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Why We Don't Recommend Artificial Grass for Most People

By [Harry Sawyers](#) and [Gregory Han](#)

Published July 9, 2021



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stand to look at it, smothering it in rolls of fake grass might actually be an upgrade. But don't make such an investment thinking it's a low-cost, zero-maintenance, long-term solution for a problematic patch of yard. The fix won't last forever—although some tiny pieces of it might. And complications related to the disposal of synthetic turf, not to mention its impact along the course of its useful lifespan, raise serious questions about its long-term sustainability.

We went into the research for this article expecting to recommend the best artificial grasses, and when this project began, Wirecutter senior editor Harry Sawyers was considering synthetic turf to upgrade a dry patch of yard at his home in Los Angeles. The latest offerings caught our eye because fake grass has made a lot of progress in realism and popularity: Whereas fake turf of years past was blatantly unconvincing and literally rough around the edges, today a myriad of synthetic lawns are woven with realistic details mimicking the real deal, right down to individual blades of yellowed and dried grass. That level of realism has proven popular, with industry figures claiming 15% nationwide growth since 2017, for a total of 265 million square feet of installed turf in the US as of mid-2020.

As our research progressed, however, we realized we had serious reservations—synthetic turf can be a bad value over the long term, there are serious environmental problems to consider, and the costs to install and maintain any sizable, well-done installation proved so high that we concluded we'd be better off investing the money and effort in just about any other form of landscaping.

Looking for something else?



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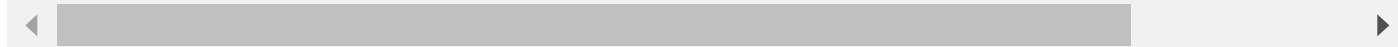
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Why you should trust us

We interviewed and read research from more than a dozen sources, including representatives from synthetic-lawn manufacturers and retailers, homeowners with installations on their property, landscape architects, and researchers specializing in waste management and stormwater runoff. We also walked through installation sites with contractors.

Harry Sawyers is a Wirecutter senior editor who has edited outdoor power equipment reviews and other lawn and garden articles for Wirecutter, Popular Mechanics, This Old House, and other publications. He previously worked as a professional landscaper in Georgia and now uses a combination of lawn mowers and string trimmers to clear his large backyard hillside every spring as required by the Los Angeles Fire Department.

Gregory Han worked for three years as an editorial manager for the Los Angeles landscape architecture firm AHBE Landscape Architects (now AHBE | MIG), helping the 17-person multidisciplinary firm communicate the art and science of its profession inside and outside its industry. He is a writer at Design Milk, as well as the former managing home editor for Apartment Therapy Los Angeles, and he has written about home design and products since 2006 for a multitude of design-focused outlets, including Dwell, Domino, and Design Sponge.

Who this is for

It's easy to understand the appeal of a synthetic lawn, especially once you get a look at the convincing level of realism in a showroom full of the best engineered-turf options available today. Combined with the allure of low maintenance, water savings, and all-season greenery, that visual appeal can really make an artificial lawn seem like the best option available, especially if you've already invested time and money in a fruitless effort to grow real grass.

Landscape designer Kathleen Ferguson noted in an interview that although she makes every attempt to steer clients away from installing faux lawns, there are instances where their application makes sense. "It's never our first choice, but sometimes it's the best option. Years ago, one of our clients had a large concrete deck on a steep hillside and wanted to create a green outdoor space for their children to play without removing truckloads of concrete or installing irrigation. They were able to apply artificial turf directly over the concrete and it was installed in just a few hours."

University of California Davis horticulturist David Burger also recognizes certain cases in which synthetic grass could be a worthy option: "Synthetic turf grass has come quite a ways in recent

Play space for pets and kids

We wanted to see (and stroll) for ourselves, so we visited a Los Angeles residence where we had the opportunity to inspect the fit and finish, ask about the installation process, and spend some time barefoot-walking, jumping, and lying down on artificial grass. These homeowners had attempted to keep a lawn for five to six years before deciding to try a synthetic lawn. They told us that a combination of drought conditions and destructive wildlife—and the stresses of sheltering in place as parents of children ages 6 and 8 requiring an outdoor space to “burn off energy”—eventually tipped them toward spending “around \$4,000” to turn the “sad-looking patch” into a functional play area.

