



## Focus Article: Anatomy of a Bouldering Gym Floor

Understanding the fundamentals of design, materials, and goals.

With the progress and growth of the climbing gym industry comes a lot of opportunity for companies to dedicate resources to not only improving the climbing experience, but also the products themselves. The first products in any growing industry typically come from adaptations of products made for different but similar uses. As a result, it makes sense that early climbing gym flooring was something more suitable for playgrounds or gymnastics rather than actually attenuating a falling climber safely. It was evident for many years that bouldering needed its own dedicated flooring as the sport progressed and climbing gyms received more attention and saw more climbers flocking to their doors.

Fast forward to [Habit Flooring](#) and the introduction of the [12" Ballistic System](#) in 2012, when indoor climbing reached a new height in products exclusive for their use. Until then the industry standard had been products that were good stop-gaps and had increased safety due to foam thickness and custom shaping, but that is mostly where the benefits stopped. The essential characteristics of a climbing gym environment led to new design criteria that had to be addressed and Habit Flooring pulled out all the stops to develop a system that met every single one of them.

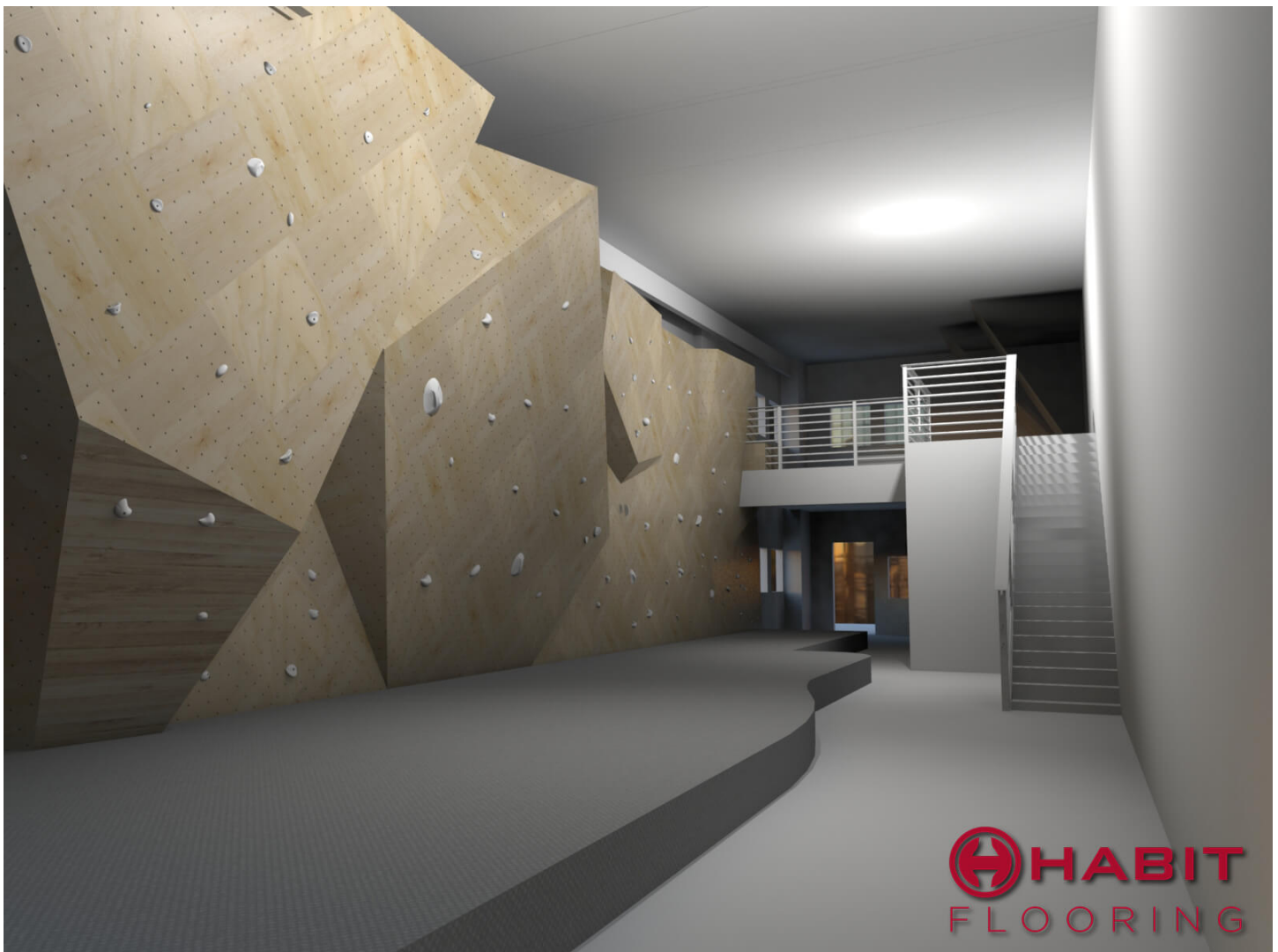




## Design Phase

Like many industries had learned, being able to digitize and model a three dimensional space allows for an incredible advantage in design efficiency. It allows you to bring ideas to life in a quick and efficient way, and make design tweaks and large-sweeping changes easily without losing a lot of time in the development process. This is why for every Habit Flooring bouldering system, a 3D model is essential. To build the model we do one of two things: We either fly a Habit technician out to your location to laser scan your space onsite, or we utilize the existing CAD model of your climbing gym if one exists. This laser scan process, which can take anywhere from an hour to a full day depending on the size of your gym, has an incredible level of accuracy. When utilized by the Habit Flooring design team, they can easily turn that scan into a digital model of your space, and create a floor plan for your bouldering system that covers critical fall zones, maintains the essential flow of your gym, and gets manufactured precisely to your building's specifications.

