



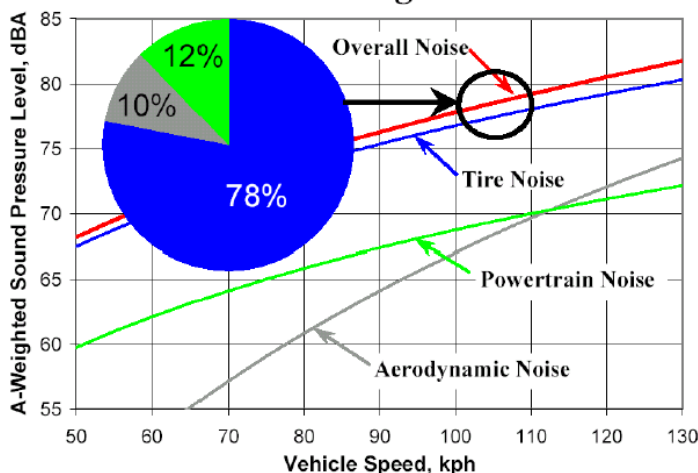
Asphalt Rubber Italia

ASPHALT-RUBBER NOISE REDUCTION

Take a Drive on the Quiet Side!

Complaints of excessive noise are becoming the most predominant in communities near major roadways. In response to noise complaints, environmental design engineers spend millions of dollars to build expensive and unsightly walls to block the noise out instead of turning it down

Typical Highway Noise Source Breakdown for Light Vehicles



Pavement Pilot Program and have created noise profiles of roads using a close proximity noise measuring device. Time after time, asphalt-rubber roads are the quietest. Measurements show that the residents in the Phoenix, AZ area have benefited the most where the existing concrete pavements were the loudest (105 dBA) and then became the quietest (92 dBA) ever measured following a thin asphalt-rubber overlay. **The tire/pavement noise dropped 13 dBA!** It's like turning down the volume on a noisy stereo instead of shutting a door.

"It's a Quality of Life Issue." Victor Mendez, Director, Arizona Department of Transportation, 2003 (When asked to describe to use of A-R to reduce noise.)

ADOT Noise Intensity Pavement Profile
Transportation Research Board January, 2005

Effect of speed on vehicle noise (Donovan, 2003)

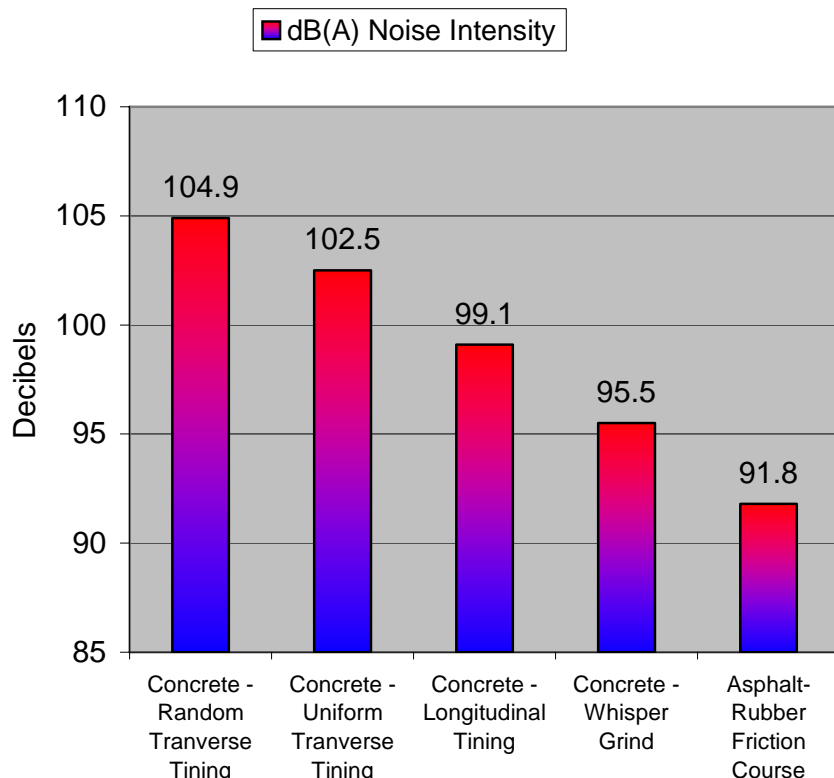
at the source, the pavement surface. Studies show that rolling tire noise accounts for over 75% of the noise generated from highways with vehicle speeds of 60 mph. **But it's not the tires, it's the pavement!**

Asphalt-rubber surfaces can reduce the noise at the source better than any other material while maintaining excellent durability and long-term performance. Properly constructed, these surfaces can be virtually maintenance free for ten years or more.

