

CINEMA SOUND ISOLATION

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NEW ISSUES FACING DEVELOPERS

- NOISIER SITES NEXT TO RAILWAY TRACKS, FREEWAYS, AND AIRPORTS
- INCLUSION IN MIXED-USE RESIDENTIAL AND RETAIL BUILDINGS

CINEMA AS A NOISE RECEIVER

- ON-SITE NOISE (AND VIBRATION) MEASUREMENTS
- RAILWAY
 - AIRBORNE NOISE, GROUND VIBRATION
 - ISOLATE CINEMAS WITH RUBBER BEARINGS
- ROADS
 - WALLS AND DOORS TYPICALLY DOMINATE
- AIRPORTS
 - CEILING, WALLS, AND DOORS DOMINATE

CINEMA AS A SOUND SOURCE FOR RESIDENCES

- DO NOT LOCATE DIRECTLY ADJACENT TO RESIDENCES
- ACOUSTICAL OBJECTIVE TO PREVENT SLEEP INTERFERENCE

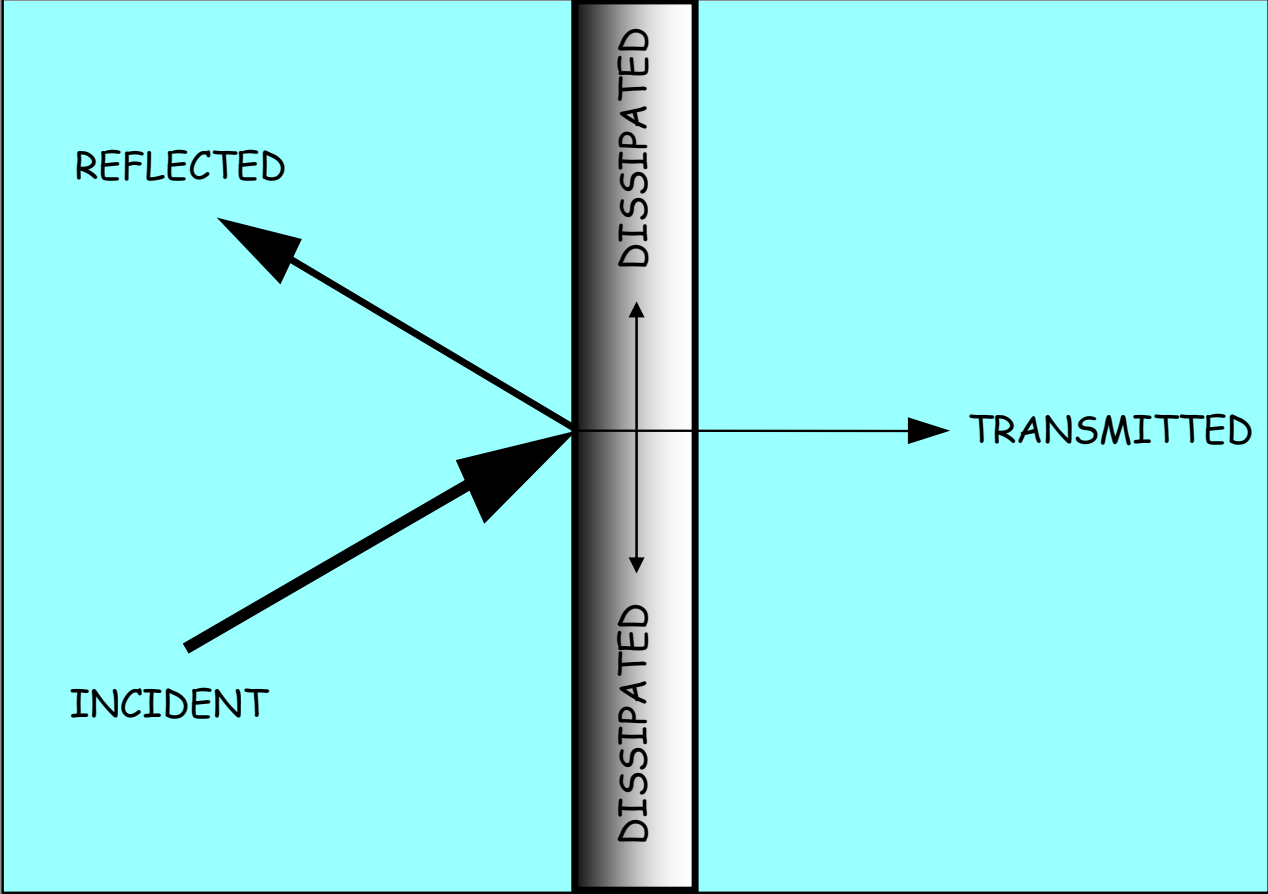
THE ROLE OF SOUND ISOLATION IN THE CINEMA PRESENTATION

- SUSPENSION OF DISBELIEF
-HOLDING THE PATRON IN THE
FILM STORY
- MAINTAINS THE POTENTIAL FOR THE
NOW EXCELLENT DYNAMIC RANGE OF
CINEMA AUDIO SYSTEMS
-BOTH TOP AND BOTTOM OF RANGE
- CRUCIAL TO THE SUCCESSFUL
IMPLEMENTATION OF MULTI-CINEMA

INTRUSIVE SOUND SOURCES IMPACTING CINEMAS

- EXTERIOR/EXTERNAL NOISE
 - TRAFFIC, AIRCRAFT, ETC.
 - ADJACENT TENANTS
- PATRONS IN ENTRY LOBBIES,
FOYER SOUND SYSTEMS, ELEVATORS,
AND ADJACENT CONCESSION AREAS
- SOUND SYSTEMS IN
ADJACENT CINEMAS

