
Ceramic Flooring Information

We receive many questions concerning our ceramic tile floor installation methods. One of the questions we answer the most concerns the underlayment. We follow the industry standards as set forth by the TCNA (Tile Council of North America). These standards have changed a bit since we started installing tile. The standards have changed in the past 3 years. This is why we are members of the TCNA. Staying current with these standards is the reason we have changed some of our installation methods over the past 10 years. The TCNA has expanded quite a bit in the last few years alone.

Most of the houses in our area have a 16" OC floor joist system so we will use this type of system to explain the differences in subfloor adjustments. It is important to remember a ceramic or natural stone floor is not only the most expensive floor we install but the longest lasting. This is the only permanent floor we install. The same Insurance companies that say carpet is a 3 to 6 year product call ceramic and stone a 75 year floor.

If we are installing a 12x12 tile or smaller the subfloor is different than if we are installing a stone product or large format tile. The reasons for this vary. Whether it be the PEI rating of the tile or the size itself the TCNA has made some minimum standards to protect the consumers' floor long after we have installed it. When installing a standard porcelain or ceramic the installer needs to ensure 2 simple rules with the substrate. Flat and Sound. If the installer does not install over a flat substrate the ceramic will crack eventually. Although there are many ways to correct slight unevenness in the floor, by adding plywood the task is accomplished with much more efficiency in most cases. The sound in the equation is interesting. I have always believed that any deflection in the existing substrate presents an issue. If we lay cement that continues to move it will break down over time. We at Installation Services do not correct structural issues. Not all floors are suitable for ceramic. There are times the person measuring the potential install can save everybody a lot of grief by identifying the environment and move the customer into a more appropriate product. Is an extra layer of plywood needed in every install? No, if there is already 23/32" exterior grade plywood down we will not need to add any more. Most houses today are being built with OSB which will not work for us. The OSB will soak the moisture out of the thinset used to install the backerboard which in turn causes it to set too quickly and turn to sand. If the floor is not started correctly, the chances of a successful installation will also be reduced to sand.

When we move to a large format tile the TCNA adds a layer of exterior grade plywood. This is done to solidify the project. The old standards used to give us a deflection ratio of L/360 for ceramic and L/720 for large format and natural stone. Measuring these standards on a potential installation is cumbersome at best. The TCNA guidelines make life a little simpler. The goal is to create a deflection free environment. In most cases adding a layer of 3/4" exterior grade plywood will be sufficient in ensuring the project will last the lifetime of the home.

The reason the deflection standards are stiffer for large format tile (any Tile large than 12" in any direction) is due to the increased chance of the tile cracking when it's moved. Tile by nature does not bend. Tile is kiln dried to become a hard surface. If you try to bend it, it will simply crack. This is why tile cannot be installed on an uneven surface. The larger the tile is the greater the chance of it cracking due to surface space. This is why smaller tiles get used in showers. An uneven surface requires smaller tiles. What we are considering though is deflection. I used to test for this by putting a glass of water on the counter and jumping. If the water bounced I had a deflection issue. When we transport tile we do everything possible to make sure it doesn't move around for this very same reason. We need to make sure the environment is as solid as it needs to be to ensure longevity of the project.

There are times building the floor up can cause other issues. By adding all of this subfloor we do have cognoscente of potential height issues. Whether it be a door jam, refrigerator, stove, or something in an adjacent room, we could end up with unexpected customer expectation issues if this is not explained properly. Not all homes should have ceramic or stone. This does not mean the house is falling over. It just means we need to find the appropriate product for the customer.