

**Material:** Heicom Tree Sand  
**Source:** Bourne Amenity Ltd  
**Date Tested:** 03/09/2018  
**Tested Against:** BS3882:2015 Multipurpose Grade  
**Tested By:** NRM Laboratories (Report 24533-18) and CET (Report 447057-178898)

Parameter	Unit	Result
<b>Texture:</b>		
Clay (<0.002mm)	% w/w	3
Silt (0.002 - 0.63mm)	% w/w	1
Very Fine Sand (0.05 - 0.15mm)	% w/w	3
Fine Sand (0.15 - 0.25mm)	% w/w	13
Medium Sand (0.25 - 0.50mm)	% w/w	63
Coarse Sand (0.50 - 1.0mm)	% w/w	16
Very Coarse Sand (1.0 - 2.0mm)	% w/w	1
Total Sand (0.05 - 2.0mm)	% w/w	96
<b>Textual Class:</b>	<b>Loamy Sand</b>	
Stones (2 - 20mm)	% w/w DW	0.6
Stones (20-50mm)	% w/w DW	0.3
Stones (>50mm)	% w/w DW	0.0
<b>Sand Fraction (USGA Sieve Sizes):</b>		
<b>Organic Matter (LOI)</b>	% w/w	2.3
<b>Ph</b>	1:2.5 Water Extract	6.2
<b>Exchangeable Sodium Percentage</b>	%	4.1
<b>Phytotoxic Contaminants:</b>		
Total Zinc	mg/kg	29.8
Total Copper	mg/kg	8.4
Total Nickel	mg/kg	<10
<b>Available Nutrients:</b>		
Nitrogen	mg/l	0.16
Phosphorus	mg/l	604
Potassium	mg/l	913
Magnesium	mg/l	827
<b>Carbon:Nitrogen Ratio</b>	:1	8.75
<b>Calcium Carbonate</b>	% m/m	0.4
<b>Additional Analysis:</b>		
Electrical Conductivity (1:2.5 water extract)	µS/cm	2820
Electrical Conductivity (1:2 CaSO4 extract)	µS/cm	4446