They're pleased with the results of the 30-by-20-foot installation, and they told us that the kids and their two dogs love it (we asked the kids, and they concurred). Parents do workouts on it on the weekends. “We have never spent more time in our backyard, so it was very worth it and we only wish we would have done it years ago,” they said.

One thing we haven't found yet in our research—and something we hope to add in a future update to this guide—is the perspective of a longer-term owner who has dealt with replacing aging synthetic grass. Judging from what we've read on [Reddit's r/artificialturf subreddit](#), it seems likely that some homeowner may have been in this position. If that's you, did you get new turf or go in a different direction?

Upgrade of a challenging surface

A lot of the people happiest with this purchase aren't even going for the super-polished, pristine installations you might see on the cover of a grass manufacturer's brochure. They didn't even put the artificial turf on a “lawn” in the first place. Consider the formerly concrete Brooklyn backyard of Wirecutter editor Jon Chase, who ordered a few [Pet Grow 6.5-by-10-foot mats](#) on Amazon during the pandemic and plunked them down with minimal site prep. Previously he had replaced the concrete with grass, but it struggled, so he was ready to try something else. “I used a thatching rake and kind of moved the dirt around, measured, rolled out the carpet to fit, stapled it down, then dug borders and placed 1-by-2s,” Jon said. He's happy with it.

You might imagine the same for a stretch of paved patio, a [balcony](#), or a section of roof you want to make more habitable. Used like an outdoor rug, fake grass can be an improvement.

Manufacturers we interviewed suggested adding a 1/8-inch foam pad underlayment (as you might with a rug) to give it some extra squish. Many of the [big supply warehouses](#) will sell you their scrap pieces, often below the regular rate. Wherever you shop, it's worth seeing the material with your own eyes (and experiencing it with your hands and feet) if at all possible, either by visiting a

Value, costs, maintenance—and why we decided against artificial turf

While Harry was shopping for synthetic grass for his Los Angeles residence, Gregory was separately researching the options available for this guide, which we had conceived with every intention of recommending the best synthetic-grass options available today. When we reconvened to compare our research notes, however, some issues emerged to cast doubt on the value and sustainability of the entire product category.

At Wirecutter we always try to think of value in the long term, especially on an investment of this size, and when it comes to a synthetic lawn, looking to the future is where the logic starts to break down from a personal budgeting standpoint. Your average artificial lawn might last a decade and cost thousands of dollars to install. We don't think that's a great long-term investment in a yard, especially in comparison with any number of longer-lasting landscaping alternatives.

The warranty offers a clue as to the expected lifespan. The best artificial-turf options often have a warranty that provides several years of coverage; for example, this [Purchase Green limited lifetime warranty \(PDF\)](#) offers 100% coverage for the first eight years and partial coverage after that. After comparing the way the warranties are structured with what we heard from industry experts, alongside the evidence of [widespread removal of synthetic grasses](#) installed within the past decade or so, we've concluded that it's fair to expect an average of about 10 years out of this investment.

80 to \$11,460 for the same job quoted with two different species of grass. A second bid for a scaled-b

Bid 1



Estimate

ADDRESS
Harry Sawyers

ESTIMATE 2511
DATE 05/11/2021

PROJECT MANAGER
Marjorie

DATE	ACTIVITY	DESCRIPTION	QTY	RATE	AMOUNT
	AGG50/50 BELAIR	<p>**May Promo Applied**</p> <p>Total area of work 960 sq. ft of yard.</p> <p>70' Linear Bender Board</p> <p>Add Gopher mesh</p> <p>Evaluate entire work area; calculate square feet, assess terrain, grading levels, and access of work</p> <p>Provide dumpster for all demolition</p> <p>Remove all grass and soil approximately 2-3 inches below grade and haul away debris</p> <p>Remove any and all roots, rocks, and obstruction in the way (not including city piping, drains, and or water lines)</p> <p>Compact soil as needed and create slope of 3 degrees away from home</p> <p>Apply raw base ultra #2 and compact as needed</p> <p>Apply weed barrier high density in an overlap fashion and secure using nail anchors</p> <p>Apply ultra soft natural turf Model #AGG50/50 BelAir ULTRA SOFT, stretch, tighten, and anchor</p> <p>Brush entire surface using roto brush machine</p> <p>Apply organic fill and disperse evenly throughout the entire turf area</p> <p>Cap Sprinkler system as needed</p> <p>Clean up and haul away excess debris</p> <p>Labor and material included</p>	1	10,980.00	10,980.00

60 for
oughly

20-by-20-foot square, ranged from \$1,652 to \$1,824 for two species of grass. Note that on the smaller job, this quote is just for the turf, the infill, and a few accessories; securing the additional base materials and compaction-equipment rental to fully install it would require spending several hundred dollars more.



