

**GUIDE SPECIFICATIONS FOR
ElectraStat Rubber Flooring
By Ground Zero Electrostatics, Inc.**

SECTION 09650

RESILIENT FLOORING

PART 1 - GENERAL

1.01 SUMMARY

NOTE TO SPECIFIER: EDIT LIST BELOW. REFER TO PART 2 - PRODUCTS FOR ESD PROTECTION (ELECTRONIC DISCHARGE PROTECTION) ALSO INCLUDED, ETC.

- A. The work of this Section includes:
1. Rubber tile flooring.
 2. Rubber sheet flooring.
 3. Rubber wall base.
 4. Rubber stairtreads and accessories.
 5. Subfloor preparation.
- B. Related Sections: Other Specification Sections which directly relate to the work of this Section include, but are not limited to, the following:
1. Section 03300 - Cast-In-Place Concrete; concrete substrate; slab surface tolerances; vapor barrier for applications on or below grade; 90 degree riser and tread edge angle for stair tread and nosings.
 2. Section 06100 - Rough Carpentry; plywood substrate; surface tolerances.
 3. Section 10270 - Access Flooring; resilient floor covering for access panels.
- C. References (Industry Standards)
1. American Society for Testing and Materials (ASTM)
 - A. ASTM E 648 Standard test method for critical radiant flux of floor covering systems using a radiant heat energy source.
 - B. ASTM E 662 Standard test method for specific optical density of smoke generated by solid materials.
 - C. ASTM E 84 Standard test method for surface burning characteristics of building materials.
 - D. ASTM D 3389 Standard test method for coated fabrics abrasion resistance (rotary platform, double-head abrader).
 - E. ASTM D 2047 Standard test method for static coefficient of friction of polish-coated floor surfaces as measured by the James Machine.
 - F. ASTM F 1344 Standard specification for rubber floor tile.
 - G. ASTM 1860 Standard specification for rubber sheet floor covering with backing.
 - H. ASTM 1859 Standard specification for rubber sheet floor covering without backing.
 - I. ASTM F 2169 Standard specification for resilient stair treads.
 - J. ASTM F 1861 Standard specification for resilient wall base.
 - K. ASTM F 710 Standard practice for preparing concrete floors to receive resilient flooring.
 - L. ASTM F 150 Standard test method for electrical resistance of conductive and static dissipative resilient flooring.
 - M. ASTM F 2170 Standard test method for determining relative humidity in concrete floor slabs using in situ probes.

- N. ASTM F 1869 Standard test method for measuring moisture vapor emission rate of concrete subfloor using anhydrous calcium chloride.
- O. FTM 4046 101 Static decay.
- P. ESD STM 97.2 Floor materials and footwear - Voltage measurement on a person.
- Q. ESD S7.1 100 Resistive characterization of flooring materials.

2. National Fire Protection Association (NFPA)

- A. NFPA 253 Test method for critical radiant flux of floor covering systems using a radiant energy source.
- B. NFPA 258 Test method for specific density of smoke generated by solid materials.

1.02 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, installation instructions, and maintenance recommendations for each material proposed for use.
- B. Samples: Submit two 15 by 15 cm (6 by 6 inch) verification samples of each type of product specified in color selected for use.
- C. MSDS (Material Safety Data Sheets) are available for adhesives, heat weld rod, cold weld and cleaning agents.

1.03 QUALITY ASSURANCE

- A. Manufacturer: Provide resilient flooring manufactured by a firm with a minimum of 10 years experience with resilient flooring of types equivalent to those specified. Manufacturers proposed for use, which are not named in this Section, shall submit evidence of ability to meet performance requirements specified not less than 10 days prior to bid date.
 - 1. Color Matching: Provide resilient flooring products, including wall base and accessories, from one manufacturer to ensure color matching.
 - 2. Manufacturer capable of providing field service representation.
- B. Installers Qualifications: Installer experienced (minimum of 3 years) to perform work of this section who has specialized in the installation of work similar to that required for this project and who is acceptable to the product manufacturer. List of flooring contractors is available on request, call 1-877-463-9376.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.
- B. Deliver materials sufficiently in advance of installation to condition materials to room temperature prior to installation.

1.05 PROJECT CONDITIONS

- A. Maintain a temperature of 68 degrees F (20 degrees C) plus or minus 5 degrees F (3 degrees C) in spaces to receive resilient flooring. Specified temperature shall be maintained at least 48 hours before, during, and 48 hours after installation.

1.06 WARRANTY

- A. Provide manufacturer's standard one-year warranty against defects in manufacturing and workmanship of resilient flooring products. Provide manufacturer's standard limited wear warranty/conductivity warranty as specified under each product as applicable.

