

RPG DIFFUSOR SYSTEMS, INC.

RPG encourages the use of Acoustic Consultants that can provide a full scope of services including Room Acoustics, Sound Isolation, Noise Control, A/V System Design & Specifications, etc. To find an Acoustic Consultant in your area or one that specializes in a particular type of project, contact the National Council of Acoustic Consultants (www.ncac.com).

GYMNASIUM



Nicely finished Gym using RPG Topakustik sound absorbing wood on the walls & underside of the roof.

The acoustic goals for a standard Gymnasium used primarily for sporting events (and not other music and drama events typically done in an auditorium) are control of excessive reverberance, loudness and harshness. This can be primarily achieved using sound absorbing materials on the upper walls and overhead surfaces. However, these materials also need to be durable, maintainable and often more economical than finish materials used elsewhere in the building. The subjective goal is to make speech intelligible (especially when amplified over the sound system) and to keep music (for pep rallies, cheerleading practice, halftime performances, *etc.*) from being overbearing and deafening.



Economical Gym using RPG DiffusorBlox on the upper walls and an Acoustic Metal Roof Deck.

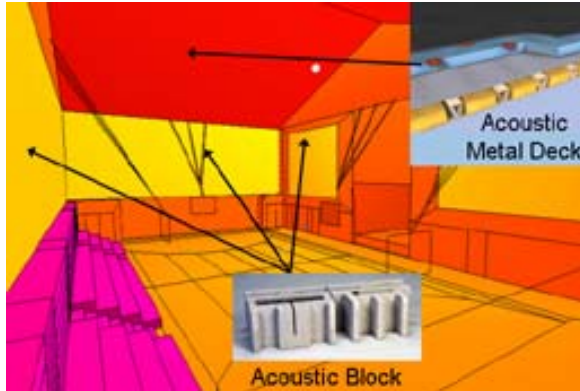
Diffusor systems to enhance the acoustics of critical listening and performing environments

RPG DIFFUSOR SYSTEMS, INC. • 651-C Commerce Drive, Upper Marlboro, MD 20774 • Phone 301-249-0044 Fax 301-249-3912



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Gymnasium Acoustic Treatment

Roof Options

- Acoustic Metal Deck (100%)
- Spray-On (75%+)
- Wrapped Fiberglass (75%+)

Walls Options

- RPG DiffusorBlox or RPG BAD Panels (50% of wall area above 8'-0")

Roof

The most economical method for achieving sound absorption overhead is to use perforated *Acoustic Metal Deck* that has fiberglass inserts in the flutes of the deck. Other options include application of fibrous *Spray-On* materials to the underside of the deck or hanging or suspending acoustic *Banners/Baffles* (i.e., fibrous materials wrapped in fabric, vinyl or nylon) from the roof structural steel. Typically, the acoustic metal deck and Spray-On covers the entire Gym while the application of fibrous materials (direct or suspended) requires treatment of about 75% of the total roof area.

Walls

Typically, the wall absorption is kept high in the room (above 8'-0") where it is most effective acoustically and out of harms way. Wall treatment in combination with overhead treatment is essential. Using overhead treatment alone will result in unsatisfactory acoustic results. Wall treatment extent should equal approximately 50% of the total wall area above 8'-0" (not total wall area above the floor). The economical, durable and acoustically effective option for wall treatment is RPG *DiffusorBlox* (CMU). In a Gym application, the DiffusorBlox should have the optional low frequency slots and should not be painted. Integral pigmentation is possible and available if desired aesthetically. If acoustic CMU is not possible (for example in an existing Gym), an alternate option is 4" thick RPG *BAD Panels*.

Caution

Flat acoustic CMU that only has narrow slots and no surface irregularities does not control or absorb mid and high pitched sound. The slot creates a Helmholtz resonator that only absorbs a narrow band of low pitch sound. RPG's DiffusorBlox has two tuned Helmholtz resonators and increased, porous surface area to provide high, broadband absorption.

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