One of the greatest features of Habit Flooring fabrics is the ability to truly customize your bouldering floor colors to your climbing gym brand exactly how you envisioned it. The Habit team can provide photo-realistic renderings of your model to show you how a number of color choices would look actually installed. They have a handful of standard base colors available, such as cardinal red, charcoal, black, and royal blue, but also available are many dozens of others to choose from to customize your application and highlight the vertical sides.



## Manufacturing Phase

After your design is finalized, the fun part for you is over and Habit tackles the manufacturing head-on at their Salt Lake City sewing production facility. Here, soft goods experts select the specified color of ballistic 1050D Nylon for your project and start working on an exact pattern for your gym floor using the 3D design model. 1050D is an incredible material that was selected by Habit R&D over traditional entry-level vinyl covering for multiple reasons:

**Water & Stain resistant** – The Habit 1050D variant is custom coated with DWR and fabric backing to ensure your floor appearance remains the same throughout its lifetime.

**Durable** – It is highly resistant to tears from climber falls or sharp equipment drops, abrasion from rubber and plastic, punctures from routesetter impact guns, and a lifetime of foot traffic.

**Confining** – The actual construction of this fabric allows for chalk to be trapped on the floor, instead of being tracked onto your holds, walls, and walkways. This also cuts down on chalk in the air throughout your facility.

**Cleanable** – The nature of the material allows it to be vacuumed quickly and easily, because the surface is not 100% smooth so vacuums won't seal and get stuck to the surface.

**Strong** – When compared to a vinyl system, this material can take a beating because it is approaching double the actual material strength proved in ASTM testing (the international standard in professional material testing and standards development).

**Aesthetic** – The natural composition of this 1050D means that it is resistant to the wrinkling and stretching found in most other systems that can look very unprofessional as a result and increase cleaning difficulty.

This material is cut and sewn precisely to form a clam-shell system, another feature unique to Habit Flooring. This top-and-bottom shell system encases the foam matrix and therefore eliminates any potential damage from flooding, large spills, and moisture. In addition, this allows for a much easier installation onsite because the system is self-contained and not relying on attachment to other building surfaces to isolate movement.