SOUND TRANSMISSION

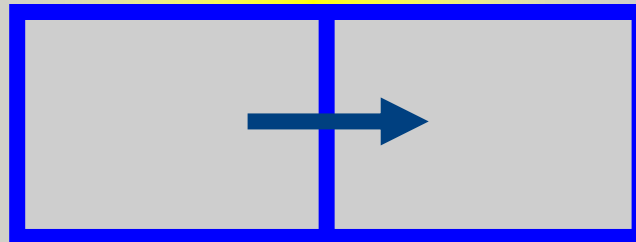


SOURCE

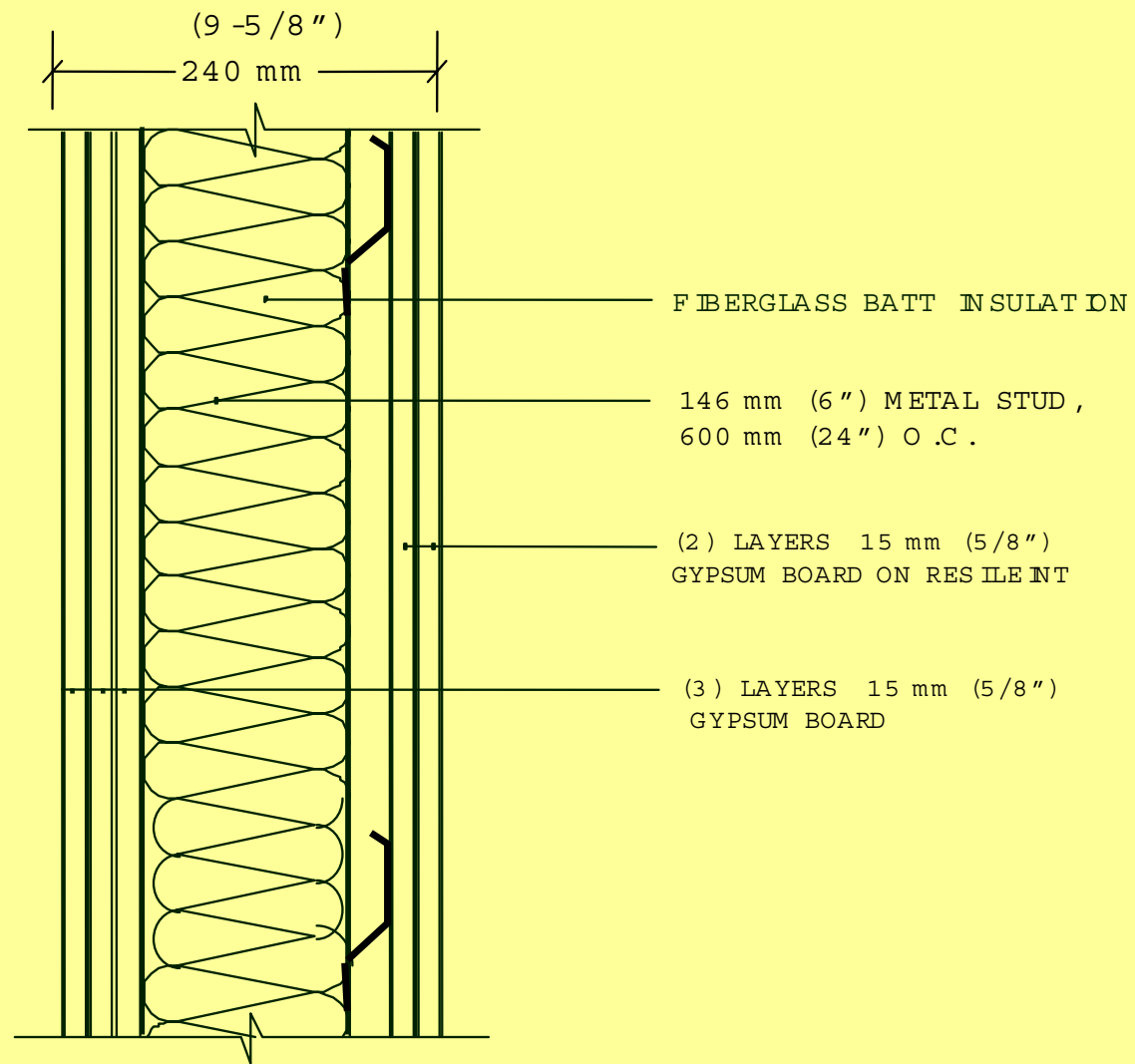
BARRIER

RECEIVER

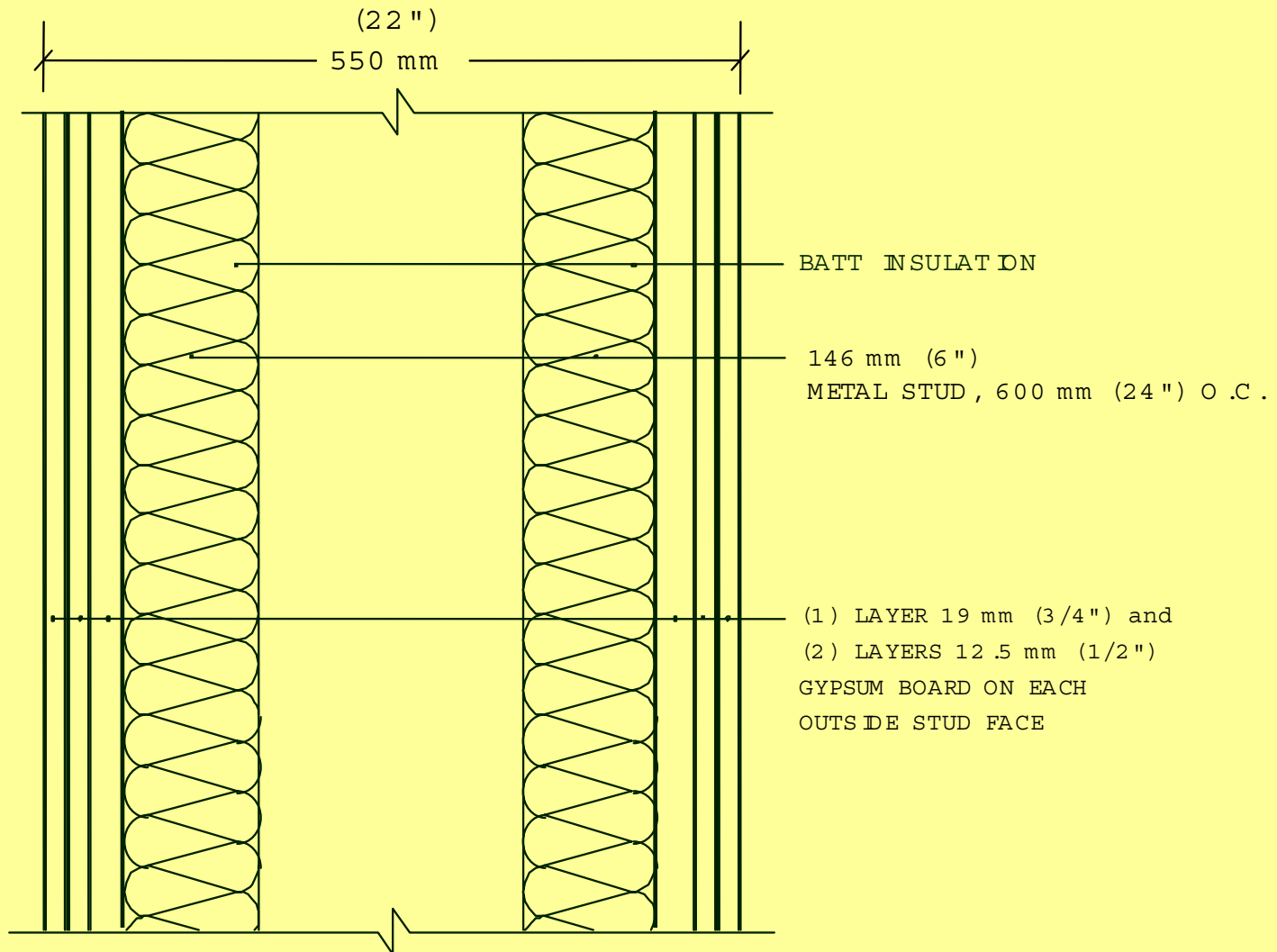
HORIZONTAL SOUND ISOLATION