Consider that timeline alongside the two bids that Harry received for installation of an approximately 960-square-foot expanse of grass in Los Angeles—both north of \$10,000, likely more than \$1,000 a year if averaged over the course of the expected lifespan. The sources of the cost start with the turf itself, which can go for as little as a buck or two per square foot of the material and jumps to at least \$6 or \$7 per square foot, sometimes north of \$10 per square foot, once you factor in the labor of hauling the material in and out, not to mention the layers of base material you'll need to buy, deliver, install, and tamp down before the fake grass goes on. Humbled, Harry explored bids for just the material alone on a smaller, 20-by-20-foot square. He found that he could get the turf itself for just under \$2,000 but would need to budget hundreds more for the base-layer materials and compaction-equipment rentals—and that, even on this “smaller” job, he would be well-advised to hire a pro to install it. Adding in that service, the company said, would nearly triple the cost, bringing the total to about \$5,000 to \$6,000 for a complete installation on the smaller area.

Going into this project, we figured a synthetic yard would be essentially zero maintenance, but that proved to be wrong. In fact, it requires maintenance that a regular lawn doesn't need.

As an alternative, imagine dedicating that amount of money to simply maintaining and slowly improving the landscaping on the property in that duration. You could see one of two possible outcomes around the year 2031: either a showstopping array of mature native plantings and a thriving ecosystem, or a worn-out and degraded scrap of fake turf ready to be ripped out and trucked to a landfill, which would expose that same old dead patch of earth, suddenly in serious need of a new investment.



The property next door has clusters of mature succulents and in-ground sprinklers. (Minimally maintained lawn grasses don't seem to do well on this block.) Either yard represents an investment in money and effort, but the living version has better long-term prospects. Photo: Harry Sawyers



A big element driving up the costs is the expanding suite of features the best turf uses to mask its inherent shortcomings (or, as the industry would prefer to put it, to make it feel real). Plastic mats can get scorching hot in the sun—this was the first consideration nearly everyone we spoke to mentioned—so you can address that with various proprietary solutions (often coatings on the grass) meant to reduce heat gain. Pet odors come up a lot, too, so there are features to mitigate the stench of animals relieving themselves on sunbaked plastic. Drainage is an issue, so the best fake grasses tout their permeability features. Critters burrowing up through the turf can compromise the entire installation, and that is a problem the installers can solve for you with an additional subterranean layer of metal mesh sandwiched between the base layers and the turf. That one piece, commonly called the “gopher guard” by installers we spoke to, added another couple thousand dollars to Harry’s bid.

example: Run across or lie on real living grass, and given enough time, any flattened section will bounce back to its original upright position. Synthetic grass can't do that on its own, so it requires mechanical raking or brushing, plus the addition of an infill—some sort of particulate material intended to help keep blades upright, create a more convincing springy feel underfoot, and weigh down the artificial grass so it doesn't wrinkle or shift around.

This infill material must be reapplied over time—the question of where it's going is, in fact, one of the most serious problems our investigation unearthed—and doing this adds cost and labor to any fake-grass ownership over the long term. Here's a quick look at several common types of infill options, as well as their general pros and cons:

Crumb rubber: The first and original infill, crumb rubber remains popular because it's cheap, priced as low as about 60¢ per square foot. Made from recycled tires, SBR (styrene-butadiene rubber) requires minimal amount of maintenance, is nonabrasive and resistant to mold and mildew, and can add a bouncy cushion underfoot. But like any infill, this material can enter soil and waterways via runoff, and it was the focus of much of the research we read on artificial turf's role in contributing microplastics to the environment.

TPE-coated sand: Sold under the brand names Durafill and Envirofill, sand processed and treated with elastomeric or acrylic coating feels cool underfoot and offers a natural appearance. Its antimicrobial coating is ideal for applications where pet waste is a concern.

