

# SOUND CONTROL SYSTEMS ON INTERIOR FLOORS

## 331F-SC-2019-2021

### DETAIL F – THICK SYSTEM ON CONCRETE NO DROPPED CEILING

#### SUITABLE SUBSTRATES

- Interior concrete slabs. Floor systems over which the tile is installed shall be in conformance with the Canadian National Building Code 2015 and applicable local building codes taking into consideration anticipated live and dead loads.

#### MATERIALS

- SOUND REDUCTION MEMBRANE – as per manufacturer’s recommendations. A wide range of resilient material can be used including crumbled rubber, cork, foam and other resilient materials.
- BOND COAT - Dry-set mortar (minimum acceptable standard ANSI A118.1 or ISO 13007 C1), latex-Portland cement mortar (minimum acceptable standard ANSI A118.4 or ISO 13007 C2), modified epoxy emulsion mortars or 100% solids epoxy mortar (minimum acceptable standard ANSI A118.3 or ISO 13007 R1).
- GROUT – Portland cement, latex-Portland cement (minimum acceptable standard ANSI A118.6 or ISC 13007 CG1) or epoxy (minimum acceptable standard ANSI A118.3 or ISO 13007 RG) or RTU grout.

#### APPLICATION

- Apply sound reduction membrane following manufacturer’s recommendations to provide complete coverage of the substrate in the area on which the tile is to be installed.
- All perimeters must be recessed away from the walls and acoustic sealant or prefabricated movement joints must be applied. Use proper notched trowel to ensure adequate bond. With pressure, apply a coat of mortar by using the trowel’s flat side to key the mortar into the substrate. Apply additional mortar, combing it in a single direction parallel to the tile’s shortest dimension, with the trowel’s notched side. Place the tiles firmly into the wet bond coat. Push the tiles back and forth in a direction perpendicular to trowel lines, to collapse the mortar ridges and to help achieve maximum coverage. Ensure proper contact between mortar, tile and substrate by periodically lifting a few tiles to check for acceptable coverage. Use sufficient bond coat to ensure minimum 80% contact to the back of the tile with back of tile. For tile with any edge longer than 380 mm use sufficient bond coat to ensure minimum 95% contact, with the corners and edges fully supported. Remove excess mortar from the joint areas so that at least 2/3 of the tile depth is available for grouting. Allow bond coat to cure. Force grout into the joints with a rubber grout float. Make sure all joints are well-compacted and free of voids and gaps. Remove excess grout from the tile surface and clean.

#### LIMITATIONS

- Some products/systems cannot be used in commercial applications where heavy loads and carts will be used. A “Light Commercial” to “Heavy Commercial” rating utilizing ASTM C627 should be required.
- This assembly will normally raise the floor from anywhere from 30 mm to 62.5 mm in height. Height restrictions should be evaluated.

#### OTHER CONSIDERATIONS

- Sound reduction membranes are intended to minimize the transfer of sound from one room to the room below, it is however only part of the overall system. Substrates, flooring material, dropped ceiling assemblies, perimeter joints, etc., will all affect the overall values.
- Movement Joint (architect must specify type of joint and show location and details on drawings)
- Movement joints - mandatory according to Detail 301MJ-2019-2021.
- All systems must meet or exceed a “Residential Rating” with ASTM C627.
- Some systems require 2 layers of 15 mm type X Gypsum Ceiling.
- Refer to notes on “Sound Control Underlayment”.
- Ratings may vary from 40 IIC to approximately 60 IIC using ASTM E492. depending on product and other components in the system.
- This floor assembly has little or no effect on STC rating, normally this floor assembly will have an STC of 50 or more, when the appropriate sound rated wall detail is used.
- Request for test results for ASTM E2179 from manufacturer to determine contribution on a concrete slab. Product specified should have a contribution (Δ) IIC rating of 20 or greater. A bare concrete slab 150 mm thick with no ceiling panels will have approximately an IIC of 28. Alternatively, a concrete slab 200 mm thick with no ceiling panels will have approximately an IIC of 32.
- Detail 314F-G Modular Screed System on concrete can be used as alternative to a monolithic mortar bed.