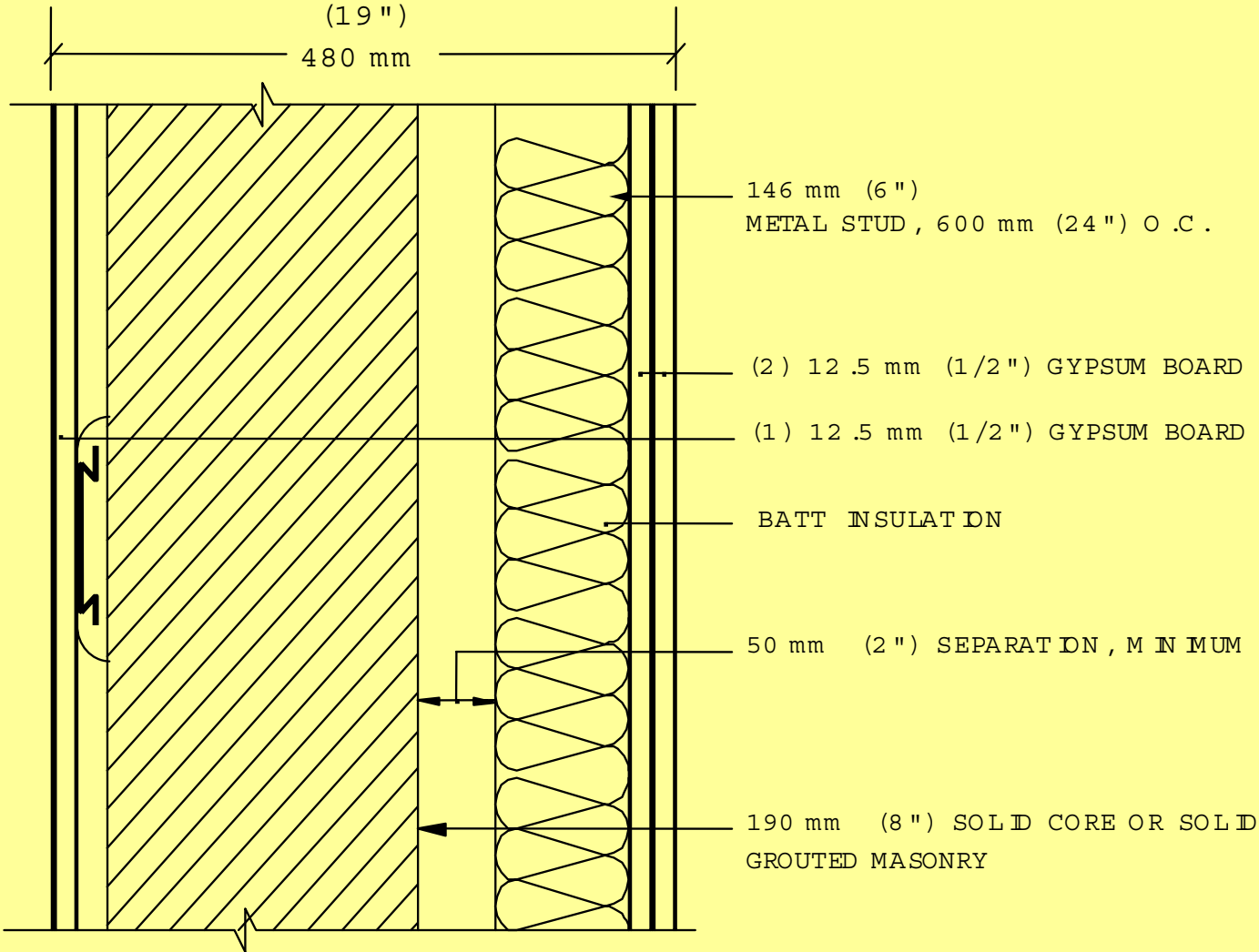
SINGLE FRAME/RESILIENT CHANNEL DEMISING WALL

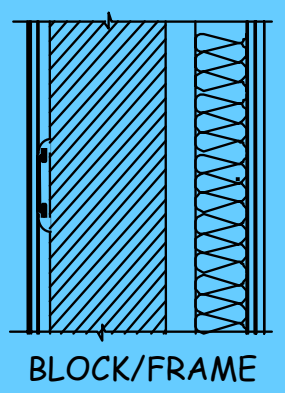
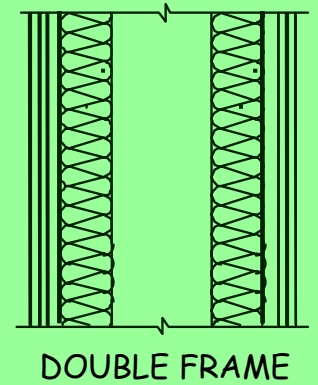
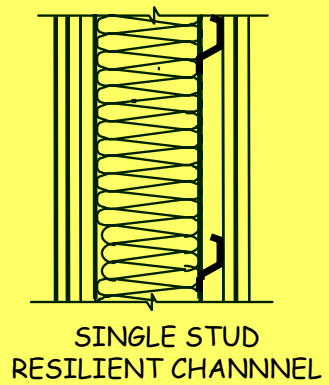


