



PARIC CORPORATION
77 Westport Plaza Suite 250
St. Louis, MO 63146
TEL: 636-561-9500
FAX: 636-561-9501

REQUEST FOR INFORMATION **DATE:** October 07, 2016 **NO.:** RFI-318

To: Cannon Design

Attn: Kelvin Patel

From: Paric Corporation

Requested By: Devin Gates

Project Name: 15051-Webster University Interdisciplinary Science Building Project No.: 15051

Subject: Green roof clarifications

Response Required By: October 14, 2016

Drawing / Spec Reference:

Information Requested:

3/A0453 shows insulation per 072100 but does not give a thickness. Please advise thickness of insulation.
Sheet A0400 has the insulation thickness for RA-T4 & RA-T2 shown at 4" X.P.S Insulation should be a min. of 4".
7/A054 shows insulation on the face of the wall per 072100 but does not give a thickness. Please advise thickness of insulation.
Sheet A0400 has the insulation thickness for RA-T4 & RA-T2 shown at 4" X.P.S Insulation should be a min. of 4".
The overall roof plan calls this assembly an intensive garden roof, however, the items in the spec make this sound more like Hydrotech's EXTENSIVE garden roof system. Please confirm if this is to be an intensive or extensive garden roof system. **The system is intended to be a type of shallow intensive system - we based it on the Hydrotech Lawn Garden Assembly - web literature attached**
Are both the GR50 and the Hyrdrodrain 300 Drainage mats required for the system? Please advise
GR50 is to be under the lawn and Hydrodrain 300 under the pavers
Will FM submittals be required for this section?
Yes. Submittal needs to include FM's RoofNav Assembly Number.
071413 calls for Root Stop HD or comparable product. See attached document from Hydrotech where the product is recommended where trees or plants with large root structures are to be installed. Is the standard root stop product acceptable instead? **Per the attached Hydrotech detail, Root Stop HD is required.**

Response:

Kathy Williams (KWA),
Zach Snovelle (SWT),
Kelvin Patel (CD)

Answered By: _____

Date: **11/03/16**



ARCHITECT'S RESPONSE:

This information is provided as an interpretation of the Contract Documents for implementation. It is not an authorization for change to the Contract Sum or Contract Time. If this information results in a claim for a change to the Contract, the Contractor shall notify the [Construction Manager][Architect] of a change through the change process.

Answered By: _____

Date: _____



GENERAL DESCRIPTION

Root Stop HD is a smooth, high quality high-density polyethylene (HDPE) geo-membrane produced from specially formulated, virgin polyethylene resin.

BASIC USE

Root Stop HD is designed to be used as a heavy-duty root barrier for the MM 6125[®]EV-FR roofing membrane as part of Hydrotech's Garden Roof[®] Assembly. Root Stop HD is especially designed for use in extensive applications with perennials **and** woody plants, intensive applications with woody plants, tree wells, planters with woody plants, and foundation wall applications to control tree roots. Root Stop HD is loose laid over Hydroflex[®] 30, lapped 2.5 feet with the lap edges taped with Root Stop Tape.

Note: This product is NOT appropriate for use with Bamboo or other plant materials with aggressive root structures. Please refer to Root Stop Bamboo Product Data Sheet for further information.

ADVANTAGES

- Outstanding chemical resistance
- Dimensionally stable

TECHNICAL SPECIFICATIONS

Root Stop HD is available in full rolls 15 feet (5.45 m) wide by 100 feet (36.3 m) long (1,218 sqft effective coverage with 2.5 foot laps) and half rolls, 15 feet (5.45 m) wide by 50 feet (18.1 M) long (593 sqft effective coverage with 2.5 foot laps).

PROPERTY	TEST METHOD	RESULT
THICKNESS mils (mm)	ASTM D5199	30 (0.75)
WEIGHT lb/ft ² (kg/m ²)	ASTM D1505	0.17 (0.83)
TENSILE PROPERTIES (each direction)	ASTM D6693, Type IV Dumbell, 2 ipm	
STRENGTH @BREAK lb/in-width (N/mm)		114 (20)
STRENGTH @ YIELD lb/in-width (N/mm)		63 (11)
ELONGATION @ BREAK %	G.L. 2.0 in (51 mm)	700
ELONGATION @ YIELD %	G.L. 1.3 in (33 mm)	12
TEAR RESISTANCE lb (N)	ASTM D1004	21 (93)
PUNCTURE RESISTANCE lb (N)	ASTM D4833	54 (240)
CARBON BLACK CONTENT %	ASTM D1603	2.0
CARBON BLACK DISPERSION	ASTM D5596	Note 1
NOTCHED CONSTANT TENSILE LOAD hrs.	ASTM D5397, Appendix	300
OXIDATIVE INDUCTION TIME min.	ASTM D3895, 200 _i , O ₂ , 1 atm	>100