Zeolite: Great if odor control is a primary concern, this naturally sourced microporous aluminosilicate mineral offers a desirable combination of rapid drainage, cooling properties, and a quick drying rate compared with sand or rubber.

Organic infill: Sourced from cork, walnut shells, or coconut husks, organic infill reduces the surface temperature and can break down more easily than other options, according to manufacturer claims. But its light weight can make it more likely to be carried away with runoff.

Brands you may encounter

If you want the best-looking fake grass, generally you'd need to go with a higher-end company, and the majority of these brands serve as manufacturers, retailers, and installers. That shifts the dynamic for the customer a bit, making the process of selecting the turf just as much about hiring the firm—evaluating its reputation, looking for customer feedback, consulting local forums for advice, and relying on whatever other resources you might turn to when vetting a contractor in your area. You can also find versions of [synthetic grass at Home Depot](#), but as we discovered in similar research that Wirecutter performed regarding hot tubs, a lot of the best, highest-quality, longest-lasting installations are not DIY jobs.

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being sold in most areas nationwide and as an item you can find at [Lowe's](#) and other retailers. (A lot of the other turf options we evaluated were available only regionally or were exclusive to a certain retailer or installer.)

We saw several samples of SYNLawn's products firsthand, and a few are worth mentioning as examples of what you might encounter with SYNLawn or other brands. Near the top of the line, we looked at [SYNLawn SYNAugstine X47](#), a high-density mixture of wide and thick 1⅝-inch-tall blades interspersed with an assortment of curly thatch filaments of varying shape and weight. This type of construction and level of realism is the type of thing you can find for similar prices from other manufacturers, and it was one of the most convincing fake grasses we tested in appearance and feel.

We evaluated some other SYNLawn varieties for comparison. [SYNLawn Pet Platinum](#) adds an antimicrobial coating and some enhanced permeability for better drainage, but it gives up some of the plush softness of SYNAugustine. There's also a version engineered for roof applications, [SYNLawn Roofdeck Platinum](#). Unlike the manufacturer's other models, Roofdeck Platinum is made with only green-hued nylon filaments; as a whole, the monochromatic yarns are noticeably less convincing as grass, and the material has a crispier texture than its polyethylene counterparts (running fingers across it feels similar to stroking a pig-hair-bristle brush). But the nylon construction also means a lighter overall weight of just 88 ounces per square yard (in contrast to the 128-ounce SYNAugustine X47). Like many competing synthetic turfs, Roofdeck Platinum has a UV coating and reflective pigments designed to keep it cool during the summer months and to slow any fading over its useful lifetime.

When you're considering a larger installation, with a higher budget and a stricter requirement that the installation look more realistic, you're likely to be dealing with whatever regional supply houses have a share of the market in your area. In the western US, for example, you may be near one of several retail locations for [Purchase Green](#), a manufacturer, distributor, and installation chain that makes high-quality, competitively priced options. It has more than two dozen stores from California to Texas, it ships nationwide, and it sells dozens of styles that differ in materials, density, pile height, levels of realism, colors, and features to address specific concerns such as heat buildup, drainage, and pet odors. Although Purchase Green is not exactly unique in many respects, it represents the type of place you may be dealing with if you go forward with a DIY or professional installation on an ample budget.

Similar firms we also came across include [Synthetic Grass Warehouse](#), another manufacturer and distributor with national reach. [Artificial Grass Turf Warehouse](#) came up in our research as a manufacturer/distributor wholesale outfit geared toward landscape pros as well as homeowners, and also one of a few firms offering a 15-year warranty. [Artificial Grass Superstore](#) came up as a

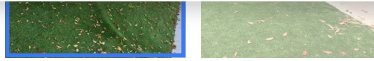
The above is hardly a comprehensive list of brands, but the concepts behind the features they offer are similar to what you're likely to encounter among the options in your area.

When to hire an installer

Most homeowners can handle an area of up to about 300 square feet as a DIY job; this is an approximate figure we heard at Purchase Green and repeated elsewhere. (Of course, some ambitious folks are comfortable doing bigger jobs on their own.) For most people, though, more than a few hundred square feet can start to get overwhelming—especially when you're leveling, grading, and consistently tamping a large area so that all the substrate is evenly compacted—and that's when you see people taking shortcuts that can lead to an installation that fails to last as long as it should.



