



1550 66<sup>th</sup> Ave. Dr. East  
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 888-386-4478 Fax  
 info@horticulturalalliance.com  
 http://www.horticulturalalliance.com

## *Specifications*

# DIEHARD™ TRANSPLANT

### Part 1: General Description

A transplant amendment shall be used which is formulated as a transplant preparation to inoculate landscape trees and shrubs with live beneficial mycorrhizal fungi when planting. It contains highly selected endo and ectomycorrhizae fungi that will quickly colonize the roots of new transplants to provide the best possible conditions for the roots to become as effective as possible during the establishment period and beyond. Both endo and ectomycorrhizal inoculants are combined with *Trichoderma*, humic acids, beneficial bacteria, soluble sea kelp, yucca plant extracts, to promote rapid root development. To reduce transplant stress and watering maintenance, and to slow release all soluble components of the formulation, water management gel is added to complete the package.

### Part 2: Ingredients: Product shall include specifically:

Endomycorrhizal	12.5 Propagules per cubic centimeter <i>Glomus mosseae</i> , <i>Glomus intraradices</i> , <i>Glomus claroideum</i> , <i>Glomus etunicatum</i> , <i>Glomus clarum</i> , <i>Glomus deserticola</i> , <i>Glomus microaggregatum</i> .
Ectomycorrhizal	180,400 CFU's per cc to include: <i>Pisolithus tinctorius</i> (155,400), <i>Rhizopogon</i> (25,000).
Nitrogen Fixing, Phosphate solubilizing, and Growth Promoting Bacteria.	1,000,000 Colony forming units per cc to include Genus Bacillus: <i>B. megaterium</i> , <i>B. subtilis</i> , <i>B. amyloliquefaciens</i> , <i>B. azotoformans</i> , <i>B. licheniformis</i> , <i>B. pumilus</i> , <i>B. Firmus</i> , <i>B. coagulans</i> , <i>Geobacillus stearothermophilus</i> , and <i>Pae-nibacillus polymyxa</i> . Genus Psuedomonas: <i>P. putida</i> , <i>P. fluo-rescence</i> , <i>P. aureofaceans</i> , <i>P. Durum</i> . Genus Streptomyces: <i>S. lydicus</i> , <i>S. griseus</i> , <i>S. Coelicolor</i> .
<i>Trichoderma</i>	72,600 CFU's per cc Genus <i>Trichoderma</i> : <i>Trichoderma hamatum</i> , <i>Trichoderma harzianum</i> , <i>Trichoderma viride</i> , <i>Trichoderma reesei</i> .
Humic Acid	21% derived from <i>Leonardite</i>
Sea Kelp Extract	10% <i>Ascophylum nodosum</i>
Yucca Plant Extract	4% <i>Yucca schidigera</i>
Root Promoting Vitamins	B, B2, B3, B5, B6, B7, B9, B12, C, K, Biotin
Amino Acids	Animal and Plant Proteins
Additional Microbials	Purines, Pyrimidines, Fulvic Acid
Horta-Sorb® MD Water Gel Particle Size Percent Soluble Absorption Rate	Minimum 29% cross linked copolymer 0.8 mm to 2.0 mm, maximum 5 % < 1.0 mm Less than 5 % 300 - 400 times in distilled water



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### Part 3: Application

Mix with backfill in the top first 8-10 inches of planting hole adjacent to the root ball for larger plants, and 4-6 inches for smaller plants, making sure that it is in contact with the root ball. Complete backfill procedure immediately to minimize direct sun exposure to product. Store product in a dry, cool place being mindful that product is not to be exposed to high heat over 105° F. for periods in excess of four hours.

