



## American Fiber Cushion Products and Noise Reduction Coefficient

As businesses position themselves for continued product offerings and the normal evolving of the commercial construction, retail consumer, and distributor networks we find it extremely important to understand what our customers want. We do this in the same way that has been done for years, we simply listen to our customers needs. When the commercial, residential and hospitality industries asked, “how well does your products block noise floor to floor?” we took it upon ourselves to have our products tested to see how well they reduce noise. This comes in an age when everyone is researching products online to ensure they are getting the best specification package for their money. It is also extremely easy to write any specification you want inside of a blog, a white paper, and on a website. We at American Fiber Cushion have sent our products for testing to the NGC Testing Services Center In Buffalo, NY. This way you are not taking our word for it, but rather a national leader in acoustical analysis.

In this report we will share how well our carpet cushion products performs as well as the industry standard in hospitality and commercial carpet installations. The Carpet and Rug Institute in Dalton, GA released a technical bulletin titled Acoustical Characteristics of Carpet. In this technical bulletin, dated 05/08 they outlined the Noise Reduction Coefficient (NRC) of various carpet weights and the use of synthetic and natural rubber carpet cushions of the period. Without testing all of these carpet weights again, and since we are a affiliate member or the Carpet and Rug Institute, we decided to just use the NRC numbers of that study performed a few years ago. We will include a footnote for their findings as indicated (\*\*).

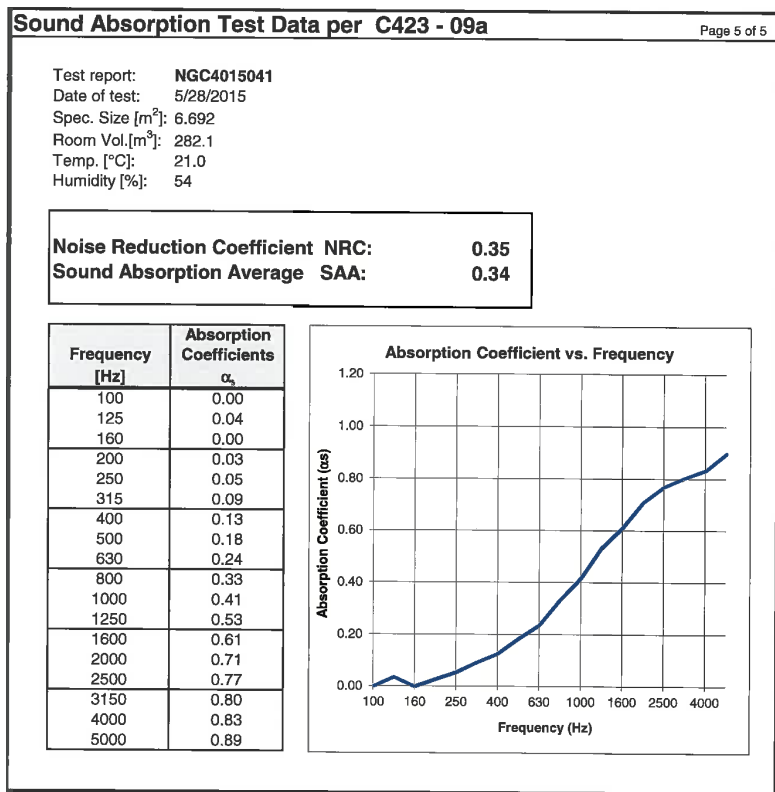
Firstly, lets discuss what the definition of the Noise Reduction Coefficient is. It is a scalar representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; a NRC of 1 indicates perfect absorption. So, the higher the number is until it gets to 1 the better the sound absorption qualities. NGC Testing Services employed the ASTM C 423-09a/E795-05 testing procedure on all of our samples listed in this report. This is the large sample reverberation room method, this just means they used a 6' x 9' sample size. The larger the sample size the more room for statistical anomalies, but also the best representation of how the product will actually perform in a large room.

Next we will discuss the job, hotel rooms, commercial meeting places, healthcare centers, and multi level housing. In all of these applications it would be wonderful if there could be zero noise bleed between rooms, and between levels. Lets face it we have all been stuck in the motel room when the room above or below started blaring the TV after one too many cocktails, or worse (insert your favorite horror story here). Or, you have the upstairs neighbor that likes to pace and dribble a tennis ball while they are thinking...walking around in circles at 2:00 am. The industries goal has been to continually evolve products to cut as much noise as possible between the rooms and floors. That brings us to testing our

products to see how they stack up and help absorb these noises between the stories, floors or otherwise.

