ACOUSTICAL SHELL SYSTEM **SECTION 11068**

A. GENERAL

1. Provide self supporting, portable, folding wall towers, capable of being grouped in a variety of configurations. Provide ceilings shaped to accommodate lighting and tower configuration, with a rotation capacity for adjustable performance angle and minimum storage depth.
2. The Acoustical Shell System shall be “Cosma” as manufactured by CK Wegner, Inc., St. Michael, MN.

B. ACOUSTICAL PANEL COMPOSITION

1. All panels shall be of laminated construction, weighing not less than 2.5 lbs./square ft.
2. Lamination shall be by means of water activated urethane adhesive.
3. Stressed skins shall be 1/8” standard hardboard with standard grade high pressure laminate on the face, and .045 backer on the back.
4. Core shall be 1 ½ ” thick, 15% resin impregnated paper honeycomb. (80-60-15 composition)
5. All panels shall have integral internal steel fasteners allowing the panel fronts to be free of exposed fasteners.
6. Panels edges shall be extruded aluminum channel capped with black PVC trim.
7. All panel faces shall have an 8’-0” radius curve.

C. SHELL TOWERS

1. Each tower shall consist of one 4’-0” center panel and two 4’-0” adjustable wing panels.
2. Tower wing panels shall have doors as shown on drawings, with a minimum single door clearance of 3’-8” x 7’-0”.
3. Tower base and vertical frame work shall be uni-welded 3” x 1” x 16 ga. double steel tube, light weight and strong for rigid alignment from tower to tower.
4. Tower vertical panel seams shall incorporate multiple-cavity 6063-T6 aluminum extrusion trim to prevent back stage light from appearing between panels.
5. Tower frame shall incorporate 2” x 3/16” steel angle clips and 4 ½” x 4 ½” steel hinges for panel assembly.
6. Tower base shall incorporate a counterweight box assembly formed from 10 ga. steel.
7. Counterweight shall be of 1” thick nominal hot rolled steel. Number of counterweights to be determined by height of tower.
8. Each tower base shall incorporate three adjustable foot assemblies that serve as leveling devices for uneven floors, as well as lifting points for the tower transporter.
9. All tower wings shall have a telescoping friction slide which allows the wing to be held firm in any position. Adjustments shall be made by one person, from the stage floor.
10. Tower doors shall feature a gas spring closing mechanism.
11. Doors shall have a slide stop device to incorporate the door with the wing in the storage position.
12. Doors shall have pull handles on the back, and decorative push plates mounted on the face.
13. Each tower’s center panel shall have a removable 15” section at the bottom of the panel to allow transporter engagement.
14. The tower’s removable panel shall be fastened and removed from the rear of the tower, and stored in brackets located on the back of the tower.
15. Each tower shall be designed to nest within another to achieve minimal storage space.
16. Tower size and quantity shall be as shown on the drawings.

17. All towers shall display a safety sign at eye level on the back, declaring safe handling procedures.

D. TOWER TRANSPORTER

1. Towers shall be positioned by means of a rolling, cordless, 12V DC electrically actuated transporter containing an onboard battery charger.
2. The transporter shall incorporate three turtle caster assemblies mounted under a variable height self aligning thrust bearing, with 5 urethane wheels of minimum 2 ½ ” dia. for maximum floor protection and mobility.
3. The transporter shall incorporate a simple control station to raise or lower each tower.
4. Electrical or air systems requiring power cords are not acceptable.
5. Hydraulic pump systems with a threat of possible leakage on the stage floor, are not acceptable.

E. SHELL CEILING PANELS

1. Shell Ceiling panel size and quantities shall be as shown on the drawings.
2. Construction shall be as described in Paragraph B above.
3. Shell Ceiling panels shall be suspended from integral internal steel fasteners. No through bolts or facial fasteners are acceptable.
4. Shell Ceilings shall incorporate 1 ¼” sq. x 14 ga. steel tube offset hanger arms, allowing panels to store at 0 degrees vertical within a minimal space.
5. Hanger arms shall be secured to a 12” steel pipe truss batten, which will create true horizontal suspension of the ceiling panels.
6. Shell Ceiling performance angle shall be variable by means of an adjustment mechanism that allows repeated deployment without wear or re-adjustment.
7. Shell Ceilings shall rotate from performance to storage (vertical) position without the use of tools, and require no more than 75 lbs. of force.
8. Each ceiling row shall display a safety sign on the back, advising safe handling procedures.

F. ACCESSORIES

1. Integral lighting, tower view ports, and optional shell finishes are as specified in this section, and as shown on the drawings.
2. Custom panel face materials, panel sizes and radius are available upon request.

G. AUDITORIUM SOUND REFLECTIVE PANELS

1. All panels shall be of a laminated construction.
2. Lamination shall be by means of water activated urethane adhesive.
3. Stressed skins shall be 3/16” standard hardboard with the back painted black, and the face painted as specified by architect or owner.
4. Core shall be 1 ½ ” thick, 15% resin impregnated paper honeycomb. (80-60-15 composition)
5. All panels shall have integral internal steel fasteners allowing the panel fronts to be free of exposed fasteners.
6. Panels edges shall be extruded aluminum channel capped with black PVC trim.
7. All Panels shall have a 10’-0” radius curve.
8. Panel size and quantity shall be as shown on the drawings.
9. Panels shall be supported by P1000 Unistrut, spanning and attaching to building roof structure by means of steel clamps.
10. Suspension may be by cable or chain. Cable size shall be no less than 1/8”, and chain shall be no less than 3/16” proof coil. Employ properly sized fittings with eye bolt connection to Unistrut and panel back.