

Sound Absorption Material – Q & A

Q. What specifically happened that led to the decision to eliminate the sound absorption material?

A. As the sound wall contractor was forming the concrete panels, adding the sound absorption material, then moving to install, they were having a difficult time with the durability. If one of the panels was bumped by something sharp a large chunk of the sound absorption material would fall off. The plan has always been to install the sound walls and then have the contractor work between them, which will lessen the impact to the community. When they realized that trucks, the small ballast rock, rail tamping etc would be done directly adjacent to the walls that were disintegrating, they notified the technical folks to examine the problem. It was further determined at that time that light rail operations and regular maintenance would cause the walls to deteriorate as well, even power washing (which would be used to remove graffiti) was causing the material to fall off. Following on site testing, discussion of alternatives and the overall value of this product, and contacting our noise consultant to have him verify that all noise levels would still be mitigated to the required level, the determination was made to eliminate the material on the sound walls.

Q. What is the sound absorption material and where is it?

A. The sound absorption material is cellular concrete (concrete foamed with additives to produce around 30% air voids. Special light weight aggregates such as vermiculite are also used) in order to help with the reflection of sound as it hits the wall. It is applied to the side of the soundwalls that will face the tracks.

Q. What is the impact of deleting the sound absorption material from the soundwalls?

A. The sound walls are there to lower the noise level from the train. The sound absorption material was an additional measure that RTD took to lessen the reflection of noise. There will be less than a one decibel difference without the sound absorption material. All requirements for noise mitigation will still be met by the soundwalls without this additional material.

Q. How will this be communicated to the specific homes along the corridor?

A. On July 22, an e-mail went to all property owners on the alignment who have sound walls adjacent to their property as well as the neighborhood presidents of Eiber and Two Creeks.

Q Do the sound walls that have been installed so far along the project contain the sound absorption material?

A. The sound walls between Oak and Miller – both sides of the tracks have the sound absorption material at this point. There is no current plan to replace them, but maintenance is already an issue.

Q. Have all the sound walls that contain the sound absorption material been installed, or are there still some of the walls in storage that contain that material?

A. All walls with sound absorption material have been installed (between Oak and Miller). There are no additional sound walls in storage that have the material on them. All future panels are being formed and installed without the material.

Q. Is there another material that can be added as a replacement?

A. Our evaluation of sound absorption materials showed that SoundSorb (the material we were using) performed the best as far as absorbing sound. RTD would have been one of the first transit agencies in the country to use this product and were assured during design by the manufacturer how well it would work for the West Corridor project. At this time, using another sound absorption product would provide even less decrease in sound as well as add cost and schedule delays. The value isn't there. Therefore it was determined it was best to eliminate the sound absorption material and proceed without it.

Q. Will the sound wall panels that have been installed with the sound absorption material be replaced?

A. The sound wall panels that have been installed with the sound absorption (Oak to Miller Streets) are currently being repaired in place. We will continue to evaluate the existing sound walls that have the sound absorption material (Oak to Miller) before making a final determination on our next course of action for these two specific walls (Oak to Miller, north side and south side). The remainder of all the sound walls will be installed as precast concrete panels without the additional sound absorption material on the inside. This won't change the height, length, or appearance of the sound walls.

Q. How did this happen, why weren't the materials tested before they were installed?

A. The precast concrete sound wall panels are structurally sound and are having no issues. All the concrete on the project is strength tested and this is true of the sound walls. The issue is the sound absorption material that is added to the side of the panel that faces the trackway. The sound absorption material is cellular concrete (concrete foamed with additives to produce around 30% air voids. Special light weight aggregates such as vermiculite are also used) in order to help with the reflection of sound as it hits the wall.

This is a new product and we are one of the first transit agencies in the country to use it and the design team was assured by the manufacturer how well it would work on our project. There weren't any issues with it until a number of panels had been made and the installation began. As the panels were fitted between the posts, chunks of the sound absorption material (not the actual concrete of the sound wall) began to fall off with any kind of contact.

Q. The issue of durability brings to mind, the concern for safety. If the sound panels are literally falling apart from relatively low impact, what are the dangers to pedestrians, passengers, cars or anything else within the immediate area, should these panels fail?

A. There is no danger to the public or to public property. The only place that the walls with the sound absorption material have been installed is between Oak and Miller. The other locations that soundwall panels are being installed do not have the sound absorption material on them. The sound absorption is falling off when hit by a rock or similar item and it falls to the inside of the track way area, not to the outside.

Q. Why can't this be the very last thing done to the line after construction and before the trains starts running?

A. In many locations the sound walls also act as retaining walls and must be in place in order to level the track area in preparation for ballast, ties & rail. It is counterproductive and an unnecessary expense to bring in a crew to build some of the sound walls, then demobilize for a while, then remobilize to bring them back later to finish. Even if it were possible to build the sound walls at the end of the project, the durability of this material would still be an issue for ongoing maintenance of the trackway. In addition, installing the sound walls at this point will help with noise reduction from construction for the adjacent community.

Q. Will this interfere with our sidewalks and bike path?

A. There's no reason that this would have any effect on the sidewalks or bike paths. The sound absorption material is on the inside of the sound walls, only between Oak and Miller. Any sound absorption material that is falling off is doing so inside the light rail guideway.