

Q&A

Q. Recycled Form Boards?

Can concrete form boards be reused for framing, or does exposure to concrete weaken framing lumber?

A. *Bill Palmer, president of Complete Construction Consultants in Lyons, Colo., responds:* It's best not to use forming lumber and plywood for anything but forming. Even though the IRC doesn't prohibit it, reusing form boards for other purposes — except perhaps in noncritical locations, such as for blocking — isn't a good idea. Many of the reactions that degrade lumber naturally occur more quickly when it's exposed to concrete. Adding to the problem, many of today's concrete mixes have a very high pH and alkalinity that will burn off the surface layer of any wood they are poured against.

Simply cleaning the lumber isn't a reliable solution,

either, because you may not remove enough of these corrosive chemicals to prevent long-term deterioration — and the act of stripping the wood form may cause damage that isn't apparent until the wood is put under load. For example, if 2x12s used to form a slab are later used in load situations that require 100 percent strength (such as in window or door headers), a 25 percent strength reduction caused by chemicals in the concrete or by stripping damage could result in a very costly repair — or life-threatening failure. Don't forget that forming lumber is expected to last 30 to 90 days, while structural lumber is expected to last 30 to 90 years.

Another potential problem is the form release agent that was used on the form boards. Many releases contain volatile chemicals that may have a noticeable odor or even increase the flammability of the lumber.

Q. Soundproofing Drainpipes

Is there a way to dampen the sound of a PVC waste pipe, other than tearing out the plastic and installing cast iron?

A. *Bonnie Schnitta, owner of SoundSense, an acoustic consulting firm and maker of sound-control products in East Hampton, N.Y., responds:* Water running through a plastic pipe is more than twice as loud as water running through cast iron. That is mostly because PVC has less mass than cast iron and therefore a lower STC (sound-transmission class, a rating of a material's ability to resist airborne sound transfer). Replacing the pipe with denser cast iron would result in about a 10- to 15-decibel (dB) sound reduction, but you can get the same results by increasing the plastic pipe assembly's STC. Adding insulation around the pipe would help a little, but pipe insulation typically absorbs only 2 to 3 dB of noise, a barely perceptible change. And even if there were room for extra insulation, it takes 4 inches of fiberglass insulation to absorb just 3 to 5 dB of noise.

To achieve a 15-dB transmission loss in the plastic pipe — comparable to the results you'd get if you replaced it with cast iron — you'll need to wrap it with a material that has a minimum STC of 29 (or, if there is already insulation in the cavity, an STC of 26). My company wraps plumbing and hvac ducts in a 1¹/₈-inch-thick loaded vinyl barrier with a scrim-faced fiberglass quilt; it has an STC of 29.

If the pipes are already insulated, we use 1/8-inch-thick loaded vinyl with an STC of 27. We make sure there's an overlap of at least one inch (4 inches is preferred) when wrapping and use zip ties to hold the acoustic barrier in place. To help contain noise, we caulk the overlaps with a flexible sealant called Big Stretch (800/289-7290, sashcosealants.com)

Like water, airborne sound can leak out of tiny openings: Holes as small as one inch in diameter can reduce the effectiveness of soundproofing by roughly 5 to 10 dB. So, in addition to caulking the vinyl barrier, we also seal any openings where the drainpipe passes through the framing. The best way to do this is by wrapping the pipe in advance with the vinyl barrier before passing it through the framing, since this helps create a perfect seal and prevent structural coupling. But when this isn't possible, we cut a flange on site from a piece of the vinyl barrier, making a collar that fits around the pipe and covers the opening. Another option is to fill the gap between the pipe and the framing with a flexible acoustic caulk.

To minimize structure-borne noise, we try to avoid rigid connections between drainpipes and the framing. For example, we use neoprene pads where metal hangers that support piping and ductwork are fastened to joists or studs. For more on sound-control techniques, see "Innovations in Sound Control," 3/06.