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## Limitations

If someone said they could hold their breath for 10 minutes would you believe it? If there was a 10 foot gap in the road and you need to cross it and somebody said go ahead and jump across, it should be fine, would you do it? Of course not, because you obviously know the limitations of the human body.

If, like me, you knew the limitations of duct systems, when someone asks you to do something that can't be done you would say no. Instead, too many contractors say let's give it a try or maybe it will work or if that's the way you want it I'll do it. Unfortunately, you have to live with the uncomfortable result forever. A fan can only push so much air through an opening. There are pressure calculations associated with all sizes of ducts and there are limitations that HVAC designers study and observe. We refuse to violate the laws of air movement not because we will be convicted and spend time in jail but because the system will not work correctly. There is not much margin for error. That's why we don't ballpark estimate or use rules of thumb. We design systems using specialized software. And when we do that they work correctly for their entire lifetime, which by the way is much

longer than equipment that is misapplied and poorly installed. It's your money so why would you try to convince someone to do something that they're telling you will not work? It's funny but it happens to me far too often.

If you had to pull off the highway and drive in reverse back the exit to get home do you think there would be a traffic jam? If the road was narrower than your car do you think traffic would move slowly? You know it would be a nightmare because you know how to drive a car. But a 6 inch diameter flexible duct 40 feet long doesn't look like a problem to you because you don't understand duct systems. That is a trainwreck to me.

What blows my mind is the number of brand new homes I go into in with comfort problems only to see duct systems that are grossly inadequate and obviously designed by someone who has no clue about the limitations of an undersized duct system. To date there is no building code inspection for this aspect but I pray that one comes soon for the sake of homeowners spending nearly a half million dollars on a new home and getting and getting garbage.

Ken Field is the owner of Slate Belt Energy and Field's Service, Inc. As a certified energy rater and contractor, he is qualified to assess every aspect of energy usage and prescribe solutions to save energy. He can be reached at 610-759-6306 or email Ken@FieldsService.com