What's that wrinkle? This Los Angeles lawn had several; some felt like roots, others more soft and bubble-like. Hiring a pro installer should help avoid this look. Photo: Harry Sawyers



Aside from keeping the work manageable, hiring a pro should prevent the visible imperfections you may have seen on aging installations in your neighborhood or at a local putt-putt course. The borders should likely be staked down without showing a ragged edge. The seams should not be apparent. You should be able to avoid visible wrinkling of the turf. Ideally you won't see two different colors from one piece to the next. Hopefully any investment in a barrier of metal mesh will convince the gophers to go elsewhere. And those coatings meant to manage the effects of urine and ultraviolet light should work as expected—for a while, anyway.

Environmental and health impacts of synthetic turf

Aside from the high cost, short lifespan, and maintenance requirements of artificial turf, serious environmental concerns are another reason we can't recommend it. The synthetic-grass industry pitches its products as sustainable, emphasizing the renewable ingredients within the grass, as well as the claim that the turf can be recycled at the end of its life. As George Neagle, executive vice president at SYNLaw, put it in an interview, "SYNLawn has been using renewable resources like soy and sugar cane since 2008 to create bio based artificial grass." Neagle also claimed the grasses "are being recycled" after use.

It is true that a portion of many synthetic grasses comes from some renewable sources—but another, usually larger, portion does not, and the recycling claim is a misleading statement we'll unpack in a moment. Taking a step back, though: We had originally approached Neagle to ask about the bigger-picture environmental consideration, namely the overall impact of synthetic turf on the natural habitat, including wildlife normally found living across and underneath soil, as well as the soil health itself. This was the primary concern underlying the hesitancy (if not outright hostility) we heard in several interviews with landscape designers, horticulturists, and plant physiologists about the growing proliferation of artificial lawns.

"I can't think of any real benefit of artificial turf, other than maybe for sports stadiums," said James Baird, a horticulturist and an extension specialist in turfgrass management at University of California Riverside. "Natural grass doesn't waste water—people and faulty irrigation systems waste water!" Water waste is another detail that comes up a lot from artificial-turf manufacturers as a primary reason to claim an advantage over natural turf in terms of sustainability. And it's true that a traditional lawn can use excessive amounts of water, especially in a poorly designed system, but there are often additional solutions to consider.

To Baird's point about sports stadiums, one surprising finding in our research was that age-old synthetic-turf injuries, such as turf toe, are actually not a thing of the past—in fact, sports-

sustain an injury during athletic activity on artificial turf than on natural grass (here's the [published review](#)). This happens at the pro level, too: The NFL Players Association [made news in September 2020](#) when its president, citing years of higher rates of injury on synthetic versus natural grass, [advocated for the NFL to switch from synthetic to natural grass](#) on all playing and practice fields. And yet in April 2021, the [Carolina Panthers announced plans to switch to a synthetic field](#), claiming that grass was too difficult to maintain. (Part of this new reduced-maintenance strategy includes plans to replace the entire top layer of the synthetic turf every two to three years.)

Sports stadiums were also the focus of some of the most alarming research about the future of synthetic turf as it relates to the environment and sustainability. In several European countries, where synthetic football pitches installed in the mid-2000s have reached the end of their lifespan, studies looking into the [disposal](#) of the turf, as well as the synthetics' role in contributing [microplastics \(PDF\)](#) to the soil and waterways over the course of the fields' installed lives, consistently portray an ominous situation developing. A few themes emerged as we read academic research out of Sweden, Denmark, and the UK. To sum it up: Researchers can't pinpoint an exact measure of the microplastics entering waterways via runoff from synthetic pitches, but conservative estimates put the number well into the hundreds of kilograms per pitch per year, with some estimates reaching into the thousands. In Sweden, synthetic sports fields are believed to be the [second-highest contributor \(PDF\)](#) of microplastics into waterways, with only "road wear and abrasion of tires" dispersing more of the stuff via roadway runoff. And that's actually a reduction—officials in that country previously recognized the issue and [took steps to mitigate it \(PDF\)](#)—yet researchers still believe there are hundreds of kilograms of microplastics emerging from each field. In Norway, one researcher found microplastics in [85% of the soil samples \(PDF\)](#) collected from the bottom sediments of streams near artificial-grass pitches. In the US, there is relatively scant research on this topic, and although the impact of runoff within the 265 million square feet of installed synthetic grass is uncertain, it's clearly not nothing.



