



Land Development Services

# Technical Bulletin

**Subject: Recycled Concrete Aggregate Prohibited in Certain Applications**

**Date: 9/23/2019**

**No.: 19-10**

Summary: This Technical Bulletin establishes a new county policy that prohibits the use of Recycled Concrete Aggregate (RCA) as fill or backfill material in certain applications.

Effective Date: Immediately

Background: Nationwide, the building industry has noted performance issues related to using Recycled Concrete Aggregate (RCA) materials in the location of settlement sensitive structures, i.e., buildings, retaining walls, reinforced slopes, etc. There are uncertainties about the long-term performance of RCA, as well as issues such as:

- Degradation of these materials under soil overburden and structural loads.
- Variable consistency, texture and firmness of these materials.
- Loss in strength over time when placed below groundwater.
- Environmental impacts such as potentially threatening groundwater quality.
- Shedding fines and ultimately leaching and clogging filter media and subdrain systems.

In construction applications, the use of RCA for roadways and structures has not worked well in maintaining the effectiveness of perimeter drains and underdrains. The amount of fines in the recycled concrete is often high and the concrete tends to shed fines due to fluctuating groundwater levels. The accumulation of fines tends to clog drains and filter media. Another concern is the leachate that precipitates when lime-bearing water is exposed to carbon dioxide. This also tends to clog drains and filter media.

RCA has a very high degree of variability (based on its age, compressive strength, mix design, etc.) and is not the same as Virginia Department of Transportation (VDOT) approved crushed stone No. 57 aggregate, even though their gradation may be similar. RCA materials tend to degrade and shed fines when subjected to water table fluctuations and loads. Consequently, most of their voids can be filled with particles. RCA materials with fines are more affected by water and are not suitable to be placed below the water table.

Policy: The use of RCA materials in building pads, retaining walls, reinforced slopes and roads with underdrains is prohibited due to its potential to adversely impact the long-term performance of the structure.

If you have any questions, please contact the Site Development and Inspections Division  
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