1.07 EXTRA MATERIALS

- A. Furnish full size units equal to 2 percent of quantity of resilient flooring installed as extra materials. Properly label and package extra materials. Deliver to Owner's designated storage area.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

- A. Provide resilient flooring by **Ground Zero Electrostatics. – ElectraStat Rubber Flooring**, 4916 26th Street West Suite 100, Bradenton, FL 34207; telephone 877-463-9376, or 941-751-7581; fax 941-751-7586

2.02 RESILIENT TILE FLOORING

- D. Rubber Tile for ESD Protection Control: NTS: SELECT 2.02D ESD TILE FOR CLEAN ROOMS, ELECTRONIC MANUFACTURING
Commercial Traffic
 - 1. Product Name: **ElectroStat Rubber Flooring**, ESD control, electrically conductive, smooth surface, 2.5 mm (0.10 inches) thickness, 61 cm by 61 cm (24 inches by 24 inches) tile size. ElectroStat rubber content approximately 31%.
 - 2. Material: ElectroStat rubber with abundant natural fillers and environmentally compatible color pigments.
 - 3. Back of Tile: Smooth, sanded back.
 - 4. Limited Wear Warranty/
Conductivity Warranty: 5 year wear; 10 year conductivity.
 - 5. Standard: ASTM F 1344, for solid color homogeneous tiles and through-mottled tiles as applicable.
 - 6. Abrasion Resistance: Taber abrasion test, ASTM D 3389, H-18 wheel, 500 gram load, 1000 cycles, gram weight loss not greater than .70.
 - 7. Hardness: ASTM D 2240, Shore A, not less than 85.
 - 8. Slip Resistance: Static coefficient of friction (James Test): ASTM D 2047, equal to or greater than 0.6, ADA guidelines compliance.
 - 9. Asbestos-Free: Products shall contain no asbestos.
 - 10. Flammability: ASTM E 648; NFPA 253; NBSIR 75 950 result to be not less than 0.45 watts per square centimeter, Class 1.
 - 11. Smoke Density: ASTM E 662, NFPA 258, NBS smoke density, less than 450.
 - 12. Burn Resistance: Cigarette and solder burn resistance.
 - 13. Halogen-Free: Products shall contain no halogens.
 - 14. PVC-Free: Products shall contain no poly-vinyl-chloride.
 - 15. IAQ: Product shall meet GreenGuard requirements.
 - 16. Conductivity: 1×10^6 resistance to ground when tested according to ASTM F 150 and ESD.S7.1 under >30% relative humidity at room temperature.
 - 17. Decay Time: <.025 seconds for ElectroStat when tested according to FTM 4046 101.
 - 18. Static Generation: <20 volts when tested according to ESD STM 97.2.
 - 19. Color: As selected.

- E. Rubber Tile for Access Floor Panels: NTS: SELECT 2.02E FOR TILE FOR ACCESS FLOOR PANELS

1. Product Name: **ElectroStat Rubber Flooring**, smooth surface, static dissipative, tile size untrimmed 61.5 cm by 61.5 cm (24.2 inches by 24.2 inches), characteristics as specified under E.
2. Color: As selected.

B. Rubber Sheet for ESD Protection Control: NTS: SELECT 2.03B ESD SHEET GOOD FOR CLEAN ROOMS, ELECTRONIC MANUFACTURING, ETC.

1. Product Name: **ElectroStat Rubber Flooring**, ESD control, electrically conductive, 2.5 mm (0.10 inches) thickness, 12.0 m by 1.22 m (39.3 feet by 48 inches) roll size. ElectroStat rubber content approximately 31%.
2. Material: ElectroStat rubber with abundant natural fillers and environmentally compatible color pigments.
3. Limited Wear Warranty/
Conductivity Warranty: 5 year wear; 10 year conductivity.
4. Standard: ASTM F 1859 rubber sheet floor covering without backing.
5. Abrasion Resistance: Taber abrasion test, ASTM D 3389, H-18 wheel, 500 gram load, 1000 cycles, gram weight loss not greater than 0.70
5. Hardness: ASTM D 2240, Shore A, equal to or greater than 85.
6. Slip Resistance: Static coefficient of friction (James Test): ASTM D 2047, equal to or greater than 0.6, ADA guidelines compliance.
7. Asbestos-Free: Products shall contain no asbestos.
8. Flammability: ASTM E 648; NFPA 253; NBSIR 75 950 result to be not less than 0.45 watts per square centimeter, Class 1.
9. Smoke Density: ASTM E 662, NFPA 258, NBS smoke density, less than 450.
10. Burn Resistance: Cigarette and solder burn resistance.
11. Halogen-Free: Products shall contain no halogens.
12. PVC-Free: Products shall contain no poly-vinyl-chloride.
13. IAQ: Product shall meet GreenGuard requirements.
14. Conductivity: 1×10^6 resistance to ground when tested according to ASTM F 150 and ESD.S7.1 under >30% relative humidity at room temperature.
15. Decay Time: <.025 seconds when tested according to FTM 4046 101.
16. Static Generation: 20 volts when tested according to ESD STM 97.2.
17. Color: As selected.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that spaces to receive resilient flooring are suitable for installation. Do not proceed with work until unsatisfactory conditions are corrected. Comply with manufacturer's recommendations including the following:
 1. Substrates shall be dry and clean.
 2. Substrates shall be free of depressions, raised areas, or other defects which would telegraph through installed flooring.
 3. Temperature of resilient flooring and substrate shall be within specified tolerances.
 4. Moisture condition and adhesive bond tests shall be performed as specified.
- B. For applications on concrete, verify curing, hardening, or breaking compounds have not been used. If there are any, do not proceed until compounds have been removed as specified.

