

Braden Roofing
“The One With the Great Reputation™”
8414 W 98th Street
Overland Park, KS 66212
Tel. 913-341-0200
Fax 913-341-0203
www.bradenroofing.com

BRADEN ROOFING NEWS™ X
GUIDE TO PLYWOOD, SHEATHING, AND DECKING

Presented by Braden Roofing, “The One With the Great Reputation™”.

Welcome to Braden Roofing News X. I have recently been asked a general question on plywood/decking.

“What brand of plywood do you use in your reroofs?”

If I understand the question, it almost sounds as if you are really asking if I prefer cdx or osb, and in what thickness. I will first answer your question as well as I can.

By “brand” you may be referring to the mill. The two main brands are Louisiana Pacific and Georgia Pacific. There are quite a few other mills, including Weyerhaeuser. At this moment, I really don’t have a preference between the two main mills, as they both have been pretty consistent products lately.

...And I emphasize lately. After New Orleans got splashed by hurricane Katrina, the quality of plywood really dropped for a while due to a rapid increase in demand (It is my understanding that a large amount of plywood also went to Iraq at about the same time). The cost of plywood skyrocketed and the quality plummeted. It was ridiculous.

Hopefully this problem is in the past. At this moment, both major producers seem to be making a pretty good product.

Your question may in fact be referring to the difference between CDX and OSB.

Both these products are referred to with the generic label “sheathing”, or “decking”. Both CDX and OSB are sometimes referred to as plywood, but this is not truly accurate in that only CDX is plywood. Plywood is sheathing but not all sheathing is plywood.

CDX VS. OSB

CDX is the original plywood with multiple layers of real wood sheathing cross-grain plied together (hence “plywood”). You can see the real wood grain and sometimes knotholes in the wood.

In photo#1, we can see a sheet of CDX, complete with the wood grain and knotholes.

In photo#2, we see a profile of the cross-grain plied wood of CDX plywood.

OSB stands for oriented strand board. It is also sometimes called “chipboard” (one rather colorful comedian once referred to OSB as the “head cheese” of the construction industry).

In photo#3, we see the surface of a sheet of OSB decking. We can clearly see the pieces of wood particles pressure glued together which make up OSB.

Photo#4 shows the OSB profile.

In the past, OSB has been rightfully criticized for basically acting like a big sponge when contacted by water. This really is not the case anymore. Nowadays the OSB seems to hold up a lot better to water damage. In fact, the CDX plywood will tend to warp a little bit more easily than the OSB when contacted by water.

Photo#5 illustrates the fact that OSB really does hold up to water exposure well nowadays. This photo was taken of some OSB on a flat roof. We had just removed the old roof. Part of the old roof had actually blown off, completely exposing the weathered area you see in the photo. The customer informed me that the bare wood had been exposed for at least a year. As you can see, the exposed part of the wood, while weathered, is still fairly intact. I doubt very much that exposed CDX would weather so graciously under the same circumstances.



Photo #1 With CDX plywood, we can see wood grain.



Photo #2 We can see the plied layers of CDX on the side profile.



Photo #3 OSB has a very different look than CDX plywood.



Photo #4 OSB profile.



Photo #5 OSB really does hold up to water exposure nowadays.

Hopefully this is all a moot point in that if we roofers do our job, there is not any long term contact with water. Short term contact is usually not a problem (i.e., brief exposure of wood in a rainstorm before it is installed).

Cost wise, the OSB is substantially more economical than the CDX. Currently OSB runs about \$7 per 4' x 8' sheet, and the CDX is at about \$13. That is a big difference over the course of a whole reroof.

The one big difference between the two is that CDX is stronger. In some certain applications such as when we install decking directly to the rafters, that is very important, but less so in others such as when we install decking to slat boards.

A TYPICAL APPLICATION

The most common roof sheathing application occurs when a wood roof is replaced with a composition (such as Timberline) product. Wood shingles (either shake or #1 wood shingles) typically are installed on top of spaced slat boards. In other words, there is a big gap of 2 to 3 inches between every slat board. When the roof is removed, it looks like a big skeleton. Well, we can't put composition shingles on a skeleton, so that means we install new sheathing on every darn square inch of the roof.

