



CERAMIC TILE INSTITUTE OF AMERICA, INC.
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CTI FIELD REPORT 73-8-1 (R-89)

SUBJECT: CELLULAR SOUND DEADENING (CONCRETE?) AND OTHER SOUND DEADENING MATERIALS UNDER CERAMIC TILE FLOORS

A. INTRODUCTION

1. Ceramic tile floors can be successfully installed where sound deadening materials have been placed.
2. The method that will be successful must be taken into consideration and the proper recess made in the structure to receive it.
3. Enough tile contractors have been asked to tile over this material, where not enough recess was left in the structure, to warrant this Field Report.

B. DISCUSSION

1. The question mark (?) -after concrete in the title of this Field Report was no accident. It is believed that referring to this material as concrete by those that manufacture it is a misnomer.
2. The true meaning of concrete is for it to have coarse pieces of aggregate at least the size of pea gravel. Many of the sound deadening materials are made of a sand cement slurry which is foamed. It is no more a concrete than is our setting bed which contains nb,coarse aggregates and so we call it a mortar.
3. The cellular sound deadening material is subject to extreme cracking. This is because it has a high shrinkage factor and very little structural strength.
4. At least one of the companies manufacturing it state in their brochures that they have a 4x4--14/14 self furring welded wire shrinkage mesh available. Field checking shows that the shrinkage mesh is seldom used even though it would prevent much of the cracking.
5. It is believed that the cellular sound deadening material will not cause problems where it is used under a conventional mortar set ceramic tile floor installation that is isolated from the cellular sound deadening application. This means that in addition to the sound deadening material, room must be left for the conventional mortar installation. This means an additional minimum of one and one-quarter inch plus the thickness of the ceramic tile.
 - a. An isolation sheet of fifteen pound felt, equivalent Kraft paper, or six mil polyethylene sheeting, shall be placed over the cellular sound deadening foam first.
 - b. A mortar bed of one part portland cement to five or six parts sand is then placed over the isolation sheet. The mortar bed to be not less than one and one-quarter inch thick.
 - c. The mortar bed is to be reinforced in the approximate center with a welded wire fabric 2x2 inch mesh and 16/16 wire or 3x3 mesh with 13/13 wire.
 - d. The ceramic tile is then to be bonded to the mortar bed with one of the accepted bonding materials.

6. Do not be talked into bonding directly to the cellular sound deadening material with any of the thin set bonding materials.
7. Do not place a mortar bed directly over the cellular sound deadening material without the isolation sheet and wire reinforcing in the tile mortar bed.
8. Field experience has proven that the ceramic tile installation will crack and fail when either method described in paragraphs 6 or 7 are used.
9. The sound deadening material can be left out of the areas where tile is to be installed. The tile in these areas to be installed with a cleavage membrane and minimum one and one-quarter inch thick wire reinforced mortar bed.

C. CONCLUSION

1. Isolate from cellular sound deadening (concrete?) with on of the three types of isolation sheeting.
2. Use a mortar bed not less than one inch thick nor more than one and one quarter inched thick.
3. Reinforce the mortar bed in the approximate center.
4. Bond the ceramic tile using one of the approved bonding materials.