

Insulated Panel Systems
North America



Acoustic Solutions

Insulated Wall and Roof Panel Systems Guide



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QuadCore[®]
TECHNOLOGY



Designing for Acoustic Performance with IMPs

Insulated metal panel (IMP) systems can be configured to support enhanced Sound Transmission Class (STC) performance through layered assemblies, liner panels, and supplemental insulation strategies. As a continuous insulated building envelope, IMP systems can be further enhanced with multi-component assemblies to significantly improve airborne sound attenuation between spaces.

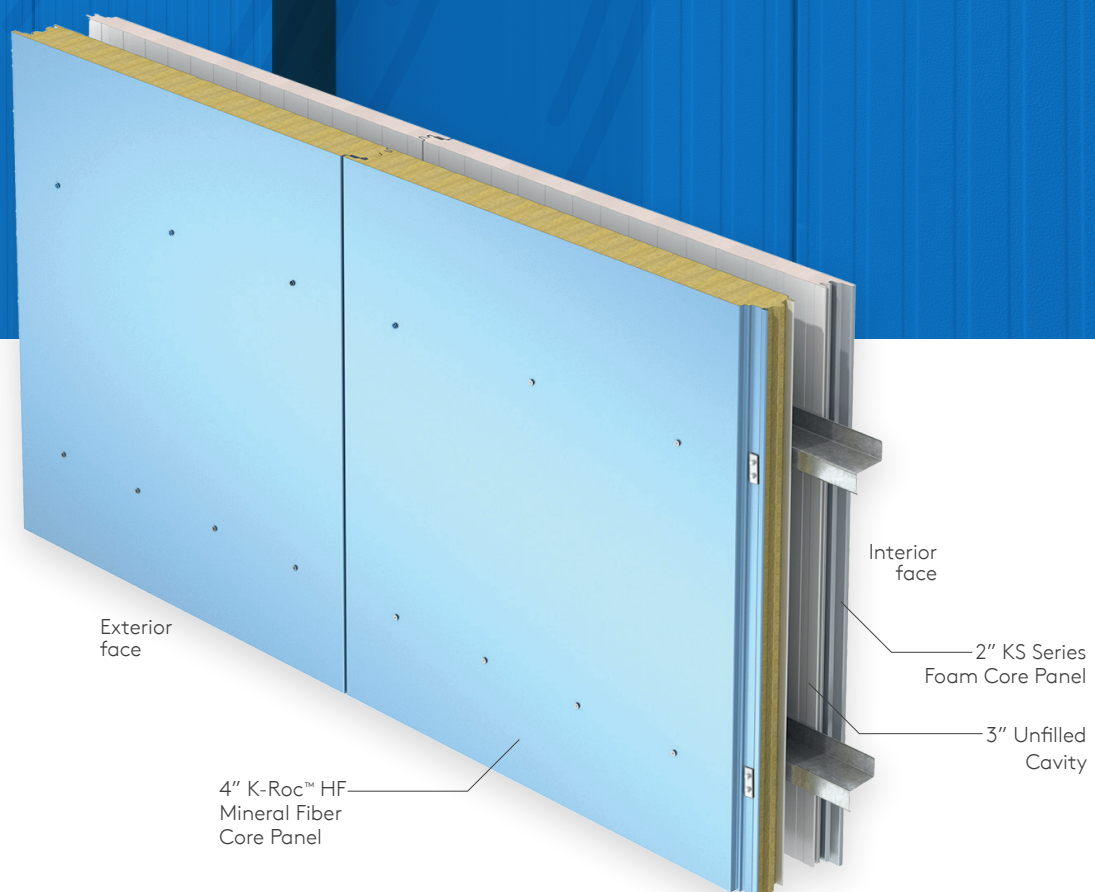
Acoustic IMP assemblies are particularly valuable in data center environments, where continuous equipment operation generates sustained noise that must be controlled at the building envelope to protect surrounding occupied areas. Effective wall systems help minimize sound transmission to adjacent offices, neighboring tenants, and nearby properties.