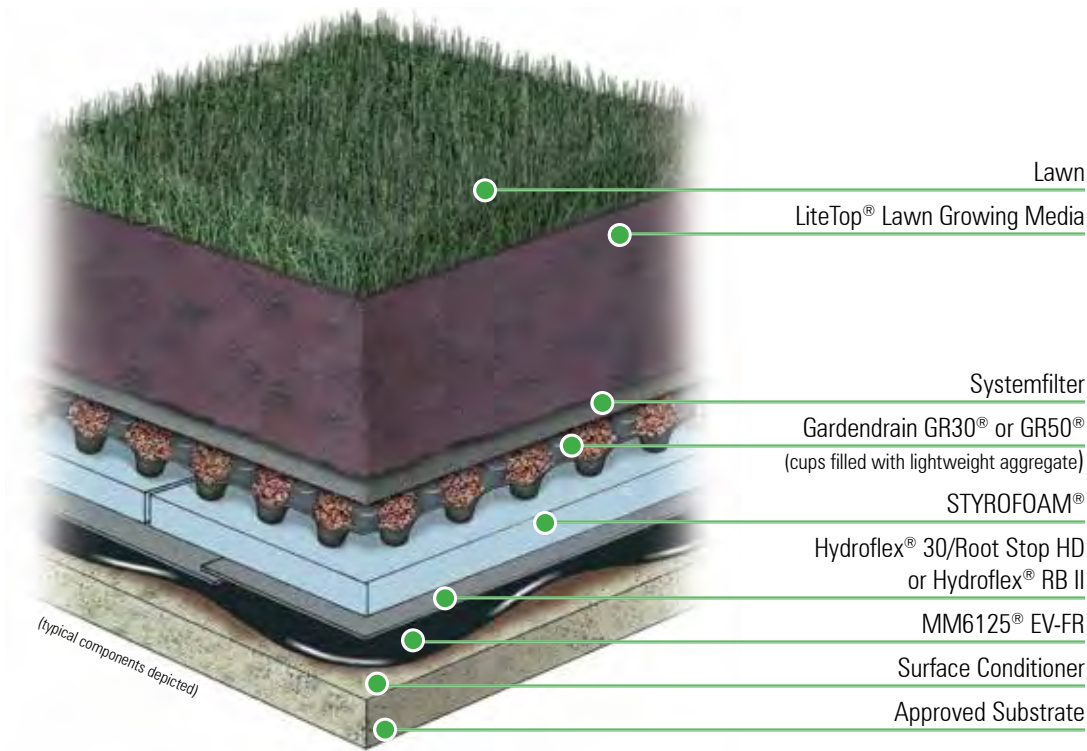
NOTES:

1. Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3
2. Root Stop membranes have dimensional stability of $\pm 2\%$ when tested with ASTM D 1204 and L TB of $< -77^{\circ}\text{C}$ when tested with ASTM D 746

American Hydrotech, Inc.

303 East Ohio St., Chicago, Ill., 60611 * (312) 337-4998 * FAX (312) 661-0731 * www.hydrotechusa.com * 8/14

Lawn Garden Roof® Assembly



Vegetation Options:

- **Lawn sod or seed**
(by others)

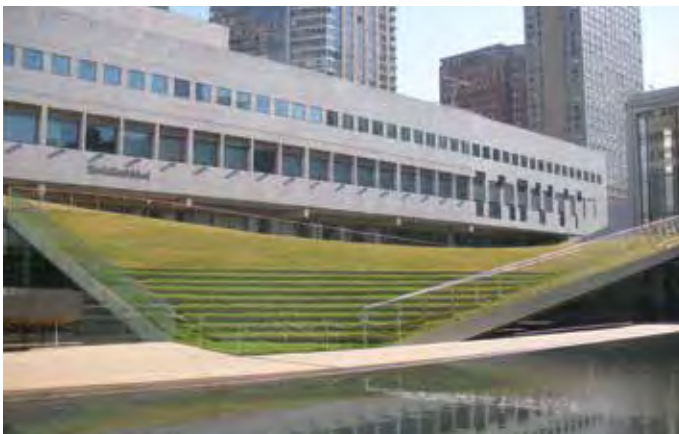
Lawns have unique needs due to the foot traffic they experience. Designers have the ability to create large lawn areas on rooftops using a lawn Garden Roof® Assembly. This assembly incorporates a LiteTop® growing media that provides a firm structure for pedestrian areas while providing proper aeration for good turf grass root growth.