DOUBLE FRAME DEMISING WALL

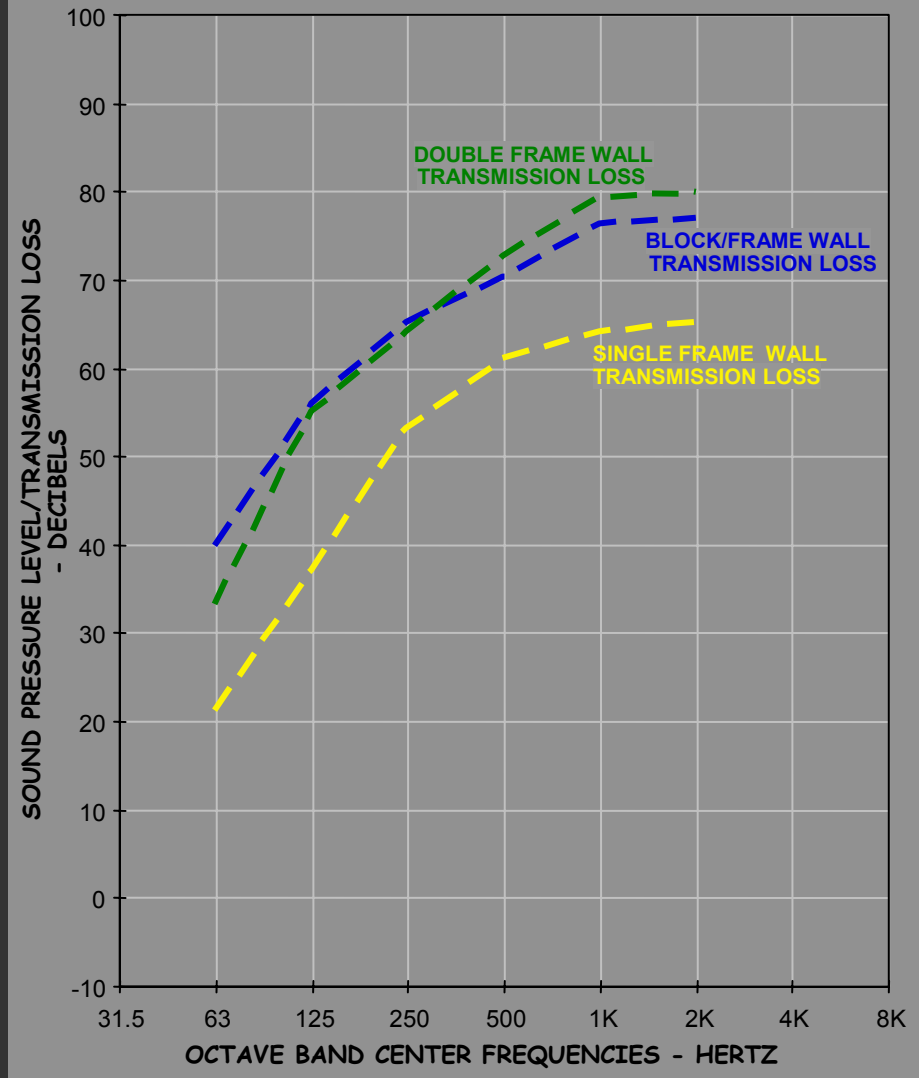


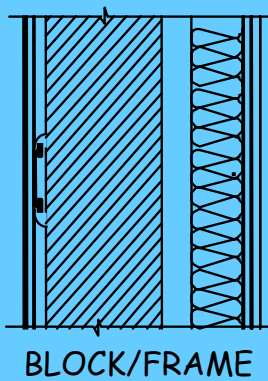
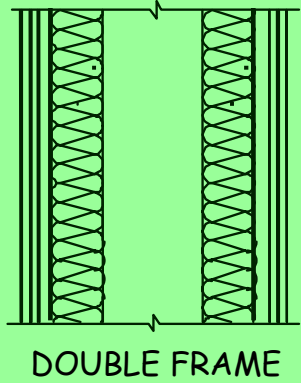
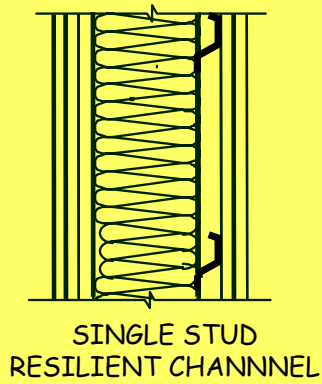
BLOCK/FRAME DEMISING WALL



