

# CASE STUDY

## NEW CONSTRUCTION STABILIZATION



### Problem

A parkade regularly used for youth programming and other activities was awarded a donation for an expansion to be made on the 1970's building. During the construction of the addition, the area was backfilled with  $\frac{3}{4}$  crushed stone to prepare for concrete to be poured. A spread footing was built and the framing was constructed for the future wall. Unfortunately, the fill was improperly compacted and could not support the weight of the footing. The project engineers and contractor were concerned that the gravel would also settle under the weight of the slab after it was poured. So they contacted their local concrete lifting and stabilization contractor.

### FillFoam Solution

The concretelifting contractor team designed a plan to stabilize the gravel and increase the load bearing capacity. This plan consisted of two parts. The first part was a layer of polyurethane foam to be installed to bind together the loose gravel. HMI HF 402 was chosen because of its unique foam characteristics.

The second and final stabilization technique was to install FillFoam™ to fill in around the stone and lock into place. Precision laser measuring equipment was utilized to monitor for movement and identify when foam was installed until refusal. It was very evident when installing pipes at depth that the lower layers of gravel were not compacted.



*Deep Foamjection™ Pipes Installed*



*FillFoam™ Pipes Installed*



*FillFoam™ Installation*

To learn, more call 306-552-5438 or visit [ecofillfoam.ca](http://ecofillfoam.ca)

(cont'd from page 1)

Various densities of FillFoam™ were installed throughout the project. Higher densities that were more fluid were installed where further flow was required. This allowed material to flow under the stairwell. In other areas, flow was limited by installing a lower density FillFoam™. With HMI/FillFoam's engineering support, the local contractor was able to successfully stabilize the gravel for the building addition.

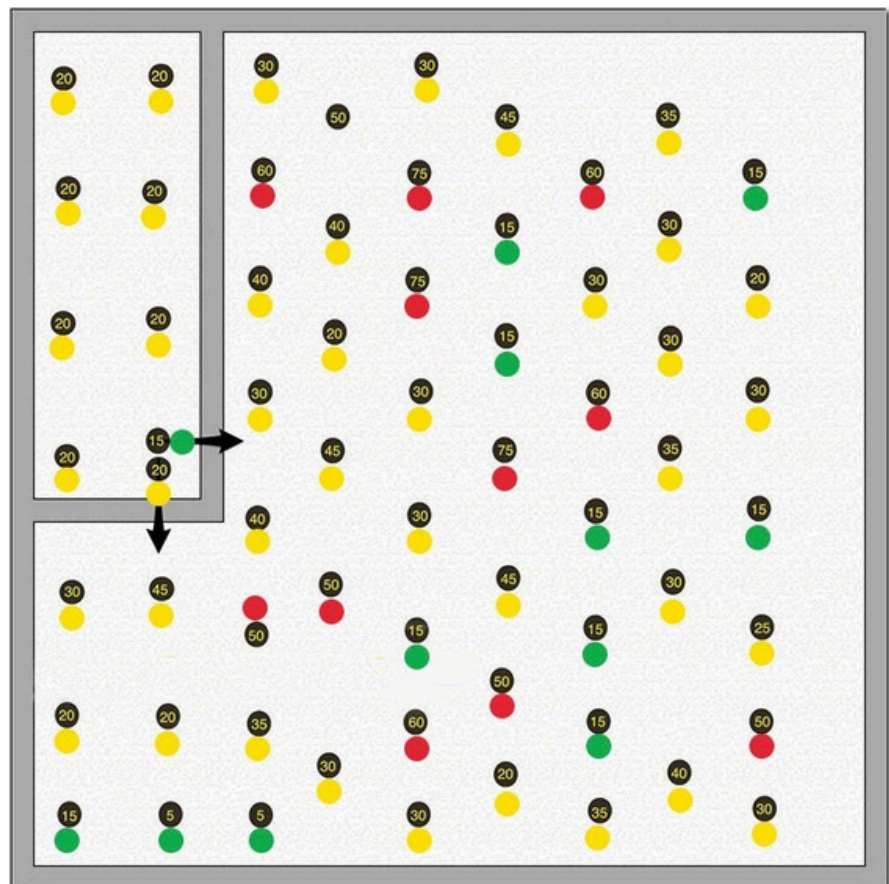
### Summary

1,800 lbs of HF 402 Fast were installed for the top layer. 2,119 lbs equivalent to 8 cubic yards of FillFoam™ were installed into the loose gravel. The next day, crews poured the slab over the top of the stabilized gravel.