These assemblies are well suited for manufacturing facilities, cold storage and food processing plants, distribution centers, and mixed-use or commercial buildings. In these environments, IMP-based wall systems help reduce equipment noise transfer, isolate operational areas, and improve overall acoustic separation between adjacent spaces.

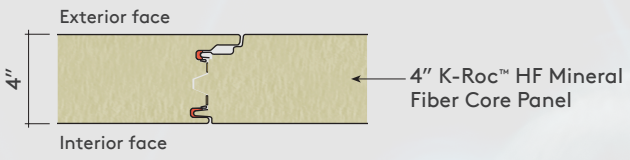
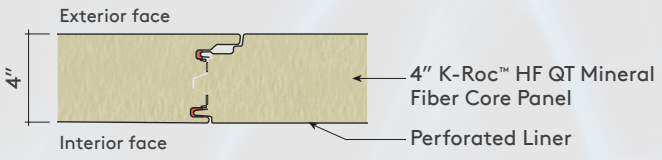
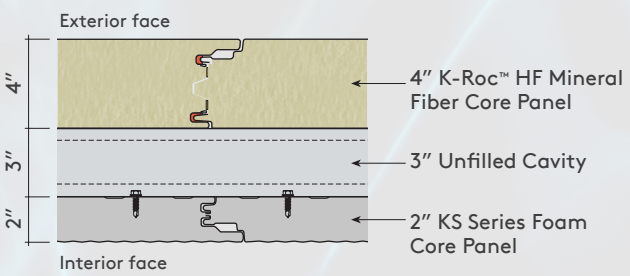
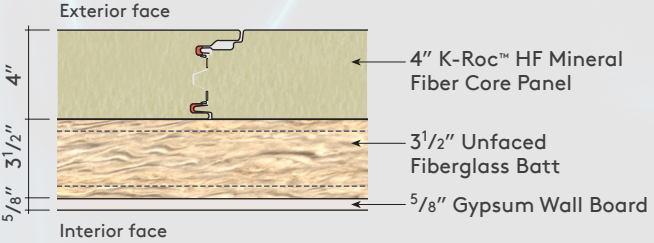
When designed appropriately, IMP acoustic assemblies can be tested in accordance with ASTM E90 and rated per ASTM E413, allowing designers to compare performance against traditional wall systems. In addition, mineral fiber core IMPs provide the combined benefit of thermal insulation and inherent fire performance, enabling high-performance acoustic wall systems that address multiple building requirements within a single integrated assembly.



**STC 45
Composite Wall
Assembly**



Wall Assembly Options and STC Ratings

Assembly Description	STC Rating	Assembly Illustration
K-Roc™ HF Insulated Panel Standard 4" thick mineral fiber core insulated metal panel with minimum 26/26ga steel.	STC 28	 Exterior face 4" Interior face 4" K-Roc™ HF Mineral Fiber Core Panel
K-Roc™ HF QT Insulated Panel Enhanced 4" thick mineral fiber core panel with increased acoustic performance. Panel includes minimum 26/26ga steel facers with a perforated facer directed to the sound source.	STC 35	 Exterior face 4" Interior face 4" K-Roc™ HF QT Mineral Fiber Core Panel Perforated Liner
Composite Wall Assembly 4" thick K-Roc™ HF panel + 3" air cavity created using 3" deep 18ga zee-girts + 2" KS foam core panel with minimum 26/26ga facers.	STC 45	 Exterior face 4" 3" 2" Interior face 4" K-Roc™ HF Mineral Fiber Core Panel 3" Unfilled Cavity 2" KS Series Foam Core Panel
Enhanced Composite Wall Assembly 4" thick K-Roc™ HF panel + 3" air cavity with 3-1/2" R-13 unfaced fiberglass batt in cavity + 5/8" type X gypsum wall board.	STC 55	 Exterior face 4" 3 1/2" 5/8" Interior face 4" K-Roc™ HF Mineral Fiber Core Panel 3 1/2" Unfaced Fiberglass Batt 5/8" Gypsum Wall Board