Having their own one-of-a-kind production facility and over a decade of crash-pad and sewn-manufacturing experience allows them to have the process and tools necessary to create extremely high-strength and hidden sewn seams on the top and bottom shells. This in-turn, creates the strength necessary to maintain consistent squeeze on the foam matrix inside, without chance of seam-failure due to climbers falling or just walking over them. This quadruple-stitched method is also hidden in the design, as seam thread becomes the weak link in the durability chain when exposed to chalk and abrasion. Another benefit of this facility is the massive production tables at their disposal to create pad sections of up to 1000 square feet. This ability to create large modular flooring sections results in fewer sections in the overall layout/design, which looks more aesthetic and custom designed to your facility.

Inside the impenetrable shells is the high-density HR foam matrix which can be custom-suited to your specific application and wall height. Through extensive testing, they've found a baseline foam stiffness that is perfectly matched for climber safety on falls from 16 feet, while ensuring longterm durability. In the instance your customers are climbing from higher or lower heights, Habit has foam systems in place to accommodate. Domestically sourced foams are key to the system integrity, as the R&D team has found similar products from outside of North America have an inferior composition that breaks-down faster over time. The bottom line: this system is completely designed from head-to-toe with not only climbers in mind, but also climbing gym owners.



## Install Phase

Habit technicians are the best in the business. Much of the simplicity and ease of installation is due to the inherent design by Habit, but at the end of the day, the crew's expertise in installation is what drives the perfection of the final product. Depending on your gym size, installation time can vary from less than a day to three days, when completed by Habit technicians which are flown onsite to your location.

Installation is less complicated than other systems on the market because of the large modular sections which Habit designers create. This results in fewer seams, more structural integrity throughout, fewer sections to actually install, and no pad shape that is identical to another which mitigates any confusion.

The final results of this massive team effort is a system that is undeniably the longest-lasting in the business. When Habit designers set out to completely upend climbing flooring, reducing the service interval and replacement interval was paramount. Many systems on the market carry the expectation of replacement inside of 2 years. Habit has existing systems in the field over 5 years old which is proof-positive that results are delivered, and a massive amount of money is saved on *not replacing* your floor every 2 years or less.

Standing behind all of this work is again, a first for the industry: a 2 year full warranty with top shell replacement program. Any time you have to warranty or replace a product, it is disappointing. Habit designers understand this, and wanted to change the game when it came to addressing issues that come up in climbing



gyms. The inherent design of the system created by Habit means that for whatever reason, be it someone dropped a knife on your floor or someone accidentally ran a power saw across it while making something, if you need to replace your top-shell it's a quick, precise and comprehensive process. Unlike other flooring systems which would send you a general "patch" to cover up the damaged area resulting in a very unprofessional look and solution, Habit has the ability to create an exact replica of your top shell made to the exact specifications that your initial system was. Then they ship this out to you quickly, and you replace the entire top shell for a brand new product and no patches for a comprehensive solution. The benefit of this is the massively reduced amount of time you have to close down your climbing wall during repair, along with having as-new consistent fabric integrity. Most sections can be replaced by your route setting team in under 2 hours, which maintains happy climbers and even happier gym owners.



Plotting the creation and development of products specifically designed and manufactured for indoor climbing gyms, you will notice a large ramp-up that correlates to general popularity of the sport. As participation keeps increasing, so do the number of climbing gyms and industry employees like routesetters and general staff. Whom better to dictate the design direction of a climbing flooring system than the users and direct



benefactors of it? The Habit Flooring system was the first system that really took into account usage not only by climbers but by gym owners as well, and formulated design criteria that aligned in all directions while saving an incredible amount of money over the lifetime of the product. Quite frankly, it is the most durable, aesthetic, cleanable, and serviceable bouldering floor system on the market, and a poster-child for a climbing product designed by climbers and climbing gym owners.

To learn more about [Habit Flooring](#) systems, including their [bouldering](#) and [route floor](#) systems, head to [their website](#) to get the details, see [galleries of installs](#), or get an [instant project quote](#).

