Subject: Research regarding Fiberglass insulation and harmonic absorption?
Posted by Pinky on Wed, 23 Aug 2006 02:19:18 GMT
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Does anyone know of any research which shows the varying kinds of sound insulations including Fiberglass on the absorption or lowered transmission of harmonics and harmonic distortion, and especially broken down into even ordered(2, 4,6,8,etc) and odd ordered(3, 5, 7, 9, etc)?Pinky

Subject: Re: Research regarding Fiberglass insulation and harmonic absorption?
Posted by Bill Fitzmaurice on Wed, 23 Aug 2006 21:55:51 GMT
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Fiberglas and other damping materials have no way of knowing whether the waves they damp are fundamentals or harmonics or, if they are harmonics, which.

Subject: Re: Research regarding Fiberglass insulation and harmonic absorption?
Posted by Pinky on Wed, 23 Aug 2006 22:38:01 GMT
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Why? Fiberglass and other materials are permeable to different frequencies at different rates, so their damping characteristics tend to vary by frequency.In electricity, odd ordered harmonics tend to produce more heat than even ordered harmonics. And Fiberglass absorbes more heat than fiberfill.Is this your opinion, or is there measurement data to suggest this to be true?Pinky

Subject: magnitude of THD: frequency dependent?
Posted by Pinky on Wed, 23 Aug 2006 22:52:55 GMT
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I recently read some research that suggested that the magnitdue of distortion was greater at the lower frequencies than at the higher ones. If this is the case, and distortion is frequency dependent, then fiberglas and other materials which are frequency dependent in regard to their damping characteristics, will be distortion absorbing at different levels dependent on frequencies of sound presented.

Subject: Re: magnitude of THD: frequency dependent?
Posted by Bill Fitzmaurice on Thu, 24 Aug 2006 00:05:50 GMT
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They don't absorb distortion, they absorb sound waves. They are unable to tell which sound waves are distortion and which are not, so rather than drive themselves crazy trying to tell the one from the other they just absorb all of them. The process is frequency dependant, they do better with high frequencies than low frequencies.

Subject: Thanks for your help
Posted by Pinky on Thu, 24 Aug 2006 01:21:15 GMT
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Yes, I understand about the absorption of sound waves which include a distortion component.Thanks for your help.Pinky