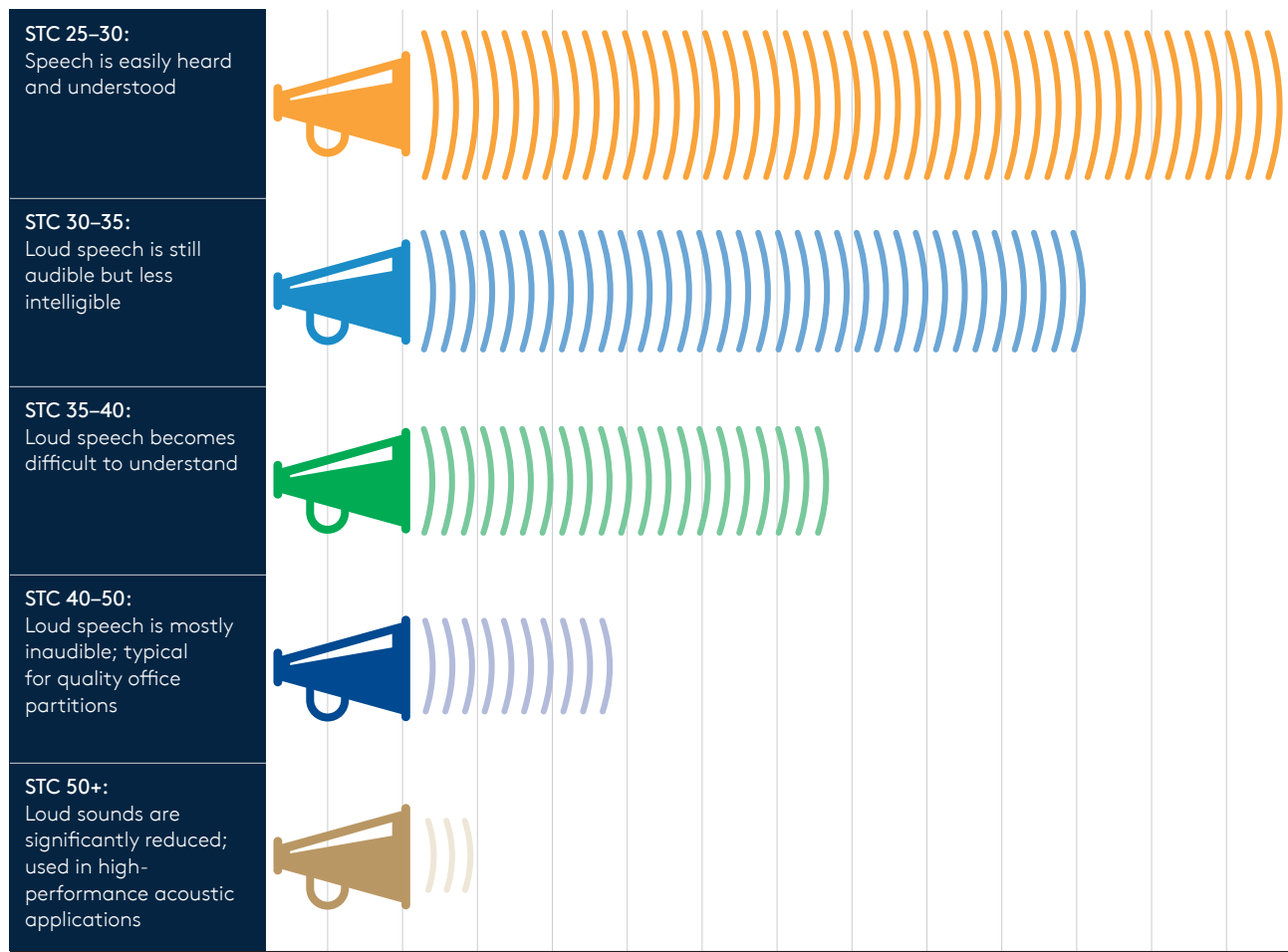
Notes on Assembly Performance

The addition of a secondary panel layer with a rigid foam core further dampens transmission through increased mass and multi-layered impedance.

- Assemblies with air gaps and dissimilar materials improve performance through sound decoupling and increased mass.
- Fiberglass batts within the air cavity help absorb mid and high-frequency sounds, boosting the overall STC.

Dew point analysis available upon request. Please contact Technical Services for assistance.