Lawns require more water for proper establishment and long term growth and Hydrotech strongly recommends that a permanent irrigation system be included in this assembly. Typically, pop-up irrigation systems (identical to at-grade systems) are incorporated into this assembly.

By combining a lawn assembly with GardNet®, designers can create dramatic lawn spaces on complex sloped roof shapes.

Features:

- Typical depth: 8" to 12" or more of LiteTop® Lawn growing media
- Depths, related weights and type of grass used are regionally dependent (in warmer climates, greater growing media depth is required)
- Ideal for increasing usable space
- Can be used on flat or sloping roofs
- Hardscape options can be integrated into assembly
- Irrigation is strongly recommended
- Requires maintenance similar to at-grade lawn areas

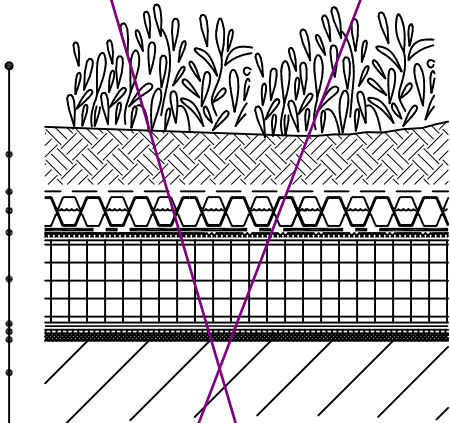


Lincoln Center - New York, NY



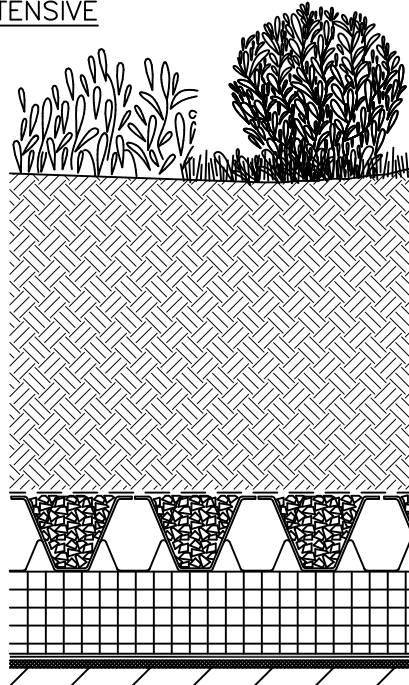
Overture Center for the Arts - Madison, WI

EXTENSIVE



HARDY, DROUGHT TOLERANT PLANTS
 LITETOP EXTENSIVE MEDIA (3"–6")
 SYSTEMFILTER
 GARDENDRAIN GR15 OR GR30
 (option: filled w/lt.wt. aggregate)
 MOISTURE MAT & HYDRODRAIN AL
 (IF NECESSARY)
 (refer to details GA-2A & GA-2B)
 DOW STYROFOAM INSULATION
 HYDROFLEX 30 & ROOT STOP
 MM 6125EV-FR
 SUBSTRATE
 (concrete, gyp.bd., plywood)

INTENSIVE



INTENSIVE VEGETATION: PERENNIALS,
 SHRUBS, SMALL TREES, URBAN
 AGRICULTURE
 LITETOP INTENSIVE MEDIA (6"+)
 SYSTEMFILTER
 GARDENDRAIN GR30 OR GR50
 (filled w/lt.wt. aggregate)
 DOW STYROFOAM INSULATION
 HYDROFLEX RB II OR
 HYDROFLEX 30 & ROOT STOP HD
 MM 6125EV-FR
 SUBSTRATE
 (concrete, gyp.bd., plywood)

NOTES:

- ADDITIONAL COMBINATIONS OF GARDEN ROOF ASSEMBLY COMPONENTS ARE POSSIBLE TO FIT SPECIFIC PROJECT REQUIREMENTS.
- CONSULT HYDROTECH FOR VARIATIONS ON ABOVE ASSEMBLIES.



**GARDEN
 ROOF**
 ASSEMBLY

AMERICAN HYDROTECH, INC.

TYPICAL STANDARD
 GARDEN ROOF ASSEMBLIES
 EXTENSIVE AND INTENSIVE

NO SCALE

GA-1A