Size of Plant Material	Rate In Ounces	Size of Plant Material	Rate In Ounces
3 Inch cont.	0.15	1 Ft. in Height	2
4 Inch cont.	0.2	2 Ft. in Height	2
1 Quart	0.25	3 Ft. in Height	4
2 Quart	0.5	4 Ft. in Height	4
1 Gallon	1	5 Ft. in Height	6
2 Gallon	2	6 Ft. in Height	6
3 Gallon	2	7 Ft. in Height	8
5 Gallon	2	8 Ft. in Height	8
7 Gallon	4	9 Ft. in Height	8
10 Gallon	4	10 Ft. in Height	12
15 Gallon	6	12 Ft. in Height	16
20 Gallon	8	14 Ft. in Height	20
25 Gallon	8	16 Ft. in Height	24
30 Gallon	12	18 Ft. in Height	28
50 Gallon	12	20 Ft. in Height	32
65 Gallon	16	22 Ft. in Height	36
100 Gallon	20	24 Ft. in Height	40
200 Gallon	24	24 Spade	4
300 Gallon	32	30 Spade	8
1 Inch Caliper	4	44 Spade	16
2 Inch Caliper	8	52 Spade	24
3 Inch Caliper	12	62 Spade	32
4 Inch Caliper	16	80 Spade	40
5 Inch Caliper	20	96 Spade	48
6 Inch Caliper	24	16 Inch Box	6
7 Inch Caliper	28	20 Inch Box	8
8 Inch Caliper	32	24 Inch Box	8
9 Inch Caliper	36	30 Inch Box	16



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10	Inch Caliper	40	36	Inch Box	24
12	Inch Caliper	48	42	Inch Box	28
15	Inch Caliper	60	48	Inch Box	32
18	Inch Caliper	72	60	Inch Box	48
	<b>Size of Plant Material</b>	<b>Rate In Ounces</b>	<b>Size of Plant Material</b>	<b>Rate In Ounces</b>	
21	Inch Caliper	84	72	Inch Box	64
24	Inch Caliper	96	96	Inch Box	80
27	Inch Caliper	108			
30	Inch Caliper	120			
36	Inch Caliper	136			

**Part 4: Execution**

Use in strict accordance with supplier's instructions and recommendations. Follow recommended application rates per manufacturer at

<http://www.horticulturalalliance.com/123xls/DhtuseXLS2.xls>

Or calculate usage rates at

[www.horticulturalalliance.com/spec1.htm](http://www.horticulturalalliance.com/spec1.htm)

**Part 5: Manufacturer's Service**

At the request of Landscape Architect provide the services of a qualified technical representative to instruct the user in proper mixing and handling of the product.

**Part 6: Verification of Use**

Landscape Architect shall determine, or alternatively require the Contractor to determine and submit to the Landscape Architect, how much materials are required on each job by using the INTERACTIVE SPECIFICATION sheet on the web at [www.horticulturalalliance.com/spec.1.htm](http://www.horticulturalalliance.com/spec.1.htm), or by providing manufacturer with plant list, in which case the manufacturer will do the take-off and provide volume requirements to the Landscape Architect and the Contractor. Landscape Architect shall require receipts for materials purchased to verify use. Additionally, Landscape Architect may require submittal of all empty product bags of materials purchased. At the request of the Landscape Architect excavation of random plots of up to 1% of planted materials. Landscape Architect shall require alternative procedures if product has not been used based upon manufacturer's recommendations.

**END OF SECTION**

**Interactive Landscape Architect Web Site - [www.horticulturalalliance.com/spec1.htm](http://www.horticulturalalliance.com/spec1.htm)**



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Input job specific info, plant size and quantities and include the exact product and amounts in your specification - thus, almost eliminating any contractor “errors”.



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### **Free Services Provided to Specifiers**

- We do a take off for you - fax your plant list to us and we will do a take off and fax back to you the amount of materials required for the job.
- We introduce your contractors to our products - give us a list of your contractors and we will introduce, educate and provide them with installation information and list of materials for the job.
- With toll-free phone (800-628-6373) and fax lines (888-386-4478) we are at your service at a moments notice.
- We provide verification to you that the contractor has purchased products – just ask and we will track this and provide you the information.