



AWS Sempra Composite Wall and Ceiling Panels

PRODUCT FIT: DIVISION 6 - Specification Section # 068315

PART 1

GENERAL

Specifications for AWS Sempra Composite Wall and Ceiling Panel systems that are designed for biocontainment and clean room applications as described in this Section. Note that drawings and General Provisions of Contract, including General and Supplementary Conditions and Division 1 Specifications apply to work in this section.

The SEMPRA PRO system is a state-of-the-art laminated product incorporating:

1. Face is 100% pure vinyl, extruded, semi-rigid PVC sheet. The panel is homogenous.
2. Aluminum (second layer)
3. Solid HDPE core
4. Adhesive
5. Aluminum overlay (bottom)

1.1 RELATED WORK:

- 1.1.1 Section 054000 - Cold-Formed Metal Framing
- 1.1.2 Section 068320 - Gel Coat Fiberglass Reinforced Polymer Composite Molded
- 1.1.3 Architectural Shapes
- 1.1.4 Section 082200 - Fiberglass Reinforced Polymer (FRP) Doors.
- 1.1.5 Section 083110 - Acrylic Access Doors and Panels
- 1.1.6 Section 092216 - Non-Structural Metal Framing

1.2 SUBMITTALS

- A. Comply with Section 013300 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data including installation instructions.
- C. Shop Drawings: Submit manufacturer's shop drawings, including plans, elevations, sections, and details, indicating composite ceiling panels, wall panels, wall base, joints, radius joints, finish junctions at wall-to-wall, wall-to-ceiling, wall-to-floor, wall-to-window/door frames, mastic or tape adhesive, and attachment screws.
 1. Indicate size and location of wall openings and penetrations.
 2. Indicate items to be supported by walls. Include loads.
 3. Indicate method of sealing joints, openings, and penetrations.
 4. Suspension system spacing and details.



5. Splicing, joint treatment, and fastening details of ceiling panels.
6. Changes in ceiling planes, openings, and intersections with vertical element.
7. Ceiling access door dimensions and location.

D. Samples: Submit manufacturer's samples as required.

1. Sempra ceiling panels.
2. Sempra wall panels.
3. Wall base.
4. Attachment joints.
5. Finishing compound detailing.

E. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for the intended application.

1.2.1 Submit samples of AWS Sempra Composite panels and accessories for interior walls and ceilings. Spline, joint covers, mastic, finishing compound, sealants, fasteners, and other components required for a complete, hermetically sealed, wall and ceiling system.

1.2.2 Shop drawings of panel and joint layout, floor detail, wall and ceiling detail, and other information that pertain to the project.

1.3 WARRANTY PERIOD: Ten years from date of delivery of Material.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer certified by composite panel Manufacturer for type of installation required with a minimum of five years' experience.
- B. Mockups: It is recommended that before installing entire installation, build ROOM MOCK-UP to demonstrate mechanics, aesthetic effects and set quality standards for materials and execution. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Source Limitations: Obtain panels and accessories from single manufacturer. Color variances may occur through the manufacturing batching process.
- D. Cleaning: The Panel can be cleaned with a diluted soap/detergent solution. For stubborn stains use an alkaline cleaner compatible with PVC. When cleaning the surface, we recommend the temperature of water does not exceed 140° F (60° C). Pressure cleaning with hot water may be used with the pressure nozzle a minimum of 2 feet (600mm) away from the surface. To reduce the buildup of static, cleaning the panels with an anti-static solution is recommended. Remove construction debris from project site and legally dispose of debris.
- E. Do not install near open heat sources (ovens, etc). Stainless steel panels should be used in such areas.



1.5 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage:

1. Store materials in clean, dry area indoors.
2. Store flat.
3. Finishing Compound: Shelf life of each component is six months when stored in a clean, dry environment at 50-80°F (10-27°C) in original, unopened container. After opening, protect adhesive/sealant from excessive exposure to moisture by replacing protective cap on the cartridge.
4. Adhesive: Store for a maximum of 6 months from date of shipment at temperatures below 80 degrees F (27 degrees C).
- F. Handling: Protect materials and finish from damage during handling and installation in accordance with installation instructions.

1.6 ENVIRONMENTAL REQUIREMENTS

- A. Do not install materials until building is enclosed and all areas to receive materials are protected from dirt and dust and excessive temperature movements.
- B. Maintain the following conditions during and after installation in areas to receive materials.
 1. Minimum Temperature: 65 degrees F (18 degrees C).
 2. Relative Humidity: 20 to 60 percent.
 3. Maintain air temperature and structural base temperature at installation area between 65F (18C) and 80F (26C) for 48 hours before, during and 24 hours after installation.

1.7 WARRANTY

The warranty period provides a limited 10-year warranty from material defects in manufacturing and workmanship commencing from the date of sale of material.

1.8 JOB CONDITIONS

- 1.8.2 Metal studs used in the panel framing shall be 16 ga. Placed in (15 7/8" centers.)
- 1.8.3 For 24 hours before, during the installation, and for 72 hours after the installation, maintain temperature and relative humidity at in-service conditions.

PART 2 PRODUCTS

- A. Advanced Wall Solutions LLC; 101 Commerce Drive Brookfield, CT 06804. Tel: 475 259 2212
Email: sales@awsbp.com www.awsbp.com.



2.1 MATERIALS

2.1.1 System Overview: The wall system as specified shall consist of composite wall panels manufactured from materials having physical properties as specified in Section 2.1.3 below Panels shall have a consistent smooth high gloss finish.