Parameter	Unit	Guidelines	Value	Result	Compliance
<b>Heavy Metals and Hydrocarbons</b>					
Total Antimony (Sb)	mg/kg	S4UL	<500	0.2	Yes
Total Arsenic (As)	mg/kg	S4UL	<37	7.6	Yes
Total Barium (Ba)	mg/kg	S4UL	<1300	11.7	Yes
Total Beryllium (Be)	mg/kg	S4UL	<1.7	0.3	Yes
Total Cadmium (Cd)	mg/kg	S4UL	<11	0.14	Yes
Total Chromium III (Cr)	mg/kg	S4UL	<910	12.6	Yes
Hexavalent Chromium (Cr Vi)	mg/kg	S4UL	<6	<0.1	Yes
Total Cyanide (Cn)	mg/kg	Dutch Action Value (DAV)	<20	<1	Yes
Total Lead (Pb)	mg/kg	SP1010 (Defra Category 4)	<200	11.4	Yes
Total Mercury (Hg)	mg/kg	S4UL	<1.2	<0.2	Yes
Total (mono) Phenols	mg/kg	S4UL^	<550	<1	Yes
Total Selenium (Se)	mg/kg	S4UL	<250	<0.1	Yes
Total Vanadium (V)	mg/kg	S4UL	<410	29.8	Yes
Water Soluble Boron (B)	mg/kg	S4UL	<290	2.2	Yes
Acenaphthylene	mg/kg	S4UL^	<420	<0.05	Yes
Acenaphthene	mg/kg	S4UL^	<510	<0.05	Yes
Anthracene	mg/kg	S4UL^	<5400	<0.05	Yes
Benzo (a) Anthracene	mg/kg	S4UL^	<11	<0.1	Yes
Benzo (a) Pyrene	mg/kg	S4UL^	<2.7	<0.1	Yes
Benzo (b) Fluoranthene	mg/kg	S4UL^	<3.3	<0.1	Yes
Benzo (g,h,i) Perylene	mg/kg	S4UL^	<340	<0.1	Yes
Benzo (k) Fluoranthene	mg/kg	S4UL^	<93	<0.1	Yes
Chrysene	mg/kg	S4UL^	<22	<0.1	Yes
Dibenzo (a,h) Anthracene	mg/kg	S4UL^	<0.28	<0.1	Yes
Fluoranthene	mg/kg	S4UL^	<560	<0.1	Yes
Fluorene	mg/kg	S4UL^	<400	<0.05	Yes
Indeno (1,2,3-cd) Pyrene	mg/kg	S4UL^	<36	<0.1	Yes
Naphthalene	mg/kg	S4UL^	<5.6	<0.05	Yes
Phenanthrene	mg/kg	S4UL^	<220	<0.1	Yes
Pyrene	mg/kg	S4UL^	<1200	<0.1	Yes
Aliphatic TPH (C5 - C6)	mg/kg	S4UL^	<78	<0.1	Yes
Aliphatic TPH (C6 - C8)	mg/kg	S4UL^	<230	<0.1	Yes
Aliphatic TPH (C8 - C10)	mg/kg	S4UL^	<65	<0.1	Yes
Aliphatic TPH (C10 - C12)	mg/kg	S4UL^	<330	<1	Yes
Aliphatic TPH (C12 - C16)	mg/kg	S4UL^	<2400	<1	Yes
Aliphatic TPH (C16 - C21)	mg/kg	S4UL^	<92000	<1	Yes
Aliphatic TPH (C21 - C35)	mg/kg	S4UL^		50.2	Yes
Aliphatic TPH (C35 - C44)	mg/kg	S4UL^	<92000	<1	Yes
Aromatic TPH (C5 - C7)	mg/kg	S4UL^	<140	<0.01	Yes
Aromatic TPH (C7 - C8)	mg/kg	S4UL^	<290	<0.01	Yes
Aromatic TPH (C8 - C10)	mg/kg	S4UL^	<83	<0.1	Yes
Aromatic TPH (C10 - C12)	mg/kg	S4UL^	<180	<1	Yes
Aromatic TPH (C12 - C16)	mg/kg	S4UL^	<330	<1	Yes
Aromatic TPH (C16 - C21)	mg/kg	S4UL^	<540	<1	Yes
Aromatic TPH (C21 - C35)	mg/kg	S4UL^	<1500	24.6	Yes
Aromatic TPH (C35 - C44)	mg/kg	S4UL^	<1500	<1	Yes
Benzene	mg/kg	S4UL^	<0.17	<0.02	Yes
Toluene	mg/kg	S4UL^	<290	<0.2	Yes
Ethylbenzene	mg/kg	S4UL^	<110	<0.04	Yes
O-xylene	mg/kg	S4UL^	<140	<0.1	Yes
M-xylene	mg/kg	S4UL^	<140	<0.2	Yes
P-xylene	mg/kg	S4UL^	<130	<0.2	Yes
MTBE	mg/kg	Sail Guideline Values	<470	<0.05	Yes
Asbestos	mg/kg	Control of Asbestos Regulations 2006	Absent	Absent	Yes

\*All reports originate from samples collected in accordance with the guidelines laid out in the BS3882:2015 standard. Tests of this material are carried out a minimum of every 6 months.

