

Uniclass L6129	EPIC F122
CI/SfB (-A) Cp3	



Technical Manual – Section 19

Hortag[®]

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Introduction

The unique properties of Hortag horticultural media allow it to be used in a variety of applications. It is a rounded, manufactured aggregate that does not degrade over time. Placing on site is relatively easy as the material “flows” into voids and needs little additional compaction, saving time and money.

General properties

Hortag has a typical insitu density of 815kg/m³ based on a moisture content of 15%. This may however vary slightly, and current bulk densities may be obtained from the Lytag Ltd sales office. Further properties of Hortag are given in table 1.

Applications

Land Drainage - Hortag is an ideal medium for land drainage. Its rounded shape and regular grading give excellent hydraulic conductivity, as detailed in Table 1. It is used to construct golf course greens and is used in slit trenching and gravel banding, including Shelton Systems.

Sports Fields - Hortag is excellent for both open trenching and for turf slitting. 6/14mm aggregate can also be used for trench fill around bowling greens.

Green Roof and Architectural Landscaping - When mixed with soil, Hortag makes an excellent lightweight growing medium. Careful consideration has to be given to the component parts of the system to ensure they provide a suitable medium for sustaining vegetation, provide adequate drainage while still retaining moisture, minimise the weight on the building and should aim to protect the environment but, at the same time minimise the use of finite natural resources and provide reasonable value to those involved in its design, construction and operation.

For further information please see section 22 of the Lytag Technical Manual.



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Benefits of specifying Hortag® horticultural media:

Quality – Effective Quality Management Systems ensure consistent product manufacture.

Stability - Hortag will not degrade, clog or impede drainage. It will aid long life and high performance to any scheme.

Cost Saving - Hortag is half the weight of natural stone or gravel thus savings are made in transportation and laying costs – a 30 tonne tipper truck can collect 36.5m³ of Hortag compared with only 18m³ of natural aggregate.

Ease of placing - Being a rounded aggregate, Hortag “flows” easily and quickly into position, reducing any need for specialist placing techniques.

Use in Soft Ground - In wet and difficult ground conditions, Hortag can be used when it would be difficult or impossible to transport heavier natural aggregate.

Pellet Shape - Due to the rounded shape of the pellet, no damage is caused to plastic pipes, membranes or bags.

Non-Compactable - Unlike irregular shaped aggregate, which over time often compact and silt up, Hortag's® rounded shape maximises the proportions of voids necessary for efficient drainage and aeration. Even after many years of service underground the compaction is minimal so free flowing properties are maintained.

High Absorption - Rapid dispersion of water is improved by both high absorption characteristics and non-compactability (A soak away system using Hortag can retain as much as one third its weight in water). Due to its non- compactability Hortag offers a much improved rate of hydraulic conductivity when compared to natural aggregates.

Easy on machinery- Damage to machinery can be reduced due to the rounded shape, weight, and impact reduction and non-abrasive qualities of the pellet.

Manual Handling - Due to the weight of Hortag being approximately half that of natural aggregate, handling is less arduous and the risk of physical injury is reduced.



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Compaction

When placing Hortag only minimal compaction is required. For smaller areas the material should be placed in layers of maximum 300mm deep and raked and lightly vibrated to settle into position. Heavy compaction methods should not be used as this may crush the aggregate particles.

As well as reducing pressures exerted on new structures both during construction and in the longer term, savings can also be made on manpower, time and plant.

Environmental considerations

As Hortag is manufactured from a waste stream material, the need to extract virgin materials to obtain the aggregate is negated. The original waste power station fly ash does not need to be sent for landfill, hence reducing the requirement for valuable land space. As Hortag is approximately 50% of the weight of 'normal' aggregate, twice the volume can be carried in road vehicles. This significantly reduces vehicle movements on the highway and on and of site.

Where manual handling of the aggregate is required the lighter weight of the aggregate makes it easier to move, hence reducing the physical strain on operatives.



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Table 1 - Hortag horticultural media Properties

Property / Material	Hortag H1	Hortag H2	Hortag H23
Dry loose bulk density (BS EN 1097-3)	710kg/m ₃	710kg/m ₃	710kg/m ₃
Typical moisture content as delivered (BS EN 1097-5)	15%	15%	15%
Long term maximum moisture content	30%	30%	30%
Permeability m/s (BS EN 1377-5)	1.3 x 10 ⁻¹	1.3 x 10 ⁻¹	1.3 x 10 ⁻¹
pH (BS EN 1377-3)	9.2	9.2	9.2
Effective angle of internal friction Highways Specification CI 636	N/A	42°	39°
Aggregate crushing strength (BS EN 13055)	7N/mm ₂	6.5N/mm ₂	6.5N/mm ₂
pH	9	9	9
Typical grading (BS EN 933-1)			
14mm	100	100	100
10mm	100	87	81
8mm	98	49	29
6.3mm	47	19	8
4mm	5	4	4
3.15mm	4		
2mm	3		
0.063mm	2.3	2.4	2.4



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