Product sheet	Date of issue: 01-01-2016		Tree granules
Fields of application			Landscaping

Tree granules

Tree granules is a substrate composed of a component organic matter, like raised bog peat, fen peat or compost and a rock substance. Tree granules are applied under paved roads. Tree granules have to be set up in layers of maximum 30 cm that are compacted to maximum 1,5 - 2,0 MPa.

RAG process requirements for tree granules

RAG site
The properties of the site may not harm the purity and quality of the product. That is why a number of process requirements have been drawn up for the RAG site, that could prevent the matters below:

- Contamination by germinative weeds (zero tolerance)
- Mixing of products through tyres, loading shovels and other means of transport
- Contamination or mixing of the RAG product from surrounding areas
- Contamination due to non clean storage site
- Mixing or contamination from or through the underground or surrounding materials

Transport
Transport must occur in such a way, that the purity and quality of the product remain within the general and specific product requirements. Previous to loading, the cargo space must be inspected if it is sufficiently clean. At each transport it must also demonstrably be known what the previous load of the vehicle was.

RAG quality mark

Only companies that have joined Stichting RHP can supply tree granules with the RAG quality mark. You can recognise the RAG certified tree soil on the RAG-logo on the invoice and/or delivery receipt. The RAG certificate gives quality guarantees of the substrate delivered.

Certified for
Landscaping

RHP Certification

Since 1963 RHP has been the European knowledge center for growing media for the professional horticulture and the consumer. For the professional tree nursery, gardener and public green spaces, RHP offers stable substrates, soil supply and soil improvers with guarantee on an optimal nutrient medium. An important activity of RHP is the development and management of quality marks that are related to these substrates.

The quality mark RAG Landscaping is directed to maintainers of public green spaces and gardeners. Tree sand, tree granules, tree soil, and garden soil for gardeners are products that can be RAG Landscaping certified. The quality mark is granted to producers, traders and importers of raw materials and substrates if strict requirements are demonstrably complied with. This unique quality assurance system is applied in the whole chain, which results in excluding risk factors at an early stage.

RAG product specific requirements Tree granules

General requirements

Tree granules have to comply with the environmental hygienic requirements for non-moulded building materials with an organic matter content less than 15%. The analysis results have to comply with the emission values as stated in enclosure B of the Regeling Bodemkwaliteit.
Certification is possible by means of BRL 9341.

Chemical requirements tree granules

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EC, pH and other analyses

Analyses	Method	Standards
EC (mS/m)	EN 13038	≤ 60
pH-KCl	pH in potassium chloride-suspension	5,0 - 7,5
Calcium carbonate ($CaCO_3$)	NEN-ISO 10693	At pH ≤ 6 = $CaCO_3$ < 0,5 (weight percents) At pH > 6 = $CaCO_3$ < 2 (weight percents)
Cl (mg/l substrate)	EN 13652	≤ 210

The most important nutrient elements are determined in tree granules. An assessment is stated per element, conform table.

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Assessment nutrient elements

Assessment	Phosphate (P-Al)	Potassium (CAT)	Magnesium (CAT)	Nitrogen N-total
Method	EN 1189	EN 13651	EN 13651	EN 13654
	mg / 100g d.m.	mg / litre substrate	mg / litre substrate	mg/kg dry matter
Low	< 30	< 120	< 120	< 80
Good	30 - 60	120 - 300	120 - 360	80 - 160
High	> 60	300 - 475	> 360	> 160

Physical requirements tree granules

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Analyses	Method	Standards
Dry matter contents	NEN-EN 13040	≥ 80 % (weight percents)
Stability	FprEN 16087-1: 2011	< 5 mmol O_2 / kg o.s. per hour

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Analyses	Method	Standards	
		Classification	LWD
Loading capacity (LWD) at practice bulk density	RHP Method description RAG Landscaping m^3 box, Test M151	Standard	20 – 30 MPa
		High	30 – 40 MPa
		Very high	> 40 MPa
Pores volume at practice bulk density	RHP Method description RAG Landscaping m^3 box, Test M152	≥ 35%	
Water conductivity (Kf) at practice bulk density	RHP Method description RAG Landscaping m^3 box, Test M153	≥ 1 mm/min	
Water capacity after 24 hours	RHP Method description RAG Landscaping m^3 box, Test M154	≥ 10%	
Organic matter	EN 13039	≥ 1%	

Phytosanitary requirements tree granules

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Weeds		
Type of weeds	Method	Standards
Weeds score	RHP	< 50 per m^2