2.1.2 Panels:

- The panels used in this system are AWS Sempra Composite wall and ceiling panels.
- The panels shall be 8.5 mm thick and shall be of an aggregate of components made of polymer, metal and P.V.C composite that form a durable composite wall panel.
- The surface finish is glossy and ASTM E84 Class A for smoke and flame spread. The panel will be supplied in standard 48" x 96", 48" x 108", and 48" x 120" sizes.
- The vertical edge shall be routed to a modified kerfed design that allows for direct fastening to the wall studs and a perfect connection to the spline for a uniform vertical gap between panels.
- The final recess shall be filled with the manufacturers recommended 100% solids LEED compliant urethane adhesive which shall also provide a gloss finish consistent with the panel face.
- Inside corners shall be formed of urethane sealant with a ½ inch radius
- Outside corner moldings shall be of 16 gauge, 304 stainless steel corner guards with 1/8" radius and 3" wings. (Stainless corner moldings shall be adhesive mounted.)

2.1.3 The panels shall have the following properties:

- Fire Rating: ASTM E 84-17 - Standard Test Method for Surface Burning Characteristics of Building Materials. CLASS A
- Maximum Weight: 3.5 lbs. per square foot
- Finish: PVC high gloss smooth hygienic antimicrobial
- Panel thickness: 8.5 mm
- Color: White
- Finish: Gloss
- ISO 6603/1 E50 - Determination of puncture impact behavior of rigid plastics:
Exceeds 94 Joules
- JIS Z2801 / ISO 22196 – Test for Antimicrobial activity and efficacy
Bacteria not detected or significantly reduced after 24 hrs
- Resistance: ASTM D543-14 - Standard Practice for Evaluating the Resistance of Plastics to Chemical Reagents
- Physical properties:

Property	ASTM Method	Conditions	Units	Value
Density	D-792		lbs/ft ³ (g/cm ³)	87 (1.4)
Heat deflection temperature (H.D.T.)	D-648	Load: 1.82MPa	*F (*C)	149-154 (65-68)
Service temperature			*F (*C)	14-122 (-10 to +50)
Thermal conductivity	C-177		Btu-in./hr-ft ² -*F (W/m K)	1.04 (0.15)
Water absorption	D-570		%	< .2
Coefficient of linear thermal expansion	D-696		in/in *F (cm/cm *C)	3.7x10 ⁻⁵ (6.7x10 ⁻⁵)
Shore D hardness	D-2240		Shore D	80
Tensile strength at yield	D-638	10 mm/min	Psi (Mpa)	7250 (50)
Tensile strength at break	D-638	10 mm/min	Psi (Mpa)	6500 (45)
Elongation at yield	D-638	10 mm/min	%	
Elongation at break	D-638	10 mm/min	%	>80
Tensile modulus of elasticity	D-638	1 mm/min	Psi (Mpa)	420,600 (2900)
Flexural strength	D-790	1.3 mm/min	Psi (Mpa)	11,600 (80)
Flexural modulus	D-790	1.3 mm/min	Psi (Mpa)	391,000 (2700)
Notched izod impact	D-256		lbf (J/m)	26 (118)
Impact falling weight	ISO 6603 /1E50	2.5 mm sheet	ft-lbf (J)	31 (43)
Chemical resistance	D-543	2.5 mm sheet		Pass

Bacterial Resistance: Test results (CFU Reduction after 24 hours)

MRSA	99.98%
Staphylococcus aureus	99.96%
Listeria monocytogenes	99.90%
Aspergillus niger	99.68%
Legionella pneumophila	98.50%
Streptococcus faecalis	97.91%
Salmonella typhimurium	96.11%
Clostridium difficile	95.00%
VRE	87.57%
Klebsiella pneumoniae	87.38%

2.1.4 The joint adhesive/sealant shall have the following properties:

- Hardness Shore D ASTM D-1706 70 - 80
- Tensile Strength ASTM D-638 3,000 psi min.
- Flexural Strength ASTM D-790 4,000 psi min.
- Thermal Shock Mil F-52505 No cracking or loss of adhesion
- Abrasion Resistance (Taber Abrader, CS-17 Wheels, 1000 gm. load, 1000 cycles)
- ASTM D-4060 .035 gm loss
- Ultimate Elongation ASTM D-638 20% min.

PART 3 EXECUTION (Consult Manufacturers Installation Instructions for more details)

3.0.1 Check with the panel manufacturer before installing the metal studs to determine the exact stud spacing and gauge of the stud within the wall. Install metal wall studs in accordance with local applicable zoning and building codes but also to match the sizing for the panels.

3.0.2 Apply adhesive of type recommended by the Manufacturer to the stud face prior to applying the panel. For other substrate, apply adhesive to the entire back side of the panel, all the way to the edges before placement. Follow Manufacturers recommendations for application and “open times” of the adhesive.

3.0.3 Panels are designed to be mounted directly against the studs. Put the panels in place against the studs approximately ½ inch above the floor. Place fastening screws into the studs at both the top and bottom of the panel to secure the top and bottom edges of the panels first. Secondly, attach the panels to each stud by inserting mounting screws in the joining joint between the panel so as not to assure that the screw head remains below the face of the panel.



3.0.4 If necessary, apply pressure to the center of the panel using a weighted lever until adhesive cures.

3.0.5 Mask the panel edges for protection and fill the vertical seams between panels with urethane adhesive recommended by manufacturer. Fill to a plane that will fill the seam flush with the adjacent panel surface. Finish the adhesive/sealant and remove the masking before the adhesive has set.

3.0.6 Inside corners shall be formed of the Lord urethane sealant with a ½ inch radius and outside corner moldings shall be 16 gauge, 304 stainless steel corner guards with 1/8" radius and 3" wings. (Stainless corner moldings shall be adhesive mounted.)

3.0.7 The ceiling wall angle and flooring cove base will cover top and bottom screw lines, respectively. Be sure to consult the installation guide for details.

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