Interpreting STC Ratings



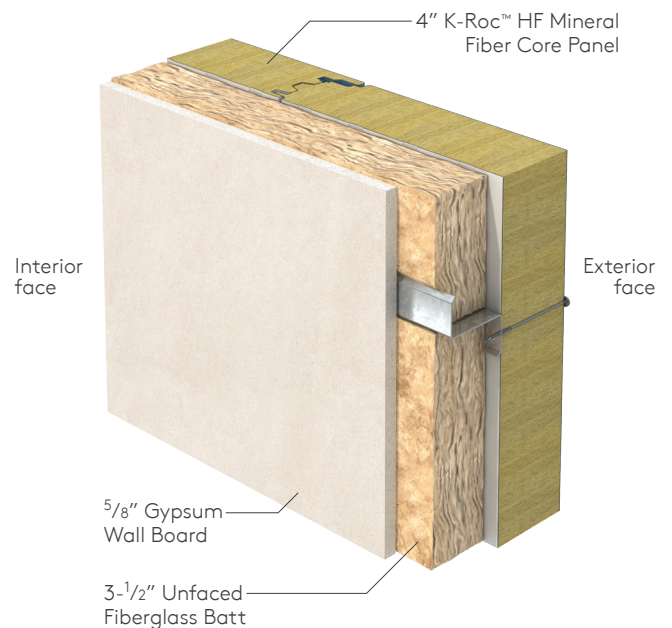
Selecting the appropriate IMP Wall Assembly

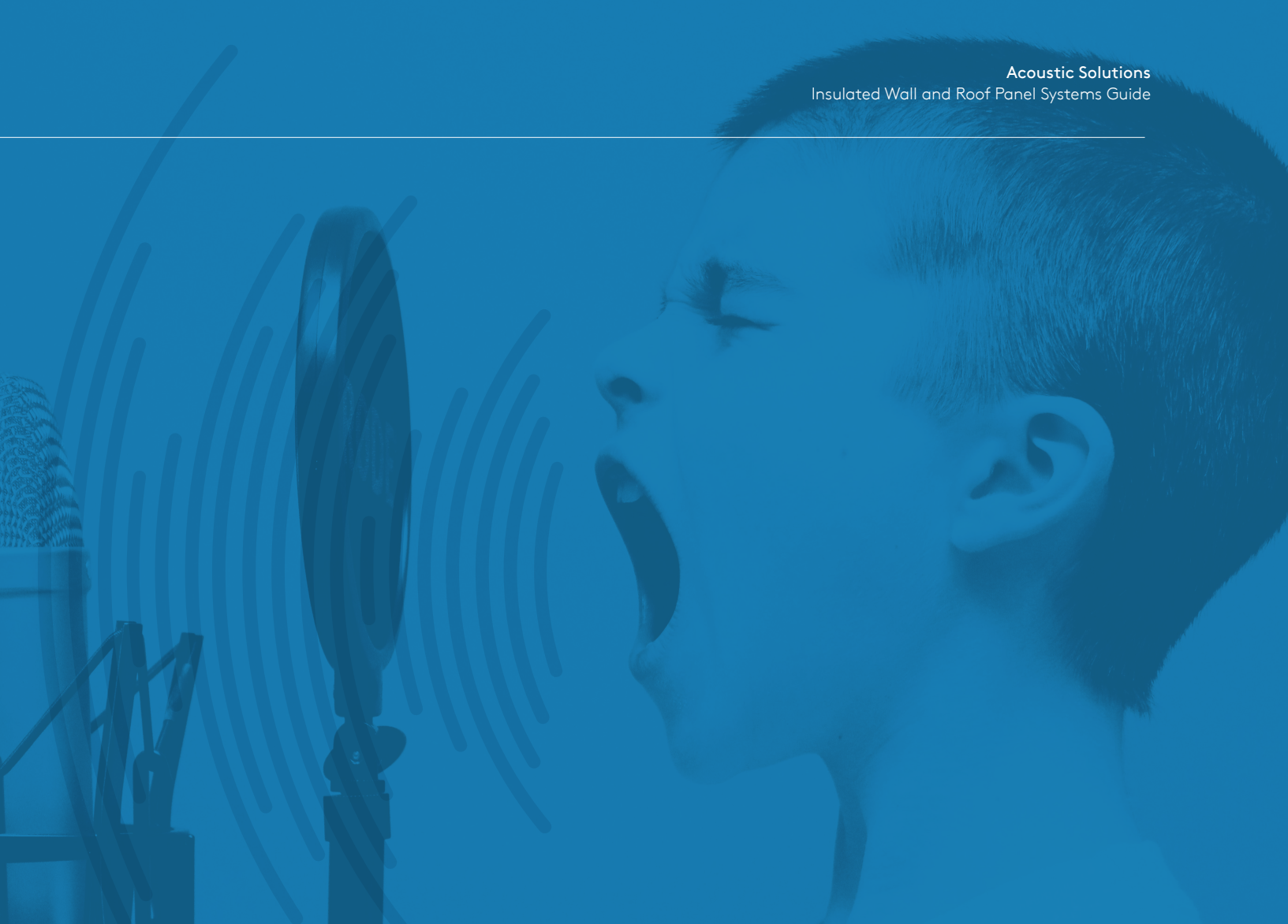
Selecting the appropriate IMP wall assembly depends on project-specific acoustic requirements. For applications where higher sound attenuation is necessary, layered configurations incorporating mineral fiber cores, perforated liner panels, and air space can provide substantial improvements in STC performance compared to single-panel systems.

