Ask Jon Eakes

Proper installation of new whole house ventilation systems

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Joan from Armstrong, BC is having trouble adjusting the ventilation system in her new home to keep condensation off the windows. She told us the kind of system she has and said that it was required by the building code. Actually no specific system is required by any of the building codes. The code in every province but Ontario simply requires that there be mechanical ventilation capable of changing all the air in the house every three hours. It's a bit more complicated than that, but that is the essence of it. Ontario on the other hand has copped out of requiring good ventilation in new homes, and we have many sick families to show for it.Few contractors, especially in BC, have used mechanical whole house ventilation systems in the past -- most try to satisfy the code with the least expensive system possible, and few know how whole house systems should be installed or operated. Contractors across the country are struggling with the new ventilation codes, complaining that they can't find the fans able to do the job. That is simply not true. They can't find cheap fans to do the job. If you want an energy efficient house that you can afford to heat, then you must ventilate it to maintain indoor air quality and health. That is a given. How much that costs you is a question of how much you are willing to invest in good ventilation equipment.The best of the ventilation systems are the Heat Recovery Ventilators that are required in the R-2000 energy efficient houses. But short of investing in one of these low volume, continuously operating and well distributed systems, you need to make sure the system you have is doing its job. Joan has set the timer to turn her system on for two hours in the morning and two hours in the evening. What she really needs to do is to determine how powerful the fan is, that is, how many cubic feet of air per minute (cfm) it exhausts outdoors, calculate how many cubic feet of air there are in her house, and move all of that every three hours. If she doesn't want to run the fan continuously, then she will need a more powerful fan to run occasionally. But just twice a day is rarely adequate.Now the problem with fans running continuously or frequently in a cold climate is that you throw a lot of heat outside. That is why in the energy efficient homes we put in a device that recuperates the heat from the outgoing air to warm up the incoming air -- heat recuperation. Her particular model has no heat recuperation so proper ventilation is going to mean higher heating costs.Check out the database for "HRV" and "Ventilation".Â

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