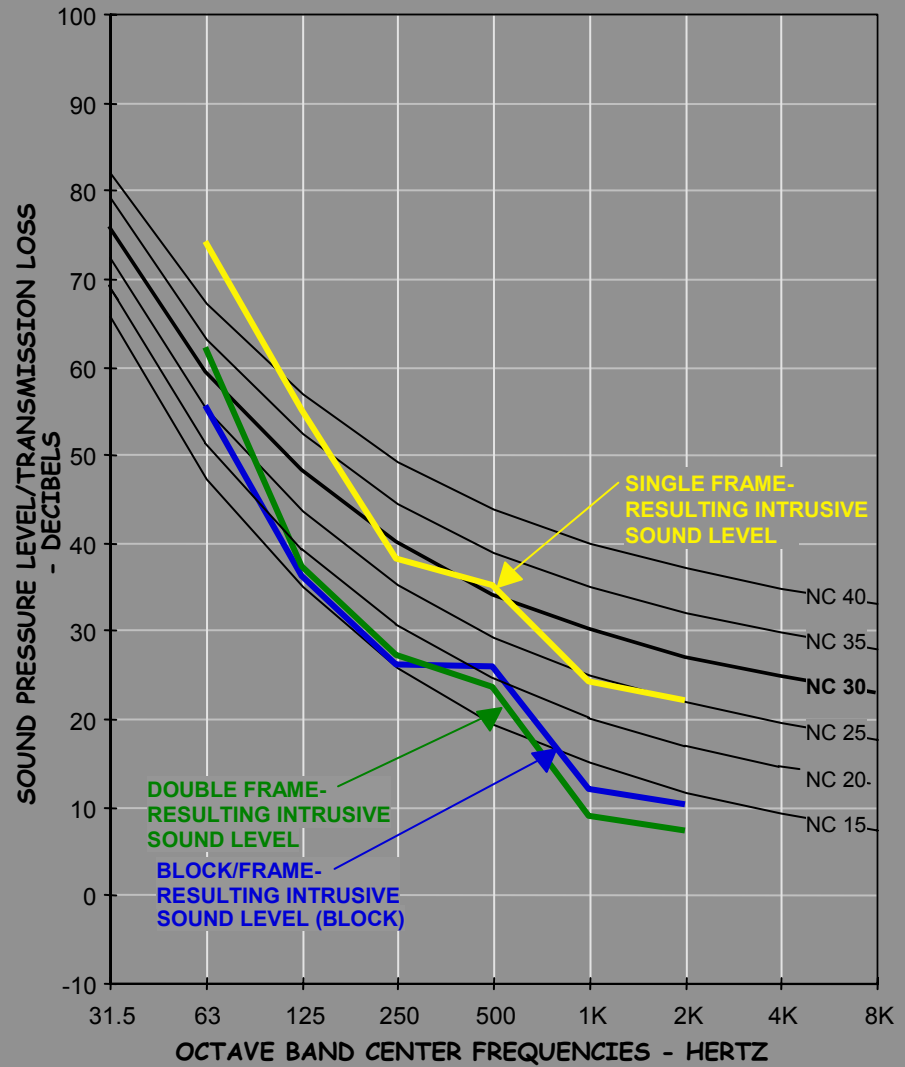


DEMISING WALLS/THX RECOMMENDATION COMPARISON

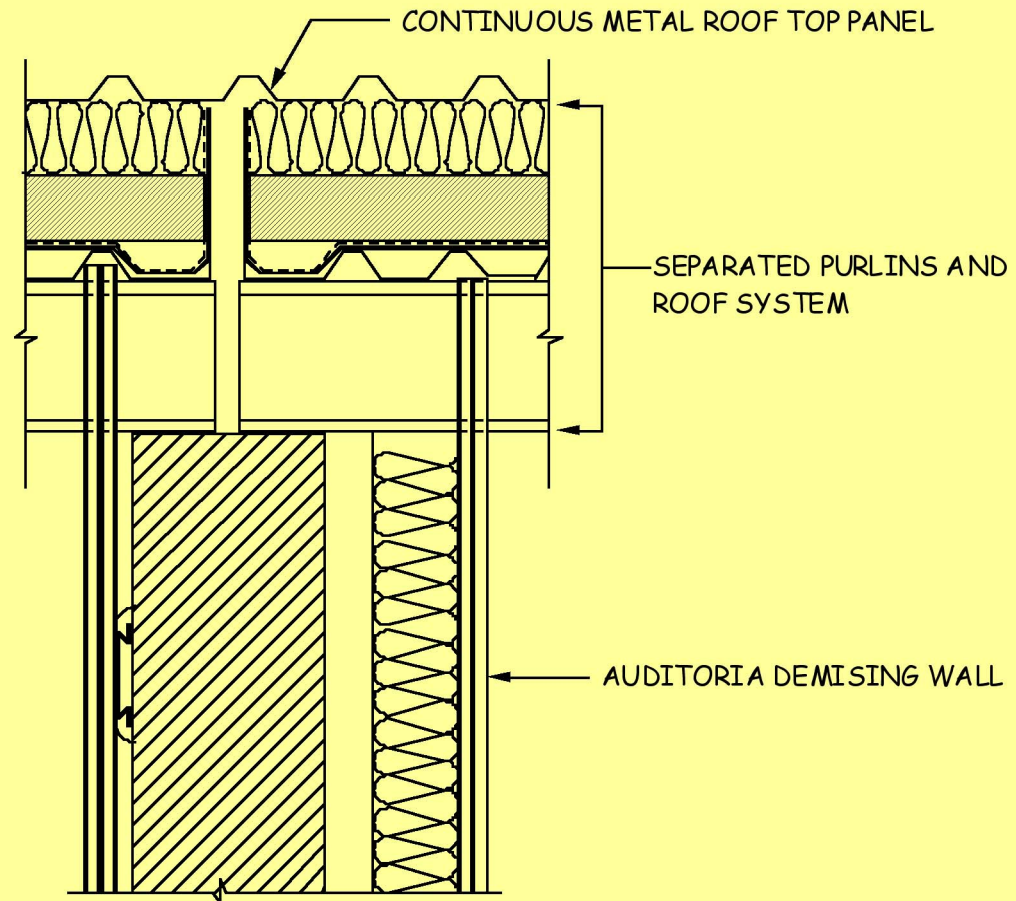




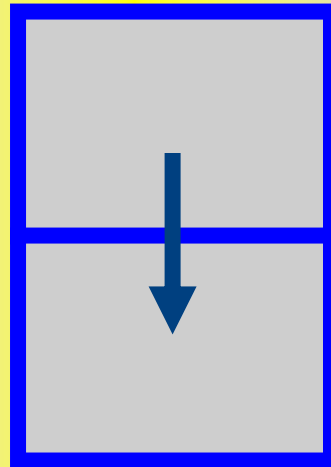
DEMISING WALL FIELD ISOLATION PERFORMANCE-RESULTS ONLY

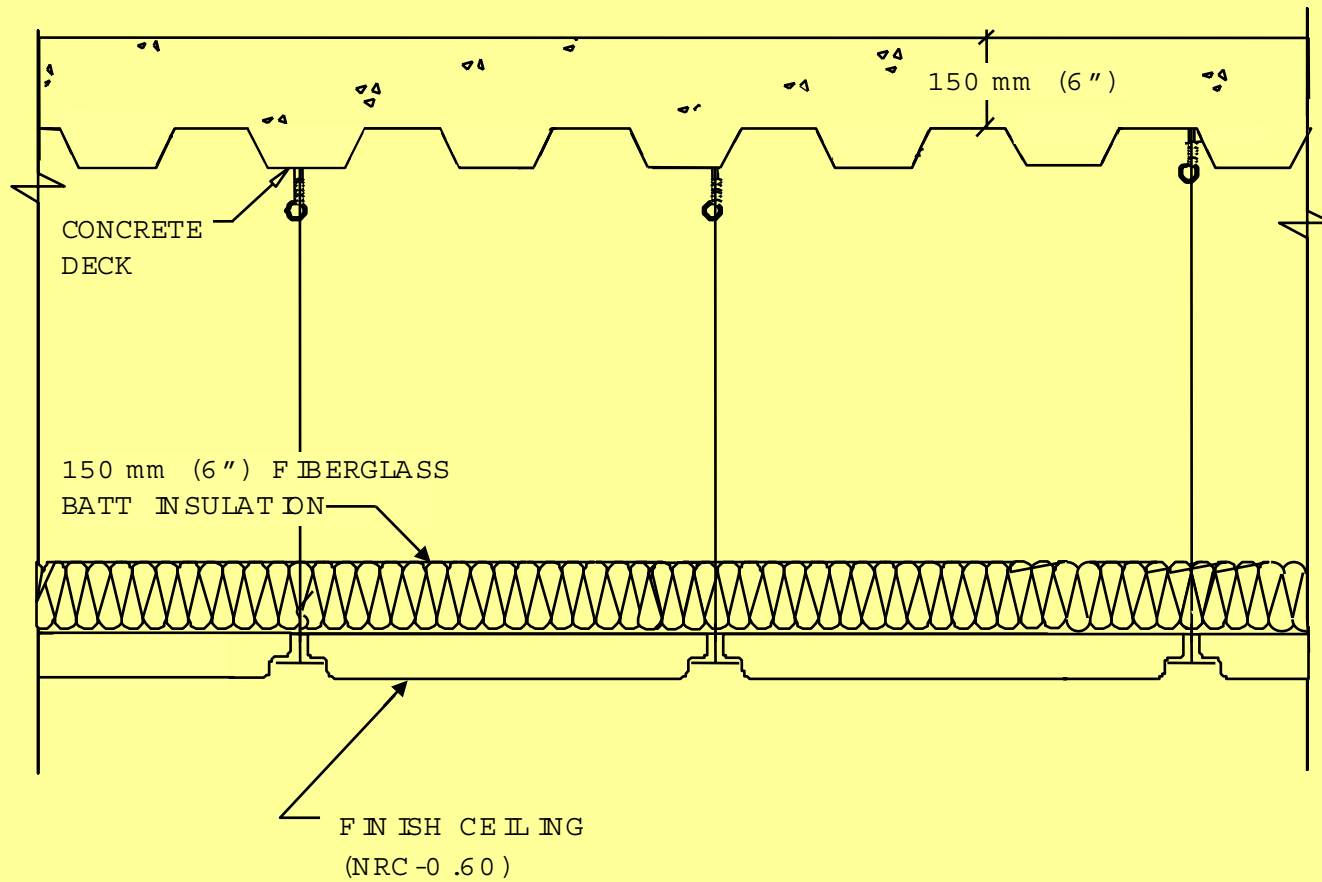


