



- 04 00 00 Masonry**
- 04 20 00 Unit Masonry**
- 04 22 00 Concrete Unit Masonry**
- 04 22 23.26 Sound-Absorbing Concrete Unit Masonry**

## **Sound Cell – Sound-Absorbing Concrete Masonry Units Specification**

### **SECTION 04 22 23.26 – SOUND-ABSORBING CONCRETE UNIT MASONRY**

#### **PART 1 – GENERAL**

##### **1.00 GENERAL**

- A. Provide SOUND CELL<sup>®</sup> Sound-Absorbing Concrete Masonry Units by Sound Seal, 50 H.P. Almgren Drive, Agawam, MA 01001; Phone (413) 789-1770; Fax (413) 789-4444

##### **1.01 SCOPE**

- A. SOUNDCELL<sup>®</sup> Acoustical Masonry Units (AMUs) shall be used to construct exterior and interior walls and partitions as shown on the plans and/or indicated in the Schedule of Finishes.
- B. Provide SOUNDCELL<sup>®</sup> acoustical masonry units conforming to ASTM C90 with factory installed noise attenuating fillers and appropriate grout shields to be field installed by contractor in accordance with construction documents.

##### **1.02 QUALITY ASSURANCE**

- A. Manufacturer Qualification: SOUNDCELL<sup>®</sup> AMUs shall be made on standard block machines using molds furnished or approved by Sound Seal to assure uniform quality. SOUNDCELL<sup>®</sup> AMUs shall be made with the same materials, concrete/aggregate mix design, manufacturing process, and curing methods as standard CMUs that have been tested according to current ASTM C140/C140 Standards to meet current ASTM C90 Standard requirements for Strength, Absorption, Density, and Linear Dry Shrinkage.

##### **1.03 PROJECT CONDITIONS**

- A. Project conditions regarding Masonry protection, Cold and Hot weather construction, and Construction loads shall meet the minimum requirements of the current *Specification for Masonry Structures* (TMS 602/ACI 530.1/ASCE 6).

#### **1.04 DELIVERY, STORAGE, AND HANDLING**

- A. SOUNDCELL® AMUs units shall be delivered to the project site cubed and palletized.
- B. Contractor shall store AMUs on level ground and be kept clean and dry. Double stacking of pallet containers shall not be allowed.
- C. SOUNDCELL® AMUs are to be handled to protect faces and edges from chipping. AMUs shall be installed by the General Contractor (or Masonry Contractor), using only mechanics skilled in the laying of masonry units. Jobsite cutting of AMUs shall be performed with power tools in such a manner as to provide straight and true edges.

### **PART 2 – PRODUCTS**

#### **2.01 SOUND-ABSORBING CONCRETE MASONRY UNITS**

- A. Furnish and deliver Acoustical Masonry Units (AMUs) as described in this section for installation in walls as shown on the Plans and/or indicated in the Schedule of Finishes meeting the following requirements.
- B. AMUs shall have two apertures formed on the cross-webs as elements to provide sound absorption into the AMU cavity.
- C. AMUs shall have an impressed and skewed surface relief to provide sound diffusion and improve flutter echo, standing waves, and sound intensity annoyances.

Description: SOUNDCELL® AMUs, as produced by an approved and licensed manufacturer of:

Sound Seal	Tel: (413) 789-1770
50 H.P Almgren Dr.	Fax: (413) 789-4444
Agawam, MA 01001	

#### **2.02 MASONRY UNITS**

- A. Density ([specify one](#))
  - 1) Normal Weight: 125 lb/ft<sup>3</sup> or more
  - 2) Medium Weight: 105 to less than 125 lb/ft<sup>3</sup>
  - 3) Lightweight: less than 105 lb/ft<sup>3</sup>
- B. Minimum Net Area Compressive Strength: 2000 lb/in<sup>2</sup>

#### **2.03 FITTINGS**

- A. Acoustical Fillers: Units shall have noise attenuating, incombustible, fibrous filler elements as supplied by SOUND SEAL, Agawam, MA and installed in the block cavities at the block plant.
- B. Grout Shields: Where 12” AMUs are designated on the plans to be grouted, AMUs shall have high-density, tempered hardboard, grout shields as provided by SOUND SEAL, Agawam, MA and field installed in the block cavities by the masons.

**2.04 ACOUSTICAL PERFORMANCE**

**A. Sound Absorption**

Sound Absorption: Per ASTM C – 423

Sound Absorption Coefficient per Octave Band Center Frequency (Hz)

	125	250	500	1K	2K	4K	NRC	SAA
12"	.95	.64	.55	.74	.81	.72	.70	.70
8"	.67	.89	.51	.75	.77	.69	.75	.74

**PART 3 – EXECUTION**

**3.01 PREPARTION**

- A. Base and transitional CMUS: The concrete wall or masonry course immediately beneath, and supporting, the first course of SOUNDCELL®AMUs shall be a Solid, filled Bond-Beam, Solid-top, or Stout Faced (3-5/8" face shell – one side) CMUs.

**3.02 INSTALLATION**

- A. General: The installation shall comply with the minimum requirements of the current *Specification for Masonry Structures* (TMS 602/ACI 530.1/ASCE 6).
- B. SOUNDCELL® units shall be laid in stacked (preferred) or running bond with 3/8" mortar joints.
- C. Mortar joints shall be struck flush, filled and dressed on the face-side of the units, and shall be tooled, brushed, and finished-tooled on the backside of the units.
- D. The AMU apertures shall be exposed to the area where the sound absorption is desired as indicated on the plans. Care shall be taken to ensure that the apertures are kept free of mortar or debris.
- E. AMUs shall be laid with full face shell mortar bedding. Vertical control joints shall be installed consistent with NCMA recommendations. Horizontal wire reinforcing shall be installed at 16" on-center. 10" Ladder mesh wire reinforcement shall be utilized for 12" SOUNDCELL® AMUs; 6" Ladder mesh wire reinforcement shall be utilized for 8" SOUNDCELL® AMUs.
- F. Solid Top, filled Bond Beam or Stout Faced CMUs shall be utilized as a course separating the SOUNDCELL® units from regular utility CMU's in order to insure correct face shell alignment and full mortar bedding.