- C. For applications on concrete slab on grade or below grade, verify vapor barrier/retarder below slab was installed. If no vapor barrier was installed, do not proceed with work unless written acceptance of such conditions is received and submitted.
- D. Perform moisture condition test in each major area, minimum 1 per 1,000 square feet, prior to installation. Moisture condition shall not exceed 3 pounds per 1,000 square feet per 24 hour day, in accordance with ASTM F 1869. Do not proceed with work until results of moisture condition tests are acceptable.
- E. Perform adhesive bond test in each major area, minimum 1 per 1,000 square feet, prior to installation. Examine after 72 hours to determine whether bond is solid and no moisture is present. Do not proceed with work until results of bond test are acceptable.

3.02 PREPARATION

- A. Comply with ASTM F 710 and manufacturer's recommendations for surface preparation. Remove substances incompatible with resilient flooring adhesive by method acceptable to manufacturer.
 - 1. Concrete floors with steel troweled (slick) finish shall be properly roughened up (sanded) to ensure suitable adhesion.
 - 2. Concrete floors with curing, hardening, and breaking compounds shall be abraded with mechanical methods only to remove compounds. Use blastrac or similar equipment.
- B. Fill voids, cracks, and depressions with trowel-applied leveling compounds acceptable to manufacturer. Remove projections and repair other defects to tolerances acceptable to manufacturer.
- C. Vacuum subfloors immediately prior to installation to remove loose particles.

3.03 INSTALLATION

- A. Install resilient flooring in accordance with manufacturer's printed installation instructions. Comply with the following:
 - 1. Layout resilient flooring to provide equal size at perimeter. Adjust layout as necessary to eliminate resilient flooring which is cut to less than half full width.
 - 2. Lay resilient flooring with arrows in the same direction.
 - 3. Install resilient flooring without cracks or voids at seams. Lay seams together without stress. Remove excess adhesive immediately.
 - 4. Scribe resilient flooring neatly at perimeter and obstructions.
 - 5. Extend resilient flooring into reveals, closets, and similar openings.
 - 6. Install reducer strips at exposed edges.
 - 7. Do not mix manufacturing batches of a color within the same area.
 - 8. Do not install resilient flooring over building expansion joints.
 - 9. Do not install defective or damaged resilient flooring.
- B. Install resilient wall base in accordance with manufacturer's printed installation instructions. Install in longest practical lengths. Tightly adhere to substrate. Fill voids due to seams in substrate materials with manufacturer's recommended filler material.
- C. Install resilient stairtreads and accessories in accordance with manufacturer's printed installation instructions. Install reducer strips at exposed edges. Tightly adhere to substrate only where recommended by manufacturer. Fill voids due to seams in substrate materials with manufacturer's recommended filler material.
- D. ELECTRASTAT SEAMLESS FLOORING INSTALLATION (WHEN REQUIRED). Rout seams and heat weld

together with coordinated colored heat welding rod in accordance with resilient flooring manufacturer's recommendations.

- E. FLASH COVING OF SHEET GOOD (WHEN REQUIRED). Extend flooring up the wall in a flash-coved method to a height as indicated. Provide cove stick and manufacturer's recommended clip-on cap piece. Follow resilient flooring manufacturer's flash-coving instructions.

3.04 CLEANING AND PROTECTION

- A. Touch-up and repair minor damage to eliminate all evidence of repair. Remove and replace work which cannot be satisfactorily repaired.
- B. Clean surfaces only after adhesive has fully cured, no sooner than 72 hours after installation. Clean surfaces using non-abrasive materials and methods recommended by manufacturer. Remove and replace work that cannot be successfully cleaned.
- C. Protect completed work from damage and construction operations and inspect immediately before final acceptance of project.

END OF SECTION

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