

Permeable Pavement Protects Seattle's Urban Trees and Makes Streetscape Safer for Pedestrians

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PAVEMENT
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As part of its continuing stewardship of the city's urban trees, the Seattle Department of Transportation replaced 38 metal tree grates along the sidewalks of 3rd Avenue with **permeable tree surrounds** installed with Porous Pave XL.

Running from Space Needle Park to the Smith Tower and Union Station Square, 3rd Avenue is a major thoroughfare with office buildings, high-density housing, retail, and restaurants. A green building product manufactured in the U.S.A., **Porous Pave XL** is a pour-in-place, permeable paving material, which combines chips of recycled rubber with granite aggregate and a liquid binder.

"Tree roots had pushed the metal grates up from their interior frames in the tree pits," Sherry Graham, arboriculturist, Seattle Department of Transportation says. "Uneven sections and gaps were a tripping hazard."

Porous Pave's recycled rubber content gives it flexibility to withstand freeze-thaw cycles, root expansion and tree growth without cracking or breaking. Metal tree grates are slick and slippery when wet. With its rubber chips and textured surface, the permeable pavement is slip-resistant. Water flows through the openings in metal tree grates, but litter also slips through, making them unsightly and difficult to keep clean. Grates can also get clogged with weeds. The entire surface of Porous Pave is permeable to allow rainwater and air to pass through down to the tree roots. Debris stays on the surface where it can be swept up or power washed away.

"Permeable surrounds with Porous Pave are tree-friendly," says Brian Holers, certified arborist, **Root Cause, LLC** (Mercer Island, WA.), the urban tree care specialist who is installing permeable tree surrounds at several locations for the City of Seattle.

"Installation requires less excavation and minimizes disturbance of the roots. You can spread and fit the material right up against the edges of tree pits and make it conform to the shapes of tree bases. These are significant advantages, since the maples and little leaf lindens along 3rd Avenue are mature trees planted in 1991."

Root Cause installed the new permeable tree surrounds in January 2018. After removing the old grates from their frames, Holers and his crew poured 1.5-in. of Porous Pave XL on a ½-in. base of 5/8 crushed aggregate. The permeable surrounds average 25 square feet in size. The gray color chosen for the project makes the permeable pavement blend in with the adjacent sidewalks.