**Altro Operetta**

**Commercial Smooth Sheet Vinyl Flooring**

**SECTION 09 65 16.23**

**RESILIENT SHEET FLOORING**

**(Commercial Smooth Sheet Vinyl Flooring)**

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: This section includes labor, materials and other services necessary to complete resilient sheet flooring and accessories work. Conform with requirements of all Sections of Division 1, General Requirements, as it applies to the work of this Section.

B. Related Sections:

 1. Section 03300 - Cast-in-Place Concrete: Concrete finishing.

 2. Section 06100 - Rough Carpentry: Plywood floor sheathing.

 3. Division 7 - Thermal and Moisture Protection.

 4. Division 15 - Mechanical.

1.02 REFERENCES

A. **ASTM D 2047**, Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.

B. **ASTM E 648/NFPA 253**, Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.

C. **ASTM E662,** Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.

D. **ASTM F710,** Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

E. **ASTM F 970**, Standard Test Method for Static Load Limit.

F. **ASTM F1482**, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring.

G. **ASTM F1303**, Standard Specification for Sheet Vinyl Floor Covering with Backing.

H. **ASTM F2170,** Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

I. (RFCI) Resilient Floor Covering Institute

 1. RFCI Standard Slab Moisture Test Method (Calcium Chloride Method)

1.03 SUBMITTALS

A. Product Data: Submit manufacturer’s current printed product literature, specifications, installation instructions, and field reports in accordance with Section 01330 - Submittal Procedures.

B. Shop Drawings: Submit shop drawings to indicate materials, details, and accessories in accordance with Section 01330 - Submittal Procedures including but limited to the following:

 1. Submit a cut diagram indicating seam locations and roll direction. Use mitered seam layouts for corners when changing directions 180 degrees (e.g. when running material down corridors which bisect at a right angle), unless approved otherwise.

C. Samples: Submit duplicate 12" x 12" (300 mm x 300 mm) sample pieces of sheet material, 12" (300 mm) long [gulley edge] [cap strip] [joint cover strip] [cove former] in accordance with Section 01330 - Submittal Procedures.

D. Closeout Submittals: Submit the following:

 1. Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

 1. Training: Installer who has attended an Altro flooring installation training clinic.

B. Regulatory Requirements: Provide sheet vinyl flooring in compliance with the following:

 1. Americans with Disabilities Act Architectural Guidelines (ADAAG).

 2. Occupational Safety & Health Administration (OSHA).

C. Mock-ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods, including concrete substrate testing.

 1. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.

 2. Incorporation: Mock-up may be incorporated into final construction upon Owner’s approval.

D. Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer’s installation instructions, manufacturer’s warranty requirements, and installer qualifications.

1.05 SITE CONDITIONS

A. Temperature Requirements: If storage temperature is below 65F (18C) or the floor temperature is below 50F (18C), the Altro safety flooring product must be moved to a warmer place and allowed to reach this temperature before unrolling or installation. For further information, refer to current Altro Installation Practices and Quick Facts.

B. Maintain air temperature and structural base temperature at flooring installation area between 68F (20C) and 80F (26C) for 48 hours before, during and 24 hours after installation.

1.06 WARRANTY

1. Warranty period for Altro Operetta shall be 10 years commencing on date of substantial completion.

 Refer to conditions of the contract for project warranty provisions.

1.07 BACKING

1. Altro Operetta uses non-woven polyester/cellulose, glass fiber reinforcement.

PART 2 PRODUCTS

2.01 FLOORING

A. Sheet Vinyl Manufacturer: Operetta by Altro, Telephone 800.377.5597, E-Mail Assistance: support@altrofloors.com

B. Acceptable material: Altro Operetta (measurements and product weights given below are approximate): Slip Resistance ASTM 2047 >.6 dry >.7 wet

COLORS

1. **Tutti OP2157:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

2. **Iris OP2174:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

3. **Beethoven OP2159:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg); .

4. **Black Forest OP2158**: Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

5. **Hurdy Gurdy OP2173:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

6. **Vivo OP2162:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

7. **Fife OP2167:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

8. **Allegra OP2169:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

9. **Quintet OP2114:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

10. **Tempo OP2115**: Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

11. **Pulse OP2118:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

12. **Jig OP2148**: Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

13. **Baron OP2145:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

14. **Sonatina OP2147:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

15. **Vagabond OP2141:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg); .