Some noise facts:

Reducing the noise by three decibels is like cutting the traffic in half or like doubling the distance from the source of noise. Two feet of wall is equal to 1 dBA.

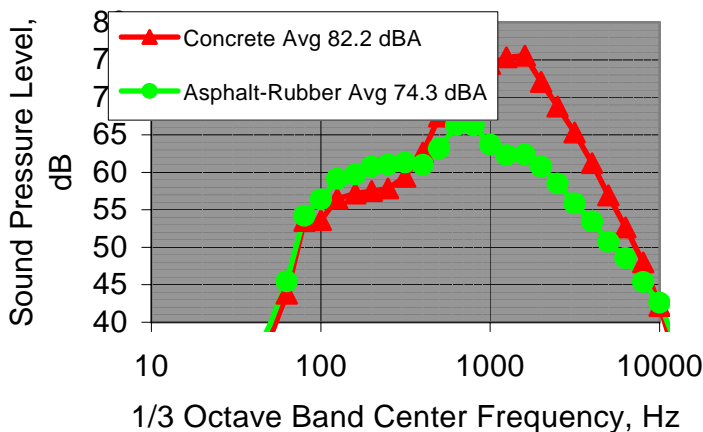
Communities in Arizona and California hear the difference. The AZ and CA Departments of Transportation are participating in the Federal Highway Administration's Quiet



But the dB level is only half the story.

Noise meters provide environmental engineers with decibel readings. A decibel level is itself an average of sound pressures over a range of frequencies. Asphalt-rubber pavements soften the pitch of noise frequencies that are the most irritating to the ear. It's like a road carpet. The chart below compares the decibels and frequencies of a tined concrete pavement before and after an asphalt-rubber overlay measured from a point 50 feet from the roadway.

Arizona Loop 101 Noise at 50 ft Before and After A-R Overlay



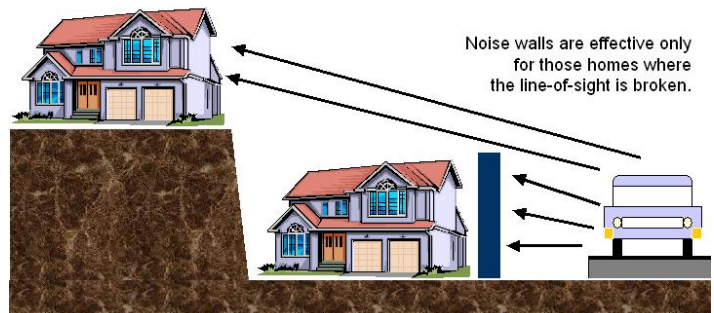
No tining, no whining!

That annoying tire whine is at about the 1200 Hz frequency. On the chart above, notice how that annoying frequency is reduced by almost 13 dB even at fifty feet from noise source, while the overall dB level is reduced by 8 dB. Remember, one dB in reduction is worth two feet in wall height. This asphalt-rubber surface is like having a 16 foot wall without the loss of a scenic view. **Walls don't stop the noise at the source, they block it.**

The citizens of Arizona liked this noise reduction so much that they demanded that their city councils give money to the DOT to pave **ALL** of the freeways in Phoenix with rubber, resulting in a **115 mile, \$34 million project.**

A-R is not just used in Highway to reduce tire noise. Cities and counties have benefited as

Noise Walls Do Not Reduce Noise at the Source



well. A-R has help reduce noise in the City of Phoenix, City of Sacramento, County of Sacramento, Pima County and elsewhere.

Remember, noise walls cost about \$20.00 per square foot, only work in line of sight, and need two feet in height to reduce road noise by 1 dB. With an eight dBA reduction experience in the Arizona DOT system, that is like a 16 foot reduction in noise walls. In a one mile stretch of road that is equivalent to a savings of \$1,689,600.

Do the math:

$$\$20.00/\text{sqft} \times 16 \text{ feet high} \times 5280 \text{ long}$$

Go from this
(tall wall graphic)

To This
(short wall graphic)

And This
(pile of money)

Say goodbye to the tire whine and drive in a quieter and cleaner environment. Why don't you start a quiet pavement project in your community? Make some noise to make it quiet.

For more information visit:
www.rubberpavements.org