These solutions are well suited for environments such as data centers, manufacturing facilities, and controlled environments where managing equipment noise and isolating operational areas is critical. By tailoring panel type and assembly configuration, IMP systems can be optimized to meet both acoustic and thermal performance goals.

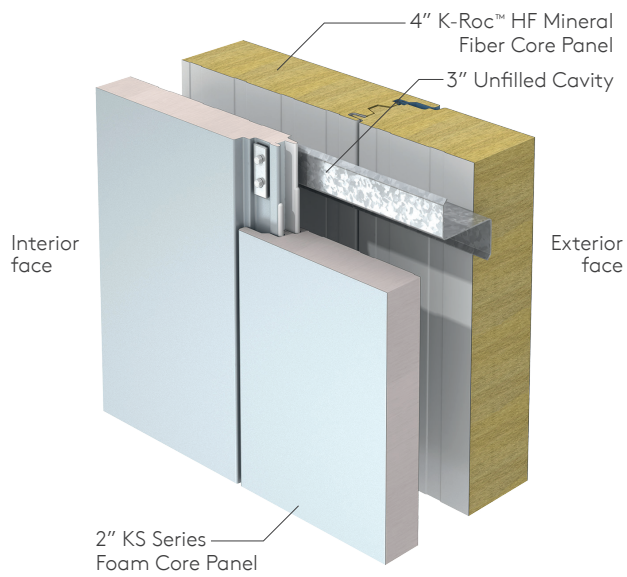
For further information on acoustically rated IMP systems or to discuss project-specific requirements, please contact our technical services team.

STC 55 Enhanced Composite Wall Assembly

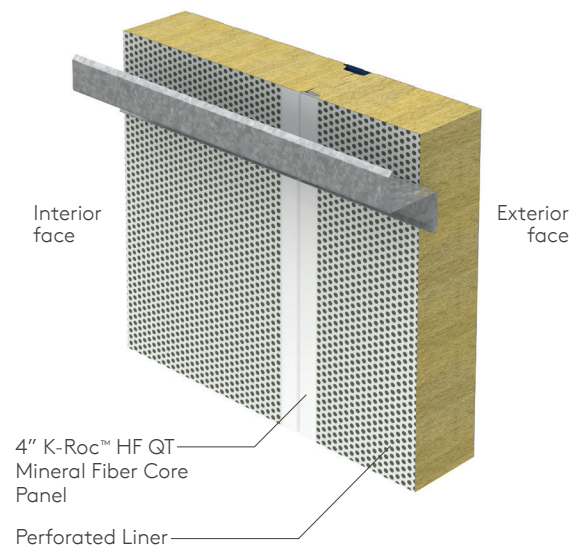




**STC 45
Composite Wall Assembly**



**STC 35
K-Roc™ HF QT**



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