We almost always simply put the new decking directly on top of the slat boards. We do not remove the slat boards because there is no real reason to do so. In fact, by leaving the slat boards in place, we actually give the roof more monolithic structural strength.

Let's take a quick look at some photos.

In photo#6, you can easily see that we have moved one slat board in order to accommodate the top edge of our plywood application.

In photo#7, you can see that the top edge of the plywood is supported by the now moved slat board. This is a very well performed application.

MONOLITHIC STRUCTURAL STRENGTH

Monolithic structural strength basically means that the weight of something has been spread out over a greater area. An example of this might be if I were to take a pen point and poke it into my own skin. I certainly can feel the pressure and if I push hard enough, it is going to hurt. However, if I put a book in between the pen point and my skin, I can pretty much push as hard as I can and it still is not going to hurt. That's because the pressure has been spread out. That's monolithic structural strength.

In this particular application, I am OK with OSB. It certainly meets code and it is what 99% of the roofing companies use in this application. CDX is OK, too, but it will be more expensive. Most customers rightfully ask, "why pay more if the OSB does the job?"

Some roofers will say that they actually prefer the OSB because they say that the CDX will warp a lot more easily. There is just a bit of truth in this, but warping plywood might more likely be symptomatic of a poor installation.

At Braden Roofing, we do two things to make sure that our installation is the best that it can be—whether we use CDX or OSB.

APPLICATION OF DECKING

First of all, we use plenty of fasteners. We typically use a pneumatically applied staple with a wide crown (7/16") and 2" depth. Most importantly, we use lots and lots of staples. We use 75 to 100 staples on every sheet of decking. That's a lot.

Secondly, in applications atop slat boards, we make sure that the top and bottom end joints on each sheet of decking are backed by a slat board. In other words, if the top and bottom edges of decking just happen to fall in the gap between slat boards, we will pop the closest slat board loose, move it under the edge of the decking. The end result is that there is wood secured to wood secured to wood right down to the rafters. This means that the plywood will not be able to lift and move with temperature changes.



Photo #6 The eighth slat board has been moved and marked with blue chalk.



Photo #7 Because the eighth board has been moved, so the top edge of the plywood sheet has a slat beneath.

As a very loose rule of thumb, we feel that quality of application is more important than the actual product which is being applied.

In applications where we install decking directly on rafters, we insist on using CDX plywood. We use a minimum of ½" thickness. When rafters are further apart (wider than 16"), we may well consider thicker plywood. We do not feel that OSB is structurally adequate in this particular application. I have seen many houses constructed with OSB sheathing installed directly atop the rafters where, after a few years, you can see the outline of the rafters right through the entire roof. Yikes.

In applications where we install decking directly on rafters, it is also a good idea to use plywood clips. Plywood clips are typically not needed when sheathing is installed atop slats. It should also be noted that when we use plywood which is thicker than ½", we are more apt to use nails as a fastener rather than staples. This is an exception to our general practice.

Some people prefer a nailed application because nails have more structural strength. While this is most certainly true, decking is not a structural support. Staples have more shear strength, which is what secures sheathing to structural members. At Braden Roofing, we prefer to use staples in sheathing applications. We have found that staples resist the forces of wind uplift and temperature shift better than nails.

We can also use ringshank nails, if the customer requests. It is my opinion that even ringshank nails simply do not have the holding power of a large number of staples. The US plywood association specifications claim that sheathing may be properly installed with ringshank nails. It is true that a conscientious application of nails will suffice, but long experience in the field has taught me that a large number of staples will secure plywood better than nails. Again, when we install plywood thicker than ½", we consider using nails rather than staples.

Again, the quality of the application is more important than what is being applied.

CONCLUSION

OSB and CDX are both good products in many applications. At Braden Roofing, we feel that the quality of the application is usually more important than the actual product being applied.

We hope this BRN is helpful to you. As always, please call or email if you have any questions.

...And remember, if you need a great roofer, let there be no hesitation. Call The One With the Great Reputation!™