DISCONTINUOUS ROOF SYSTEM AT DEMISING WALL

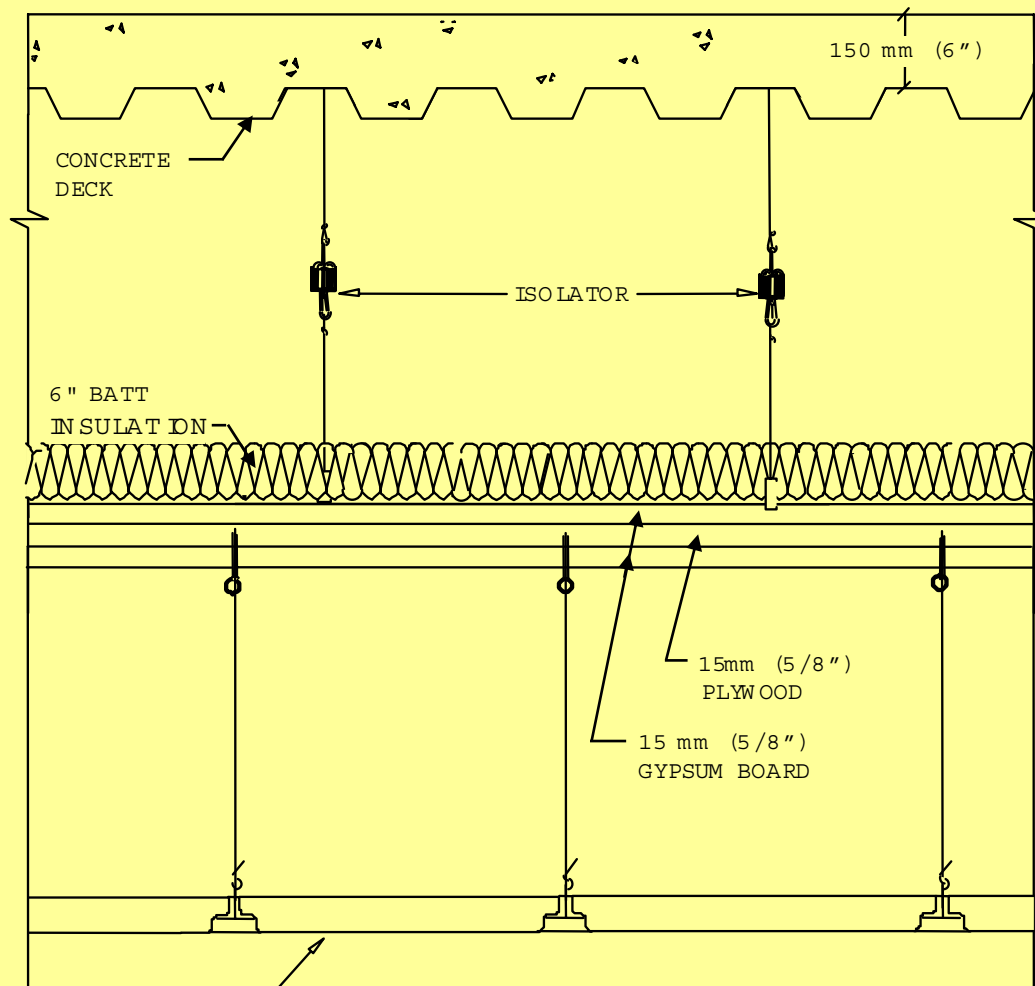


VERTICAL SOUND ISOLATION



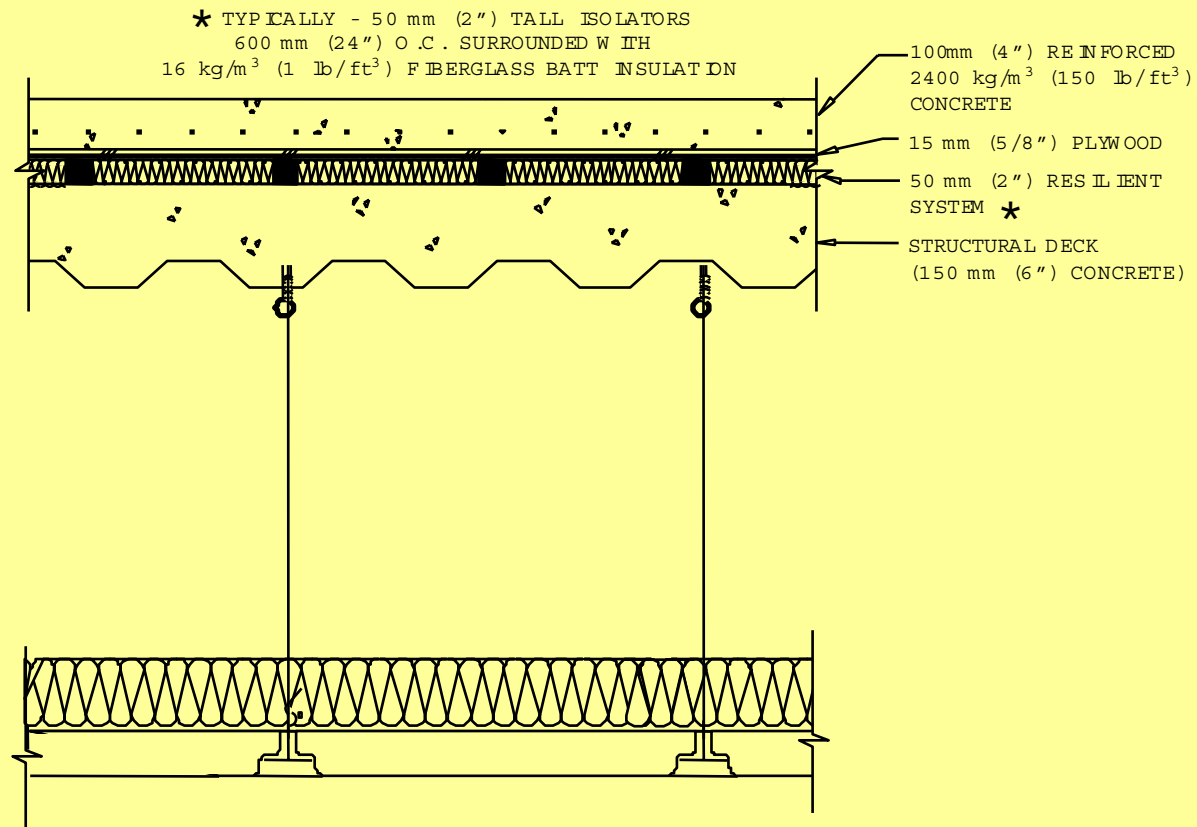


CONCRETE FLOOR DECK
WITH
ACOUSTICAL TILE CEILING

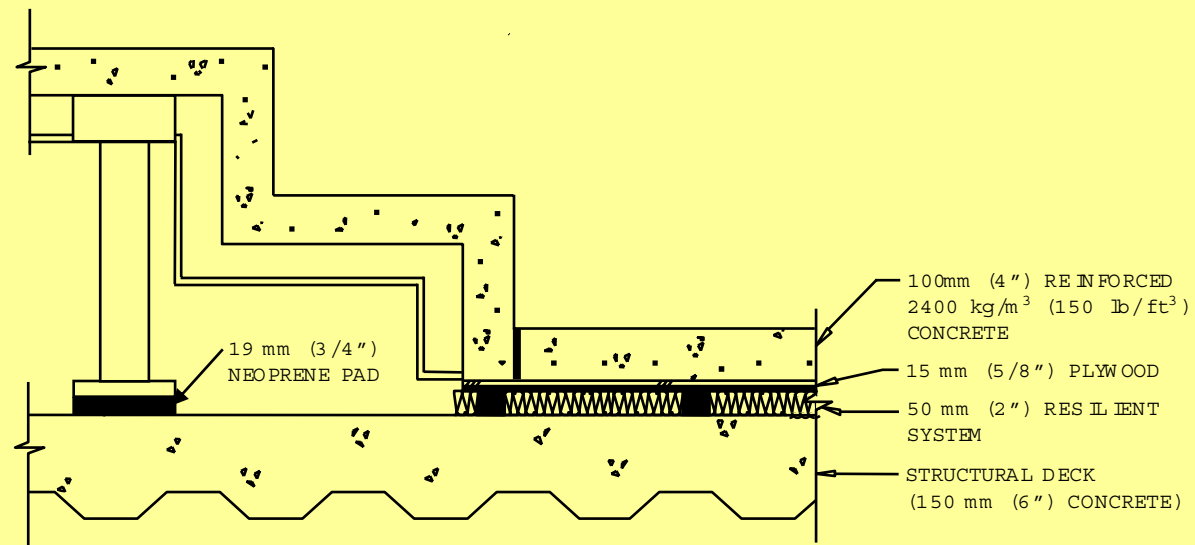


FINISH CEILING
