



TOPSOIL Market

Sampling, analysis & Questions to ask a supplier

Presentation

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Sampling & Analysis

Reports & Certificates

Questions to ask suppliers

The Market and Sources of Topsoil

Manufactured Soil: Mineral & Organic Blend



Topsoil Market 2.5MT/year



Skip Waste : DANGER

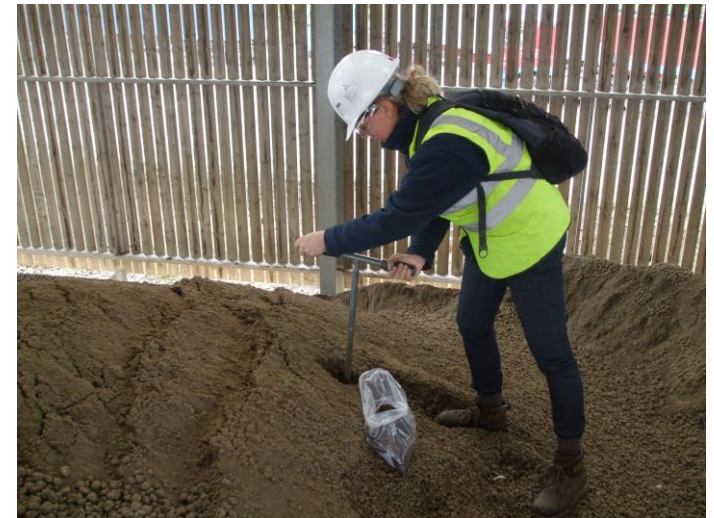


Natural Soil : Variable

Sampling & Analysis:

An analysis certificate is only as good as the sampling

- Samples should be taken in accordance to at least BS3882:2015 every 5,000m³ (8KT)
- 25 sub samples are taken to ensure the bulk sample is representative
- Laboratory analysis is undertaken at a UKAS and MCERT accredited laboratory
- Tim O'Hare Associates report includes
 - Declaration of compliance BS3882:2015
 - Analytical schedule
 - Results of analysis
 - Conclusion
 - Recommendations
 - Certificate of Analysis



Analytical Schedule: Don't forget contamination testing

- **PSA and stone content**
 - pH and EC values
- **Exchangeable sodium %**
 - Major plant nutrients
- **OM%**
 - C:N ratio
- **Heavy metals**
 - Total cyanide and total (mono) phenols
 - Aromatic and aliphatic TPH (C5-C35 banding)
- **Speciated PAHs (US EPA 16 suite)**
 - Benzene, toluene, ethylbenzene, xylene
- **Asbestos screen**



Potential Contaminants levels are measured against recognised industry standards

Presentation

Introduction the ABF / British Sugar

British Sugar TOPSOIL

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A good analysis report should include

- Compliance to BS3882:20015
 - Date
 - Source of soil
- UKAS and MCERTS accredited lab / Methods
- Horticultural Properties
 - e.g.. pH, drainage, aeration, fertility, organic matter, microbes
- Potential Contaminants - part of BS3882:2015
 - e.g.. Heavy metals, TPH, PAHs, BTEX, phenol, asbestos
- Interpretation and recommendations
 - Sample examination, Analytical schedule, Results
 - PSA, pH, %OM, fertility, Potential Contaminants
 - Conclusion & Recommendations

Declaration of Compliance BS3882:2015

Soil source: British Sugar TOPSOIL

This declaration confirms that the topsoil represented by the attached Topsoil Analysis Report conforms to the requirements of the British Standard for Topsoil (BS3882:2015).

The sample was sampled and tested in accordance with the requirements of BS3882:2015

- Samples are taken for analysis every 8000 tonnes (5000 m3) of product
- Samples are taken from all TOPSOIL products ready for despatch
- *Landscape 20* and *Sports 10* are sampled after screening
- Analysis certificates are retained for a period of 5 years
- Laboratory analysis is undertaken at a UKAS and MCERTS accredited laboratory
- All laboratory methods are in accordance with BS3882:2015
- All British Sugar TOPSOIL products are produced to a Quality Management System approved by Lloyd's Register Quality Assurance to ISO 9001:2008 standard

British Sugar plc Co-Products
LANDSCAPE 20 TOPSOIL Analysis
Willington - W120-64KT

Tim O'Hare Associates

ANALYTICAL SCHEDULE

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the concentration of selected potential contaminants. The following parameters were determined:

- particle size analysis and stone content;
- stone content (2-20mm, 20-50mm, >50mm);
- pH and electrical conductivity values;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- C:N ratio;
- heavy metals (As, B, Ba, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, V, Zn);
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16 suite);
- aromatic and aliphatic TPH (C5-C35 banding);
- benzene, toluene, ethylbenzene, xylene (BTEX);
- asbestos screen.

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below. The interpretation considers the use of the LANDSCAPE 20 TOPSOIL for general landscape purposes and its compliance/non-compliance with our general landscape specification.

RESULTS OF ANALYSIS

Particle Size Analysis and Stone Content

The sample fell into the sandy loam texture class, which is usually considered suitable for general landscape applications provided the soil's physical condition is maintained.

The sample was virtually stone-free and as such, stones should not restrict the use of the soil for general landscape purposes.

pH and Electrical Conductivity Values

BS3882:2015: *Good but not always the full answer.*

Don't forget contamination analysis

- Only applies to IMPORTED TOPSOIL
 - Multipurpose Grade
 - Specific Purpose Grade (acid / alkaline / low fertility)
- It is not the 'be all end all'
- A good starting point
- Read the notes below Table 1

NOTE 3 Attention is drawn to the Environmental Protection Act 1990 [3] (EPA) and to the National Planning Policy Framework (NPPF) [4], under which there is a requirement for topsoil to contain no concentrations of chemical contaminants that would cause a significant risk to human health and the environment.

NOTE 4 Attention is drawn to the possibility that Site Specific Assessment Criteria (SSAC) or Generic Assessment Criteria (GAC) might have been set for the intended recipient site under the EPA or NPPF. Further guidance is given in Contaminated Land Exposure Assessment (CLEA) model (EA/DEFRA:2009) Soil Guideline Values [5] and Chartered Institute of Environmental Health (CIEH)/Land Quality Management (LQM) Generic assessment criteria for human health risk assessment (2nd Edition, 2009) [6].

- Build 'project specific' soil specifications for each scheme
- Don't always think that compliance to BS3882:2015 means you will get a good topsoil delivered!

Don't forget the subsoil BS8601:2013

Subsoil shouldn't mean cheap!

- Only applies to IMPORTED Subsoil
 - Multipurpose Grade
 - Specific Purpose Grade (acid / alkaline / low fertility)
- It is not the 'be all end all'
- A good starting point
- Build 'project specific' soil specifications for each scheme
 - Consider the drainage?
 - Consider the topsoil?
 - Consider the planting scheme?
- Don't always think that compliance to BS8601:2013 means you will get a suitable subsoil delivered!

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Questions for suppliers

Visiting is always recommended

- What is the source of your topsoil is it BS3882:2015 compliant?
 - Greenfield / Brownfield / Skip / Manufactured ?
 - Do you use PAS100 compost?
 - Is there an auditable process ?
 - Are quality ingredients being used?
- How is the topsoil stored?
- What tonnage is available?
 - Period of availability ?
 - Is there enough for my project
- What is their sampling protocol ?
 - Who does your sampling?
 - Can I have a copy of your analysis?
 - Date of last analysis?
 - Suite of analysis ?
- Do you have testimonials?
- Affiliation to Trade Organisations? (BALI)

