

# The Gift

---



---

*The true gift is not just in the giving, but also not looking the gift horse in mouth and finding another splendid way to repurpose an item.*

---

BRIAN BRENNER

**D**an was free at last. After eighteen years of living under the watchful gaze of hovering, helicoptering parents, he was a freshman at college. His parents said their tearful good-byes and took off for the long, solitary return trip to New England. Dan watched the station wagon's exhaust fade away. All around him, students unpacked clothes, televisions, computers and other essential bric-a-brac. Classes hadn't started yet so he had a few days to experience college fun with no responsibilities. He was free, free, free! He relaxed in his new dorm room with his new roommate, a kid whose last name ended in "y." Out in the hall there were girls. Someone was tossing a football. The dorm room was neat and spotless, at least for now. The two moms had organized everything, with the clothes carefully folded and each item in its proper place. The floor was not yet piled with dirty laundry or half-eaten food. Dan and his new roommate smiled. That would change.

As he was checking out the new lay of the land (his land), Dan looked in his sock drawer. A gift-wrapped box was hidden below the socks.

The kid whose last name ended in "y" said, "Looks like you got a present."

"It's cookies," Dan said. "My parents baked cookies." He said this in a neutral, play-my-cards-close-to-the-vest tone of voice. Probably he would share the cookies, but Dan was really hungry and he wasn't completely sure that he would share them.

The box had an envelope with a card. Normally, Dan would go straight for the cookies and ignore the card, but that didn't seem appropriate in this case. Even though his folks were gone only an hour, this time they were really gone, so he decided that he should read the card first. That way, it would be more respectful of the gift. The card said:

Dear Dan,

We love you. We are so proud that you're starting your college year. Best of luck. We are looking forward to being grandparents. Just not yet.

Love, Mom and Dad

Dan reread the last line several times and then opened the box. It wasn't cookies. There was an assortment. Since mom and dad weren't sure exactly what type to get, they got everything.

The kid whose last name ended in “y” asked, “What kind of cookies did they make?”

Dan said, in a much different tone of voice, “It’s not cookies.”

## The Point of the Story

It’s probably not obvious, but this story is related to the performance of triaxial tests. These loading tests are performed by geotechnical engineers on soil samples. The samples are cut to be cylindrical in shape, about eight inches long or so, and they are placed in a testing device and exposed to different types of stress. The objective of these tests is to measure how the soil reacts under different loading conditions. By doing so, geotechnical engineers can determine soil properties and overall behavior, as well as model foundation and substrata performance during construction.

In order to run the test, the soil sample is placed a chamber filled with water. Clearly, the soil sample must be contained, or the water will mix with the soil and the sample will turn to mud. The most common method to contain the soil is to place it in an impervious membrane. It is possible to purchase membranes specially designed for triaxial tests, but most geotechnical engineers don’t bother. Suitable membranes are conveniently available at the local drug store, in shapes and strengths satisfactory for the tests. To get proper results, however, only certain types of these commonly available membranes may be used, and they must be applied using the correct procedures. For some reason, little documentation is available on the proper way to use these membranes for triaxial tests. The key information has been largely transmitted by geotechnical engineers via word of mouth, often in a hushed tone of voice.

## Keeping It Simple

Should you need to run a triaxial test of, say, clay, note when selecting a membrane that you really want to use the basic product. You don’t want or need frills. In the old days, circa *Summer of ’42*, membranes were available in pretty much one shape and type, but today, membranes come with an explosion of options. For geotechnical purposes, you do

not want to select the membranes with projections. Ruffles and ridges will interfere with proper performance during triaxial tests. Membranes of different colors may be aesthetically attractive, but the color is not really relevant for the success of your test. However, size does matter when it comes to membranes. A very large sheath may be too large for the soil sample and may fail to properly contain the material. Also, specially coated membranes are not appropriate for triaxial testing and should be avoided. The various coatings can interfere with the results.

It’s helpful to have a large supply available, so when purchasing membranes, buy in bulk. Let the sales attendant know that you are a geotechnical engineer performing triaxial tests. All weekend.

## Relying on Experience

Back in the lab, when it’s time to fit the membranes onto the soil samples, most geotechnical engineers report that experience is key. After much trial and error, novice triaxial testers eventually get the hang of it. It is important to use two membranes instead of one, because keeping water out of the sample is essential. Apparently, membranes often have small nicks and cuts that can lead to water infiltration.

Geotech professors comment (not in writing, of course) that triaxial test instruction has a unique component, with an aspect not present in many other civil engineering topics. In the old days (again, circa *Summer of ’42*), virtually all civil engineering students were male, which was simultaneously easier and harder for triaxial test lessons. Nowadays, many more women are studying to become civil engineers. The best teaching method, therefore, is a studiously clinical approach, with an irony-free, straight-lipped delivery.

## A Good Course of Action

When Dan’s freshmen year ended, his parents piled into the station wagon and drove back down to Maryland. It was the drop-off process only in reverse. All of the students were deconstructing their dorm rooms and dragging the voluminous bric-a-brac to the street.

Fortunately, we borrowed a rooftop carrier to fit all the extra stuff Dan had accumulated. This was where I stuffed Dan's dirty laundry — all four weeks of it. Dan had timed his last wash so that his clean clothes, or some semblance of them, would run out just as we arrived.

Dan had a great year and preparing to leave college was bittersweet. It took many trips from his dorm room to the street and many hours to empty out all his stuff. The loaded station wagon looked like the vehicle at the beginning of the *Beverly Hillbillies*, except that Granny wasn't riding in the back. If it mattered, I suppose that none of the college kids knew who the *Beverly Hillbillies* were anyway. The dorm room that had been home to the two boys during their first-year adventure was now forlorn and nearly bare. In one corner, with piles of refuse waiting to be tossed, was the empty gift box.

The empty box reminded me of engineering school and my days in the geotech lab. I said to Dan, "I remember Intro to Geotech. That was a great class."

Dan said, "Yes, Dad, I learned a lot in Intro to Geotech. I'm glad I took that course. I enjoyed it."

The kid whose last name ended in "y" was puzzled. He said, "Mr. Brenner, Dan didn't sign up for Intro to Geotechnical Engineering."

NOTE — *This essay first appeared in Brian Brenner's book Bridginess. Reprinted courtesy of the American Society of Civil Engineers. Available at [www.asce.org/bookstore](http://www.asce.org/bookstore).*

BRIAN BRENNER is a Vice President with Fay, Spofford & Thorndike in Burlington, Mass. He also teaches engineering classes at Tufts University. He served as Chair of the editorial board for *Civil Engineering Practice* for seven years.