

# PRECAST CONCRETE NOISE BARRIERS

## A SOLUTION FOR NOISE POLLUTION

Got road noise? Turn up the radio! Of course, that's great if you're driving – and you might not even hear the full effect of road noise inside your sound-insulated car. But if you live along a busy roadway or highway, your options are limited.

Road noise has become a real irritant for communities living along the nation's highways, which have seen the number of miles driven on them double in the last 25 years – with a similar rise in noise pollution.

Precast concrete noise barriers can be designed to blend in with a city's architecture and local topography, or even to capture a community's theme or identity. Reflective noise barriers can reduce the perceived noise by as much as half, while absorptive treatments have been found to further reduce noise pollution. And with color additives or stains and textured form liners, the options are nearly endless.

### WHY PRECAST CONCRETE?

- Superior strength and durability
- Quality control
- Noise reflection and absorption properties
- Availability and ease of installation
- Environmentally friendly
- Aesthetically pleasing



QUALITY | VALUE | PERMANENCE

# PRECAST CONCRETE NOISE BARRIERS

Precast concrete sound barriers have several advantages over other materials:

## **SUPERIOR STRENGTH AND DURABILITY**

The strength of precast concrete gradually increases over time and does not deteriorate when exposed to harsh environments as some other materials do. Other materials can deteriorate, experience creep and stress relaxation, lose strength and/or deflect over time and may not be able to withstand vehicular impacts. With precast concrete, no protective coatings are required and maintenance is virtually eliminated.

## **QUALITY CONTROL**

Because precast concrete products are manufactured in a controlled environment, they exhibit high quality and uniformity. Factors affecting the quality of cast-in-place concrete noise barriers typically found on a job site – temperature, improper curing, craftsmanship, material quality, form joints and ties – are nearly eliminated in a plant environment.

## **NOISE REFLECTION AND ABSORPTION PROPERTIES**

Reflective precast concrete barriers reduce the sound level by blocking the straight-line path of noise from the source. The perceived noise does not disappear, but it is significantly reduced due to the increased distance the noise must travel. Using modeling software, engineers can determine the optimum height and length of precast concrete noise barriers to effectively minimize noise levels. Noise can typically be reduced by 5 to 10 decibels, which is often perceived as reducing the loudness by as much as half. Absorptive surface treatments are also available which have been found to improve the noise reduction capabilities of the system.



## **AVAILABILITY AND EASE OF INSTALLATION**

Because precast concrete noise barriers are manufactured well in advance of installation, they are ready for transportation to the job site at a moment's notice. Precast concrete systems are easily installed with a small crew and overhead crane, minimizing disruption to traffic.

## **ENVIRONMENTALLY FRIENDLY**

Precast concrete is nontoxic, environmentally safe and made from all-natural materials. Absorptive treatments actually use recycled materials such as shredded tires or wood byproducts from the lumber industry to achieve a porous, sound-absorptive finish.

## **AESTHETICALLY PLEASING**

Common finishes available for precast concrete include colored smooth-as-cast, textured form liner, exposed aggregate, acid etch, brick and sandblast. Each is distinctively different and provides architects and owners a broad choice in appearance to help match the surrounding environment. Such aesthetic treatments are important to surrounding communities.

Precast concrete is the material of choice for highway noise barriers. The sections can be manufactured in a broad range of sizes and styles; are durable during transportation, installation and use; can easily be installed by a small crew; are structurally sound; are environmentally safe; and are less vulnerable to damage from weather and corrosion than other materials. Whether casting a dolphin reef for a coastal highway or the tranquil geometric patterns prominent in southwestern art, precast concrete noise barrier systems are the obvious choice.

For more information on precast concrete sound barriers, please contact:



**NPCA**

Precast ... The Concrete Solution