(NRC-0.60)

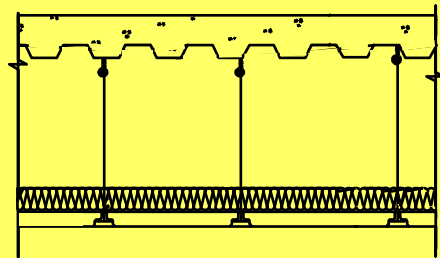
**CONCRETE FLOOR DECK WITH
RESILIENTLY SUSPENDED
CEILING**



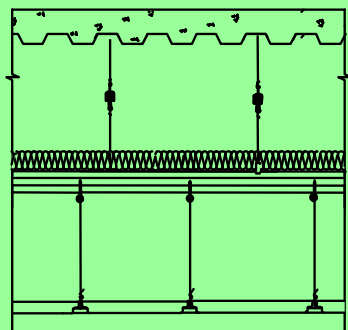
CONCRETE FLOATING FLOOR



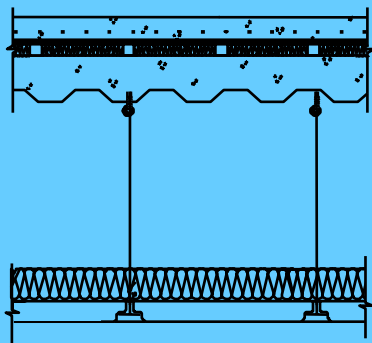
CONCRETE FLOATING FLOOR
WITH STADIUM SEATING



