

Carolina Fence Company Details Soil Corrosion Risks for Metal Fencing

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Carolina Fence Company has outlined guidance on how below-grade soil conditions affect metal fence components, drawing on corrosivity ratings published by the U.S. Department of Agriculture's Natural Resources Conservation Service. The guidance is directed at property owners across Charleston and Dorchester counties ahead of the region's wetter months, when rising groundwater increases contact between soil and the buried portions of a fence.

The NRCS Web Soil Survey assigns every mapped soil unit a corrosivity rating for uncoated steel and a separate rating for concrete. Those ratings are derived from drainage class, soil texture, acidity and electrical conductivity, and they are reported as low, moderate or high. The survey is publicly accessible and returns results by parcel.

The practical consequence is that soil conditions are not uniform across a service area or even across a single property. Two homes on the same street can sit within different mapped soil units, and a long fence line can cross more than one. A rating that applies at one end of a property may not apply at the other.

That variability matters for fencing because the section of a metal post below grade is the section nobody inspects. Corrosion that begins at a defect in a protective coating progresses underground and out of sight. The first visible symptom is usually a post that has begun to lean or shift under load, by which point the damage below the surface is already advanced.

"The part of the job that determines how long a metal fence lasts is the part that disappears into the ground," said Alex Buckman, Owner of Carolina Fence Company. "Two properties a few hundred feet apart can sit on different soils, and that changes what gets specified before anything is set."

Material class is one factor among several. Aluminum does not rust, which gives it an advantage where soil

moisture and salt exposure are elevated, though alloy selection, coating quality, installation depth and site drainage all affect service life. Aluminum's lower weight also changes how a post carries the load of the panels attached to it.

Ornamental iron and steel components depend on an intact protective finish. When that finish is chipped or scratched, oxidation begins at the exposed point and spreads beneath the surrounding coating, lifting it away from the metal and enlarging the affected area over time. In soils rated moderate or high for corrosivity to uncoated steel, that process runs faster than it would inland.

Galvanized chain link relies on a zinc layer applied to the underlying steel. That layer erodes gradually, and erosion accelerates where soils carry higher salt content. Once the zinc thins past a functional threshold, the steel beneath it begins to corrode in the same way any uncoated steel would.

The separate NRCS rating for concrete is relevant to footings rather than posts. Where soils are rated corrosive to concrete, footing composition and depth carry more weight in a design than they would elsewhere, since the footing is what transfers wind and panel loads into the surrounding ground.

Soil also affects stability independently of corrosion. Ground that remains saturated for extended periods loses bearing strength, allowing posts to shift laterally under wind pressure. Sandy soils compound this by providing less friction against a post surface than heavier soils do. Both conditions place greater importance on excavation depth and post-setting technique.

Gate posts carry loads that line posts do not. A gate applies a repeated, off-centre force every time it swings, concentrated at a single point in the fence line. In soils with reduced bearing capacity, that difference influences how a gate post is set relative to the rest of the run.

Carolina Fence Company evaluates site conditions during its initial design and estimate, before a fence line is laid out or materials are ordered. Assessment at that stage allows post depth, footing specification and material selection to be matched to what the ground on a given property actually presents.

The company also provides staining, painting and sealing for existing fences. Those services maintain the protective coatings that separate metal components from the surrounding soil and slow the corrosion process at the points where finishes have worn.

"Recoating a section before the finish fails is straightforward work," Buckman said. "Replacing a post after the metal underneath is gone is a different job entirely."

Property owners with existing metal fencing can assess conditions at and just below the soil line, particularly

following extended wet periods that raise the water table. Posts that move independently of the panels they support, or that sit at a different angle than adjacent posts, indicate conditions worth examining further.

Carolina Fence Company is a family-owned fence contractor with 21 years in business, serving Charleston and Dorchester counties. A member of the American Fence Association, the company installs residential and commercial fencing in wood, vinyl, composite, aluminum, ornamental iron, chain link and split rail, along with gates, fence maintenance, and tear-out and disposal. The company provides free estimates.

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