### Part 1

Deep Foamjection™ point locations and pounds used per point. Depth of each point was 3 feet for injection.

- 50-75 lbs
- 20-50 lbs
- 5-15 lbs




To learn, more call 306-552-5438 or visit [ecofillfoam.ca](http://ecofillfoam.ca)

(cont'd from page 2)

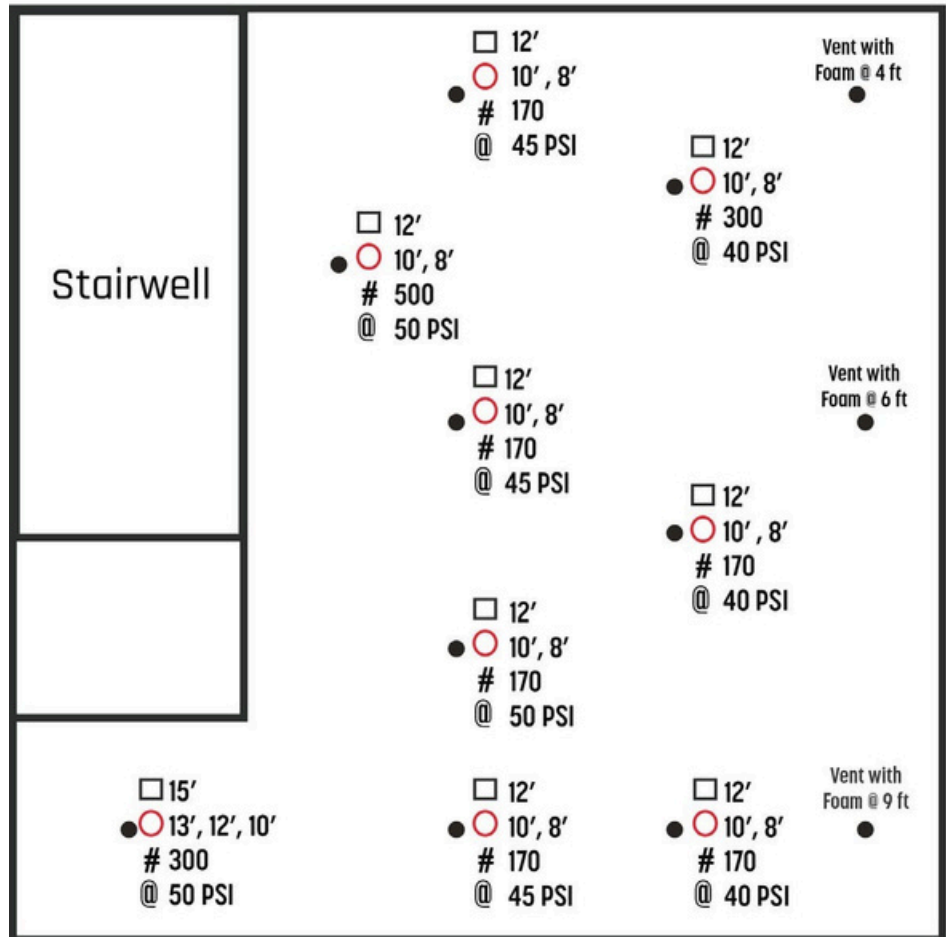
### Part 2

FillFoam™ installation location and pounds installed per point.



**Legend**

- Pipe length installed
- Ft Depths Installed
- #** Lbs. of Material Installed
- @** Density Installed



To learn, more call 306-552-5438 or visit [ecofillfoam.ca](http://ecofillfoam.ca)