highlight if there is significant variation across the area. If there is, it would indicate that the irrigation system should be inspected and changes made to ensure even irrigation output.

## Benefits of measuring soil moisture content

Some key turf issues that benefit from routine soil water content measurement include:

- Identifying surface softness or hardness
- Highlighting localised drainage issues
- Help to prevent drought stress
- Soil hydrophobicity
- Correcting uniformity of irrigation application

## Contents of SM150T kit

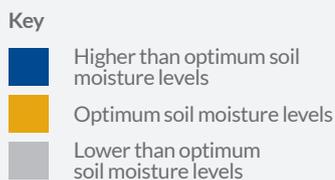
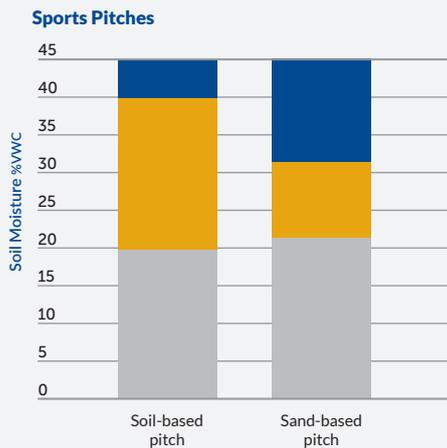
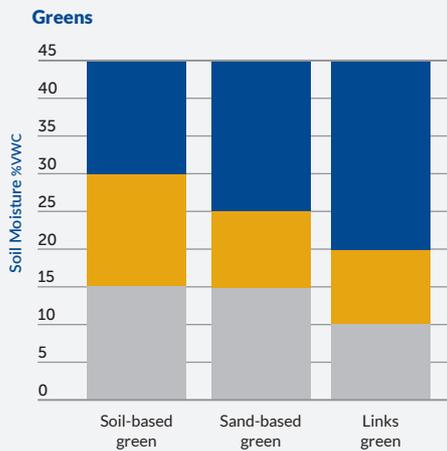
- SM150T soil moisture sensor
- HH150 moisture meter
- Carrycase



## Optimal soil moisture levels

The optimum soil moisture levels depend on the type of turf area and the soil construction. The tables below highlight optimum moisture levels for a range of areas.

The value measured will depend on the gross water inputs, drainage and water retention. Values will be higher if measurements are made directly after rainfall or irrigation, but these readings can be useful to assess the drainage and water retention characteristics of a surface.



## Maintaining optimum moisture levels



Mechanical operations have a strong influence on the infiltration rate of water and the moisture level of soil measured by your moisture meter. Aeration is recognised as being of primary importance in this, aeration helps to reduce compaction, break apart pans and for the removal of organic material, whilst scarification can be used for the elimination of excessive surface thatch, often leading to increasing drainage capacity.

If dry patch disorder has been identified by the soil moisture meter, cultural practices also assist with the placement of supplementary irrigation and wetting agents, typically applied through spray equipment, hose end applicators or as granular products. The moisture meter being an effective tool to confirm re-wetting of the root zone.

## The use of wetting agents to manage moisture levels



Aqua-Zorb 45 can be applied to address dry patch disorder or to address lower than optimum soil moisture levels on all types of managed amenity turf areas. Aqua-Zorb 45 is designed for use in 4 - 6 weekly maintenance programmes to control localised Dry Patch and maintain perfect conditions. Aqua-Zorb 45 should be applied at 20L/ha.

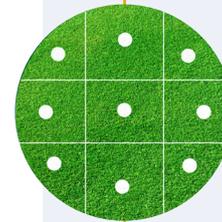
Excel Wetting Agent is a multi-purpose, low dose wetting agent. Excel Wetting Agent is ideal for use as use as a penetrant wetting agent, if soil moisture levels are higher than desired Excel works to move moisture through the soil profile creating a less waterlogged surface. Excel wetting agent has a low dose of 1L/ha and can be used all year round.



## HOW TO USE THE SM150T

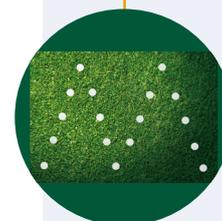


The HH150 hand moisture meter is lightweight and is very easy to use, being a readout-only device (no data recording or PC complications). Operation is simple – just insert the SM150T into the turf and press the 'Read' button to take a reading.



It is important to check across various areas of a green in order to obtain a representative sample from the playing surface.

For a golf green take 9 readings in a 3 x 3 grid.



For a pitch take multiple readings in an 'M' shape across the whole pitch as shown below.



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