Sheet Steel Facts 50

April 2020

Is Rain on a Steel Roof Louder than on an Asphalt Roof?

A question that homeowners often ask about steel roofing is “Will a steel roof be noisy when it rains?”. We’ve created this fact sheet to help answer that question. Residential steel roofing is available in many shapes and forms. The forming process provides not only strength, but when coupled with high quality build finishes, absorbs and deadens much of the noise. With the home insulation standards of today, you should not notice any difference in noise levels between roofing materials.

A Noisy Reputation

The roofs that gave steel a reputation for being noisy were the ones installed generations ago with nothing between the steel panels and the buildings below except wood purlins and thin air which left nothing to deaden the sound.

But that is not how residential re-roofs are done today. Today, most houses (especially ones that currently have shingles) use a plywood or OSB roof deck over top of the rafters or trusses. But is that enough to quiet the noise?

Common Noise Levels

Noise levels are measured in decibels (dB) with 10-15 dB being the quietest sound that most people can detect. Safety standards say that exposure to noise over 85 dB can impair an individual’s hearing over time. **It is also worth noting that most humans cannot distinguish between sounds that are 5-8 dB apart.**

We wanted to know for sure so we partnered with the National Research Council of Canada (NRC) to test the noise level of an asphalt roof as well as two popular steel roofing profiles installed in 2 different assemblies.

The 5 assemblies we tested were:

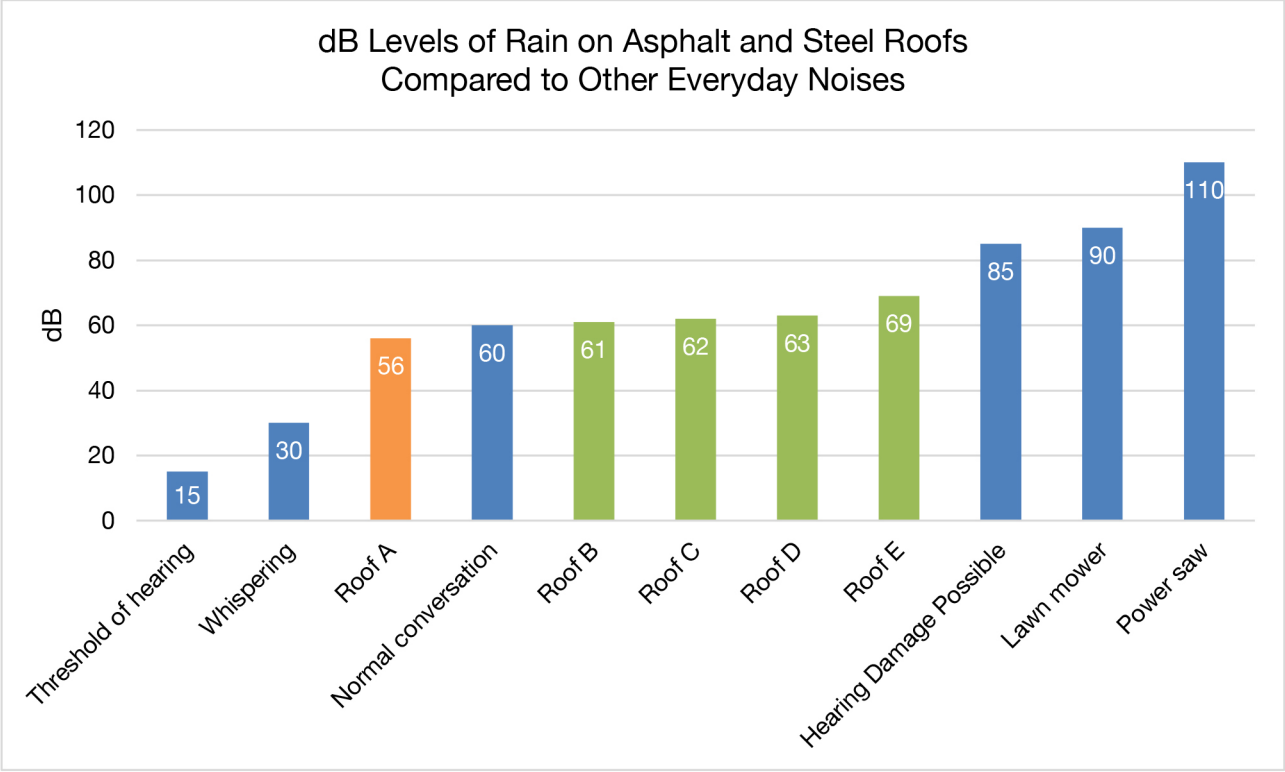
	Assembly Materials and Set-up
Roof A	Asphalt shingles on OSB sheeting
Roof B	Steel-tile panels screwed directly on asphalt shingles
Roof C	Vertical rib steel panels screwed directly on OSB sheeting
Roof D	Vertical rib steel panels screwed directly on asphalt shingles
Roof E	Steel-tile panels screwed directly on OSB sheeting

652 Bishop St. N., Unit 2A, Cambridge, Ontario N3H 4V6 • Tel.: (519) 650-1285 • Fax: (519) 650-8081 • www.cssbi.ca

Example of steel-tile roofing profile.

Example of vertical rib steel roofing profile.

The results of our research are in the graph below and are compared to some common everyday noises.



Quick Tips for a Quiet Roof

As you can see from the graph, an asphalt roof is technically quieter than the 2 steel profiles we tested but only marginally and **again we note that most humans cannot distinguish between sounds that are 5-8 dB apart.** Installing a steel roof over a solid deck with a good underlayment, and with an insulated attic airspace below, makes it easy to control the noise.

For more information on residential steel roofing, contact the CSSBI at the address shown below or visit the website at steelroofingcanada.ca.