We will first look at our GreenPad Ultra product. We launched this product a few years ago as the Versailles line. While the name was a hit in the French Quarter and in regions of Canada, we decided to rebrand it as The GreenPad Ultra line. This pad is comprised of 28 ounces up to 32 ounces of 100% recycled fiber laminated with an EVA foam for extra cushion underfoot, and a moisture barrier. GreenPad Ultra is produced to be a single or double glue down product and is making great strides in the marketplace. We are proud that it meets the CRI label acceptance criteria for no VOC emissions.

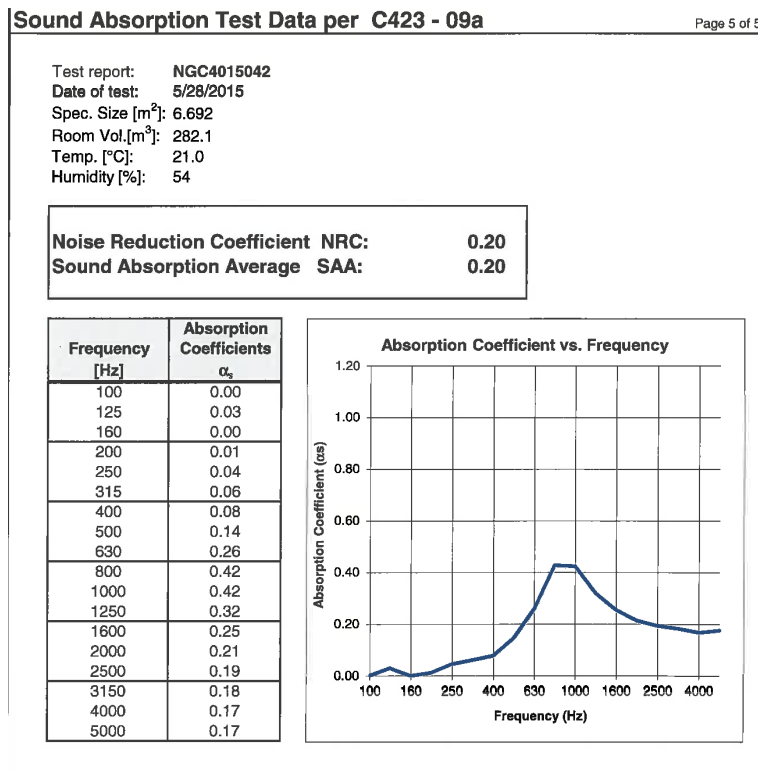
While gluing down the foam cap of GreenPad Ultra to the subfloor we can expect to see a NRC value 0.35 and a Sound Absorption Average of 0.34. If we add a 32 ounce face weight cut tufted nylon carpet with a .56 pile height on top of that, we can expect to see another 0.50 NRC\*\* reduction which brings us to a total of 0.84. Remembering that a value of 1 means total sound absorption, this will make an excellent product choice to spec into hotels, commercial office buildings, and multi level housing. Below is the test results graph from the actual test report.



As you can see by the graph GreenPad Ultra is especially good at attenuating the higher frequency spectrum which covers the piercing human voice speaking consonants, babies crying, and higher registers of music, as well as operatic singing in the shower.

We also tested our Fortitude 28 ounce weight carpet cushion as well for NRC and it shares the same graph and total NRC numbers as well. As both products consisting of the same fiber weight and mechanical manufacturing process this makes sense. Fortitude is a great product, but if you want the value added of more cushion underfoot and moisture barrier for possible laminate or hard surface installations you will want to go with the GreenPad Ultra product line.

Finally, we will look at the competition. The industry standard for years has been the 60 ounce per square yard waffle latex pad. While gluing down the pointbond cap of rubber pad to the subfloor we can expect to see a NRC value 0.20 and a Sound Absorption Average of 0.20. If we add a 32 ounce face weight cut tufted nylon carpet with a .56 pile height on top of that we can expect to see another 0.50 NRC\*\* reduction which brings us to a total of 0.70 NRC value and below is the graph from the test report.



Looking at the decimals as a percentage the latex absorbs 70% of the sound while the GreenPad Ultra product line absorbs 84% of the sound. The latex also does not absorb the higher frequencies as our GreenPad Ultra, if you will compare the two graphs. The latex starts falling off and not absorbing frequencies over 1000 Hertz. We are extremely happy with our product research and development, and we always are welcoming to making better products for our architects, builders and planners to spec into their buildings. We can only be proud of these test results and our products designed and manufactured in the United States of America.