Your Laundry Sheds Harmful Microfibers. Here's What You Can Do About It.

While further research will reveal the extent of the microplastics threat, one phenomenon already in plain view is the massive disposal problem that cities and property owners are facing when removing aging synthetic-turf installations. A few highlights from a [bleak report](#) on this topic in The Atlantic: Separating the constituent parts to recycle this polymer sandwich is nearly impossible and almost never done, by default leaving gigantic heaps of it piled up in a landfill—

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discarded turf simply piled up in open fields. Other times, it's accidentally or intentionally incinerated, releasing a cloud of atmospheric compounds that can do their own damage. Focusing on Southern California, where local officials invested millions in artificial-turf fields that are prematurely failing, you see the economic and environmental fallout combined. A related 2017 class-action lawsuit against a manufacturer, FieldTurf, alleging that the company "defrauded customers by knowingly selling defective artificial turf sports fields," shows several examples (including the California school districts, plus other plaintiffs nationwide) of how beholden the customer can be to the synthetic-turf maker's willingness to act in good faith when things go wrong. Reading the reports, you can sense the frustration from government officials, who recognize the problem but struggle to hold anyone accountable as more rolls of turf age and the problems literally pile up.

Alternate solutions you can consider

In researching synthetic grass, and finding so much evidence steering us away from it as a long-term or even temporary solution to a problematic patch of lawn, we became most sensitive to the needs of readers who may have tried and failed with real turf in a lawn already. If that's you, know that we sympathize with your frustration over what may be a substantial amount of wasted effort and expense so far.

Our first suggestion is to reach out to the nearest university's local field extension office to talk to the people there about species of grass that tend to thrive in your environment, as well as soil pH and other adjustments that might help, the role that seasonal timing plays in planting and maintenance, and other factors that could affect the success of turf in your area. Wirecutter senior staff writer Doug Mahoney, who raises sheep and other grazing animals in New Hampshire, has had success corresponding with Carl Majewski, a dairy, livestock, and forage crops field specialist with the University of New Hampshire Extension. If you're lucky, you may have a Carl Majewski near you.

Doug's research has also led him to a couple of helpful texts on this topic. [The Art and Science of Grazing](#) is a valuable resource, and its author, Sarah Flack, is a Vermont-based consultant who occasionally hosts relevant seminars. [Dirt to Soil](#) is another helpful book about creating and maintaining healthy soil. Its author, Gabe Brown, is a respected figure in the regenerative-agriculture world; he offers good advice in [this presentation \(video\)](#) about his five principles of building healthy soil.

One thing that has come across to Doug over years of research on this topic is experts' consistent belief that there is a way, with the right materials and methods, to successfully and sustainably grow grass in just about any environment. Even in a desert environment like Las Vegas, you can

sprinkler controllers involved, the up-front investment of time and resources could translate to a low-effort, efficient green space you can enjoy.

Maximum efficiency, minimum effort



The Best Smart Sprinkler Controller

The fact that you have options in hardscaping and drought-tolerant shrubbery probably isn't news to you. But we would be remiss if we didn't acknowledge the point of view that a grass yard, to begin with, is a bit of an antiquated notion in this country, and if you really examine the reasons people have considered a grass lawn to be an ideal, it might not have ever made sense. That radical concept lay at the heart of the conversation surrounding Megan Garber's excellent 2015 article in *The Atlantic* titled "[The Life and Death of the American Lawn](#)." Fair points, but let's not shut the door on the whole deal just yet. After all, you might still want an open space for kids and pets to play. Whether that space includes [weighted croquet wickets made for use with fake turf](#)—well, that's up to you.

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Harry Sawyers is the senior editor covering home improving, HVAC, and gardening at Wirecutter. He previously worked at This Old House and Popular Mechanics magazines; before that, he restored historic houses and mowed lawns for a living. He lives in a house in LA with his wife, three boys, a dog, and a lot of Wirecutter recommendations.

**Gregory Han**

Gregory Han is a design, travel, and lifestyle writer, and the co-author of *Creative Spaces: People, Homes, and Studios to Inspire*. His work can be found at Design Milk, Dwell, Domino, Apartment Therapy, and Airbnb.

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