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## TECHNICAL BULLETIN No.112

# Understanding Root Barriers For Greenroof-Roofscapes® Assemblies

Barrett offers a number of Greenroof-Roofscapes® root barriers each having their own features and benefits. RB 20 is a 20 mil low density polyethylene sheet and RB 30H, 40H and 80H are high density polyethylene materials of various thicknesses.

The RB 20 is well suited for most low profile, extensive greenroof applications where root growth is least aggressive. RB30H is a heavier, denser product and is recommended in high profile, intensive greenroof application when larger plants are desired. RB 40H is a high density product, recommended to protect against tree root growth. RB 80H is recommended for plants like bamboo and other plants well known for their very aggressive root growth.

All Barrett root barrier products are installed in a similar manner, typically lapping the proceeding sheets a minimum of 12 inches and taping all joints with Barrett RB 25 Tape. The barrier is to be turned past the top of the growing media to avoid roots growing around the edges of the sheet. Taping the edges is an extra measure of assurance.

These products are not biodegradable when covered and are intended to provide protection from root penetration during the life of the greenroof assembly. This type root barrier is FLL compliant. Similar to ASTM in the United States, the German FLL, which stands for Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau E.V., is an organization who has been developing and standardizing greenroof technology for over 30 years.

These root barriers incorporated into the Barrett Ram-Tough 250 systems are comparatively inexpensive and perform extremely well.

### Product Comparison

Some greenroof system suppliers are recommending several forms of bitumen and modified bitumen membranes as root barriers. Although they may add resistance to root growth, they are organic and roots can thrive on their composition and eventually work their way through, even when reinforced. Only modified bitumen membranes with a metal surfacing will provide adequate protection, provided that the seams are adequately treated to prevent root penetration.

Another supplier is promoting the use of a granulated modified bitumen sheet that incorporates a root inhibitor. This product is a typical granulated modified bitumen sheet that has been surface treated with a chemical, copper hydroxide, which is a root inhibiting solution. There is not a great deal of history to this product. Once installed, it's required that all seams be hand treated in the field with the viscous solution. Since this is a surfaced coated product, surface scuffing during installation can easily remove the barrier coating, leaving breaches in the root protection. A literature search reveals a lack of information on whether the treatment will leach out over time, losing its effectiveness. Many greenroof experts are concerned that the solution will wash away over time. There is also no indication that this product has been evaluated per the FLL industry standards.

Although root barriers are a minor cost element in a total greenroof assembly, they can be a critical element in the long term performance of the assembly.