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**TEST REPORT: DETERMINATION OF THE CALIFORNIA BEARING RATIO (C.B.R.)**

BS 1377 Part 4 : 1990 : clause 7

REPORT No.:	F18-447057-178898-1	CLIENT:	Bourne Amenity Ltd
SAMPLE No.:	178898/1	ADDRESS:	The Wharf, Rye Road, Newnden, Kent
CLIENT REF:	45597	SITE:	Structural Tree Sand
DATE SAMPLED:	05/02/2018	SUPPLIER:	Details Not Supplied
SAMPLED BY:	Client	MATERIAL:	Heicom Structural Tree Sand
DATE RECEIVED:	06/02/2018	ADDITIONS:	None
DATE TEST COMPLETED:	06/02/2018	LOCATION:	Details Not Supplied
TESTED BY:	JW	PREPARATION METHOD:	2.5kg Rammer
CERTIFICATE OF SAMPLING:	Yes	VARIATIONS FROM STD:	None
CURING / SOAKING PERIOD:	N/A	TYPE OF SAMPLE:	Disturbed

**RESULTS:**

Recompacted Bulk Density :	1.742	Mg/m <sup>3</sup>
Moisture Content :	21	%
Dry Density :	1.443	Mg/m <sup>3</sup>

**Top Half of CBR Test**

Load on Plunger @ 2.5mm Penetration :	0.38	kN
CBR Value @ 2.5mm Penetration :	2.9	%
Load on Plunger @ 5.0mm Penetration :	1.15	kN
CBR Value @ 5.0mm Penetration :	5.8	%

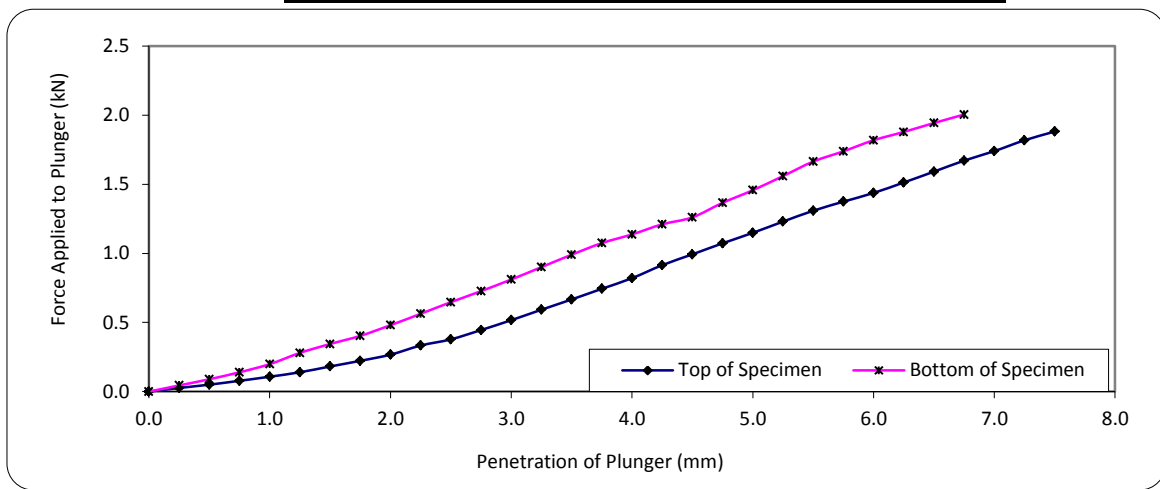
Top Half Moisture Content : 21 %

**Bottom Half of CBR Test**

Load on Plunger @ 2.5mm Penetration :	0.65	kN
CBR Value @ 2.5mm Penetration :	4.9	%
Load on Plunger @ 5.0mm Penetration :	1.46	kN
CBR Value @ 5.0mm Penetration :	7.3	%

Bottom Half Moisture Content : 20 %

**MEAN C.B.R VALUE: 6.5 %**



REMARKS: Ring Maxed at Bottom 6.75mm Penetration

For and on behalf of CET

Remaining sample will be retained for a minimum of 28 days from date of report.

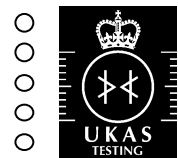
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Report Format : L/Rep S16a /rev.3

Approved Signatory

08-Feb-18

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 Matt Oliver - Site Manager  
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 Chris Davidson - Laboratory Supervisor  
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