16. **Rondo OP2142:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

17. **Beat OP2155**: Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

18. **Penzance OP2153**: Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

19. **Loco OP2152:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

20. **Vamp OP2144:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

21. **Lulu OP2128:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

22. **Clef OP2125:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

23. **Samson OP2176:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

24. **Shell Shack OP2176:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

25. **Acapella OP2135:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

26. **Drop OP2127:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

27. **Cannon OP2129:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

28. **Glee OP2136:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

29. **Yeoman OP2139:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

30. **Madrigal OP2134:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

31. **Baroque OP2133:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

32. **Lola OP2178:** Thickness: 0.08” (2 mm); Roll Width: 6' 7" (2 m); Roll Length: 65’5” Roll Weight: 225 lb (102 kg);

2.02 ACCESSORIES

A. **Vinyl welding rod:** Acceptable material:

 1. Altro weld rod

B. **Cove former:** Acceptable material, sized to suit application:

 1. Altro Cove former [20R - 24 mm (1") radius] [38R - 45 mm (1.75") radius].

C. **Gulley edge:** Acceptable material, vinyl, sized to suit application:

 1. Altro Gulley Edge [GA 35/25] [GE 35RE] [GE 25RE].

D. **Cap strip:** Acceptable material, sized to suit application, [Vinyl] [stainless steel]:

 1. Altro Cap Strip [C4] [C7] [C8] [C11].

E. **Subfloor Filler and Leveler:** Use only gray Portland cement-based “moisture tolerant” underlayments, and patching compounds. Use for filling cracks, holes or leveling. White gypsum materials are not acceptable.

F. **Metal edge strips:**

 1. Aluminum extruded, smooth, [mill finish] stainless steel with lip to extend over flooring.

 G. **Adhesives**

1. Ecofix 20- Hard set for heavy rolling loads

2. Ecofix 25- Acrylic general adhesive

3. Altrofix 30- 2 part polyurethane for areas prone to moisture

4. Altrofix 31- 2 part polyurethane fast set adhesive

PART 3 EXECUTION

3.01 EXAMINATION

A. Compliance: Comply with manufacturer’s product data, including product technical bulletins, product catalog, installation instructions.

B. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer’s instructions.

3.02 PREPARATION

A. Flooring shall be installed over subfloors conforming to ASTM F710 for concrete and other monolithic floors or ASTM F1482 for wood subfloors.

B. Always conduct moisture tests per ASTM F-2170 on all concrete slabs regardless of age or grade level. ASTM F-2170 Relative Humidity (RH) test results must not exceed 90%.

C. Do not proceed with work until results of moisture condition tests are acceptable.

D. When patching, a moisture tolerant patching compound must always be used.

3.03 INSTALLATION

A. Altro Operetta Installation: Install Altro flooring in accordance with the current posted Altro Installation Practices and Quick Facts Guide. All Seams shall be heat welded with Altro Weldrod™ only. Failure to install Altro flooring in accordance with recommended procedures will void the Altro Limited Product Warranty.

B. Coved Installation: Where Altro flooring is coved up wall surfaces and other abutments, installation shall be in accordance with Altro flooring Installation Practices using the following accessories:

 1. At standard wall finishes: Use Altro C7 vinyl cap strip to accommodate sheet vinyl to a height as indicated.

 2. At ceramic tile, Altro Whiterock semi-rigid wall cladding or FRP paneling: Use Altro C8 Vinyl Captile Strip or C4 cap, respectively.

 3. At 0.75" (19.1 mm) radius coving at juncture of vertical and horizontal surfaces: Use Altro Vinyl Cove Former 20R.

 4. At 1.5" (38 mm) radius coving at juncture of vertical and horizontal surfaces: Use Altro Vinyl Cove Former 38R.

 5. Top set cove base: Install in accordance with manufacturer’s instructions.

3.04 SOUND INSULATION

 1. Altro Operetta provides 4dB of sound insulation.

3.05 CLEANING

**Specifier Note: Altro flooring is unaffected by surface water and most chemicals which do not have a solvent action on vinyl. Certain organic solvents and chemicals, including asphalt, can cause staining. Acids and dyes may affect the color, which should be selected accordingly. Contact Altro for information about the effect of chemicals on Altro flooring.**

A. Cleaning: Remove temporary coverings and protection of adjacent work areas.

 1. Repair or replace damaged installed products.

 2. Clean installed products in accordance with manufacturer’s instructions prior to Owner’s acceptance.

B. Protection:

 1. Sweep or vacuum all construction debris and dust first, then clean the flooring with Altro Clean 44 using an auto scrubber.

3.06 PROTECTION

A. Cover and protect finished installation from damage from other trades using a non-staining, temporary floor protection system, such as a reusable textured plastic sheeting.

 Altro Operetta should be covered and protected from all other trades during construction with a suitable non-staining protective covering without taping to the surface of the flooring.

----------------------------------------------------------- END OF SECTION -----------------------------------------------------------