CONCRETE FLOOR DECK WITH
ACOUSTICAL TILE CEILING

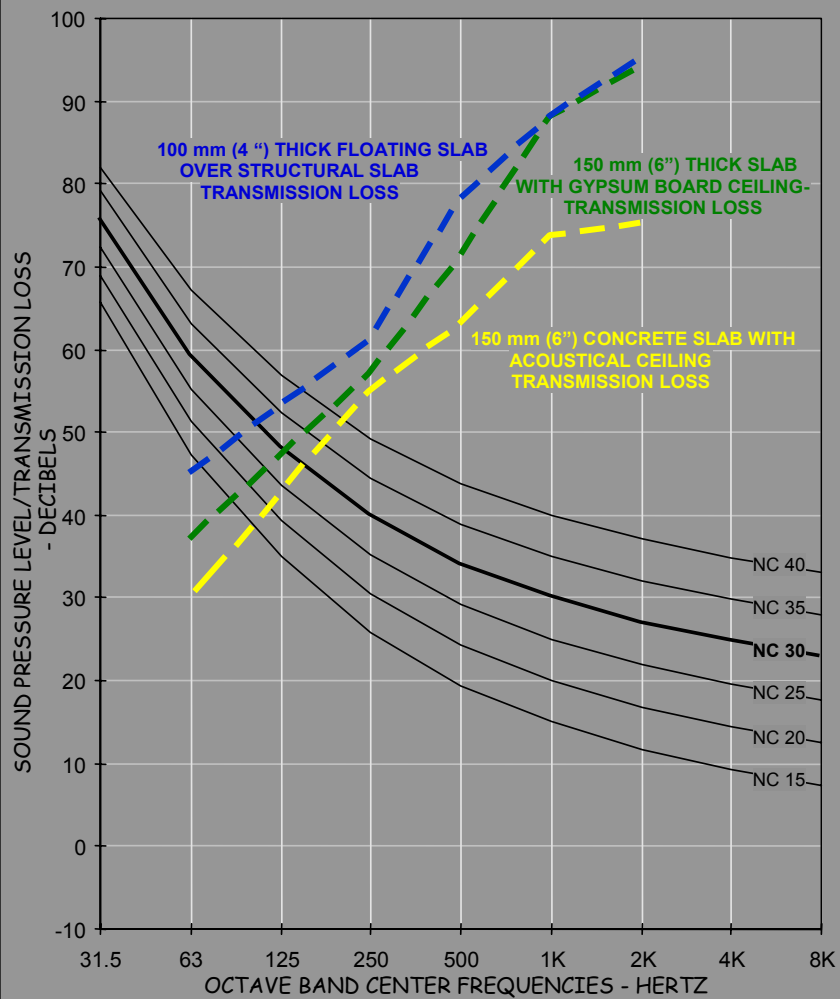


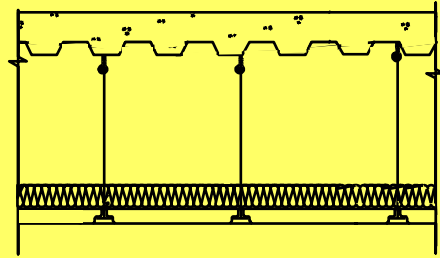
CONCRETE FLOOR DECK WITH
RESILIENT CEILING



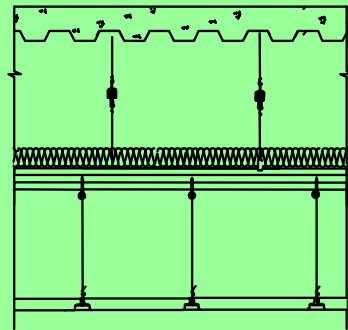
CONCRETE FLOATING FLOOR

CINEMA FLOOR/CEILING PERFORMANCE

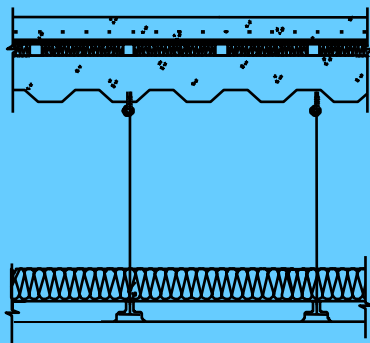




CONCRETE FLOOR DECK WITH
ACOUSTICAL TILE CEILING

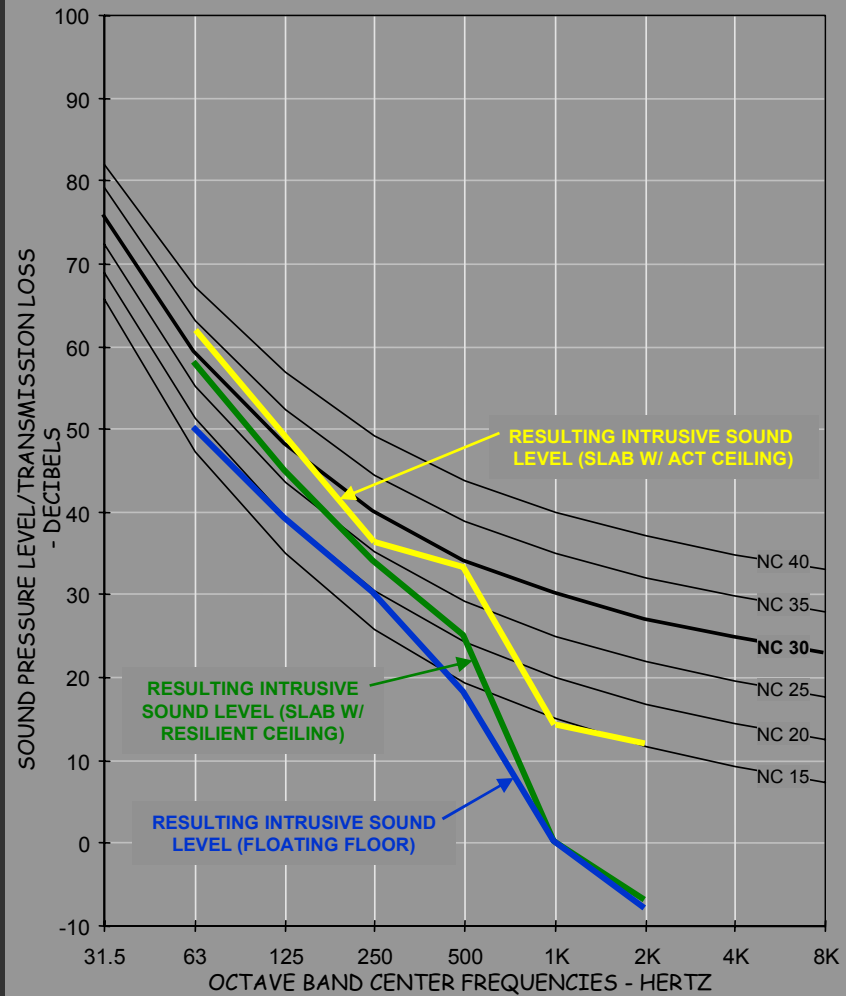


CONCRETE FLOOR DECK WITH
RESILIENT CEILING



CONCRETE FLOATING FLOOR

CINEMA FLOOR/CEILING PERFORMANCE



SUMMARY

- MEASURE SOUND LEVELS ON NOISY SITES
- DEFINE THE ACOUSTICAL CRITERIA
- SELECT INTER-CINEMA DOUBLE WALLS
- DON'T NEGLECT VERTICAL ISOLATION
- DON'T LOCATE CINEMAS DIRECTLY ADJACENT RESIDENCES



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