

CONTRACTOR

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Aluminum panels offer solution for wood frames

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UNTIL LUMBER prices become prohibitive, wood frame construction will remain the standard for residential and light commercial buildings. Since wood is a renewable source of building material, chances are that nothing will change in our lifetime; that's a pretty easy assumption to make.

Hydronic floor heating is here to stay as well. Its popularity will continue to grow and will eventually become the standard of the industry for residential buildings in the not-too-distant future.

How can these two be combined effectively, efficiently and, most importantly logistically? We can't adapt wood-frame construction to floor heating, so we must adapt floor heating to wood frame buildings.

Wet systems - pouring cement-like material over wood-frame floors to integrate the tubing into the structure - goes against all logistics and common rules of building a wooden floor structure. It goes against the grain of architects, builders and building owners for a multitude of reasons.

That is why the industry has seen a surge in dry system installations. Already 60% of all residential systems installed today are dry systems. One dry method is a simple tubing staple-up method, a method which I do not recommend, as heat transfer is minimized and in general these systems do not deliver the advantages of floor heating. Methods using aluminum heat transfer plates offer a better solution for wood frame homes.

Retrofitting an existing finish floor

Installation of tubing, aluminum plates and plywood sleepers on top of the subfloor offers superb performance, low water temperatures and high fuel efficiencies.

With heat transfer plates from below the subfloor increases BTU output and system efficiency. The same heat transfer plate method from below is also commonly used in new construction because finish floor construction is unaltered and the builder is not exposed to any construction changes or unpleasant installation logistics that cause hidden costs or moisture headaches.

Material costs for heat transfer plates from below are low, but the installation can be cumbersome and labor costs are relatively high. Performance and BTU-output can be potential problems with this method, especially where wall-to-wall carpeting is installed or in high heat-loss areas. Water temperatures must run higher, affecting system efficiencies negatively. Nailing hard wood flooring after system installation is not possible or very risky.

The only other dry aluminum method is the installation of tubing, aluminum plates and plywood sleepers on top of the subfloor. This method assures superb performance, fast response, low water temperatures, and subsequently high fuel efficiencies. Material and installation cost is the same or lower than concrete pour installations. In addition, the headaches associated with wet systems are eliminated.

These are some of the advantages:

There is no framing adaptations to accommo-

date 1 1/2-in. pours;

No moisture problems which are a nuisance in wood frame construction;

No weight problems; and You can spot heat individual rooms without prohibitive floor frame lowering.

Installation is so simple that you can spot heat rooms as an afterthought, even after structural framing is completed. There are no logistics prob-

lems, because each room can be installed as its own system without varying construction schedules or interfering with other trades. Because it can be installed after the structure is enclosed, installation ambient temperature is not an issue.

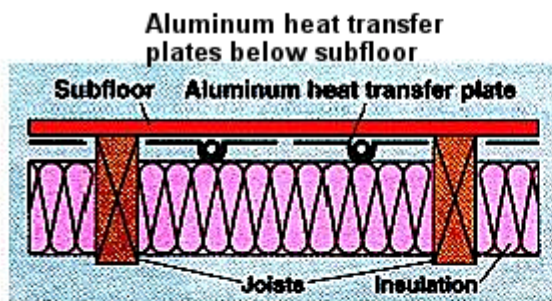
This is a good alternative for most finish floor remodeling projects. Finish floors can be applied immediately. It's a perfect solution for existing basement concrete floors be-

There are no Btuh-output problems even in high heat-loss and wall-to-wall carpeting areas. You can get a more even surface temperature throughout the low water-temperature ranges. This isn't possible with a wet system. This is especially important during 80% of the heating season when heating loads are low, room temperatures reach set point quickly but floor surface temperatures are still spotty. This is a common complaint from homeowners once they start to en-

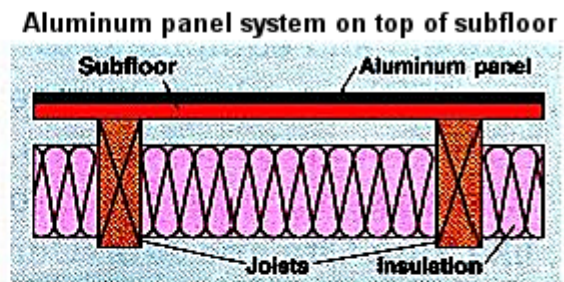
Why give away 50% of the system cost to a gypsum pourer, who walks away from the job when the pour is finished? Then you're stuck with the responsibility for system performance, call backs and problems that may have resulted from the gypsum pour.

The heating contractor can install the entire system and be assured that when he walks away from the job the system will perform as intended.

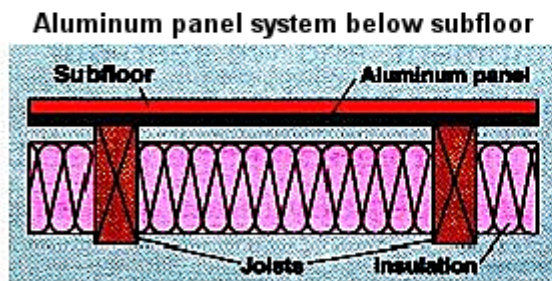
Four common dry radiant installation methods



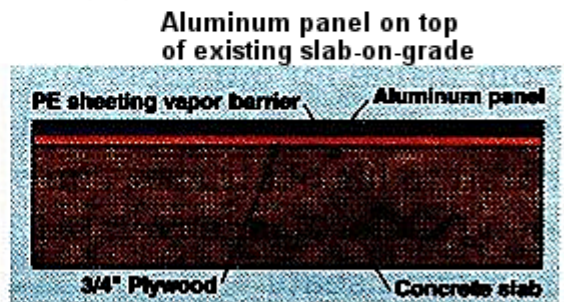
Heat transfer plate used mainly on open basement ceilings for existing finish floors, also on some new constructions. Cost-effective with low material cost, cumbersome to install, high labor cost. Btuh output performance is satisfactory.



Aluminum panel system on top of subfloor can be used for either new constructions or remodeling projects. Material cost is high but it is easy to install with low labor cost. Btuh output performance is excellent.



Aluminum panel system below subfloor is an alternative to the heat transfer plate method. High material cost, easy to install with labor cost 50% that of heat transfer plates. Btuh output performance is 20% better than heat transfer plates.



Panel system on top of slabs is an alternative to slab-on-slab pours. Good for basement retrofits. Cost effective in material and labor. Btuh output performance is excellent.

cause there's no added concrete mess. Hardwood flooring can be applied immediately, having eliminated the moisture concern.

Conventional hardwood flooring can be nailed down easily, since tubing is fully exposed (60% of all finish floors are nailed strip flooring), eliminating 2-in.-by-x-4-in. sleepers and additional 3/4"-in. underlayment over concrete filler material. There's no floor buildup.

joy and expect an evenly warmed floor during all op during all operating conditions.

Dry systems, whether installed below or above the subfloor, are a natural and make only common sense considering the type of construction we are dealing. They also make economical sense from the heating contractor's point of view.

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