**SECTION 09 65 19.23 – VINYL TILE FLOORING**

1. **GENERAL**
   1. SUMMARY
      1. SECTION INCLUDES:
         1. Glue Down Luxury Vinyl Tile (LVT)
         2. Adhesives
      2. RELATED SECTIONS
         1. Section 03300 - Cast-In-Place Concrete Floor substrate requirements
         2. Section 06200 - Rough Carpentry: Floor substrate requirements
   2. REFERENCES
      1. American Concrete Institute (ACI):
         1. ACI 302.2R - Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials
      2. American Society for Testing and Materials (ASTM):
         1. ASTM D2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine
         2. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
         3. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
         4. ASTM E662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
         5. ASTM F137 - Standard Test Method for Flexibility of Resilient Flooring Materials with Cylindrical Mandrel Apparatus
         6. ASTM F141 - Standard Terminology Relating to Resilient Floor Coverings
         7. ASTM F373 – Standard Test Method for Embossed Depth of Resilient Floor Covering
         8. ASTM F386 – Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces
         9. ASTM F410 – Standard Test Method for Wear Layer Thickness of Resilient Floor Coverings by Optical Measurement
         10. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
         11. ASTM F925 - Standard Test Method for Resistance to Chemicals of Resilient Flooring
         12. ASTM F970 - Standard Test Method for Static Load Limit
         13. ASTM F1482 – Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring
         14. ASTM F1514 - Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change
         15. ASTM F1515 – Standard Test Method for Measuring Light Stability of Resilient Flooring by Color Change
         16. ASTM F1700 – Standard Specification for Solid Vinyl Tile
         17. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
         18. ASTM F1914 - Standard Test Methods for Short-Term Indentation and Residual Indentation of Resilient Floor Covering
         19. ASTM F2055 – Standard Test Method for Size and Squareness of Resilient Floor Tile
         20. ASTM F2199 - Standard Test Method for Determining Dimensional Stability of Resilient Floor Tile after Exposure to Heat
         21. ASTM F2419 – Standard Practice for Installation of Thick Poured Concrete Underlayments and Preparation of the Surface to Receive Resilient Flooring
         22. ASTM F2471 – Standard Practice for Installation of Thick Poured Lightweight Cellular Concrete Underlayments and Preparation of the Surface to Receive Resilient Flooring
         23. ASTM F3191 - Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring
      3. State of California (CA)
         1. CA Section 01350 – Special Environmental Requirements (Indoor Air Quality)
      4. California Department of Public Health (CDPH)
         1. CDPH Standard Method v 1.2 - Standard Method for Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers
      5. California High Performance Schools (CHPS)
         1. CHPS Section 01350 - Low-Emitting Materials Criteria for Use in Classrooms.
      6. Declare™
         1. Product material disclosure labeling program.
      7. FloorScore®
         1. Indoor Air Quality (IAQ) certification for flooring materials, adhesives and underlayments.
      8. GREENGUARD® Gold
         1. Indoor Air Quality (IAQ) certification for flooring materials, adhesives and underlayments, which ensures compliance with CDPH Standard Method v 1.2, CA Section 01350 and UL 2818.
      9. Health Product Declaration Collaborative (HPDC)
         1. Health Product Declaration (HPD) material disclosure list.
      10. International Standards Organization (ISO)
          1. ISO 9001 – Quality Management Systems (QMS)
          2. ISO 14001 – Environmental Management Systems (EMS)
          3. ISO 14025 – Environmental Labels and Declarations
      11. Living Building Challenge (LBC)
          1. LBC Chemical Red List Version 3.1
      12. National Fire Protection Association (NFPA)
          1. NFPA 80 – Fire Safety Code
          2. NFPA 253 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
          3. NFPA 255 - Standard Test Method for Surface Burning Characteristics of Building Materials
          4. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth
      13. Occupational Health and Safety Administration
          1. OHSAS 180001 – Occupational Health and Safety Management
      14. Resilient Floor Covering Institute (RFCI)
          1. Recommended Work Practices for Removal of Resilient Floor Coverings
      15. Underwriters Laboratories (UL) Environment
          1. UL 410 – Slip Resistance of Floor Surface Materials
          2. Certified body of Environmental Product Declaration (EPD) and Environmental Management Systems (EMS), verified in accordance with ISO 9001, ISO 14001, ISO 14025 and OHSAS 18001.
   3. SUBMITTALS
      1. General: Submittals must be submitted the under provisions of Section 01300.
      2. Product Data: Manufacturer's published documents on each product to be used, including:
         1. Technical Data & Installation Instructions
         2. Maintenance Guide
         3. Product Warranty
         4. Material Usage Guide Technical Bulletin
         5. Wet Area Installation Technical Bulletin
         6. Additional Technical Documents
            1. Relevant test reports
            2. Relevant technical bulletins
            3. Additional recommendations or requirements
      3. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
      4. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square or one full tile, representing actual product, color, and patterns.
   4. SUSTAINABILITY REQUIREMENTS
      1. VOC Content & Emissions
         1. Provide building materials that comply with CA Section 01350, CHPS Section 01350, ANSI/BIFMA M7.1 and ANSI/BIFMA X7.1 when tested in accordance with CDPH Standard Method v 1.2.
         2. Provide building materials that comply with CA Section 01350, CHPS Section 01350 and UL 2818 when tested in accordance with the UL 2821 test method.
         3. Provide third-party certification that confirms compliance, such as a FloorScore, Indoor Advantage Gold or GREENGUARD Gold certification.
      2. Product Material Ingredient Disclosure
         1. Provide third party certification that confirms material ingredients of the product, such as a HPD or Declare Label
            1. Health Product Declaration (HPD)

Provide HPDs that have been verified by the HPDC.

* + - * 1. LBC Chemical Red List 3.1

Provide building materials that are Red List Verified in accordance the LBC Chemical Red List 3.1.

Provide full material disclosure or third-party certification that confirms compliance, such as Declare labeling.

* + 1. Environmental Product Declaration (EPD)
       1. Provide EPDs that are independently verified by a qualifying body (such as UL) and compliant with ISO 14025.
  1. QUALITY ASSURANCE
     1. Qualifications:
        1. Installer Qualifications: Installer must be a professional, licensed and experienced installer. Installer must have familiarity with both the type, size and format of the product.
        2. Manufacturer’s Qualifications
           1. Manufacturer must be ISO 9001, ISO 14001 and OHSAS 18001 compliant.
           2. Manufacturer must provide remote and field technical support and service prior to, during and following installation, as necessary.
     2. Mock-Up:
        + 1. Provide a mock-up for evaluation of product, surface preparation techniques and installation workmanship.
          2. Do not proceed with remaining work until size, color, thickness, sheen and workmanship are approved by Architect, End-User and/or other stakeholders.
          3. Maintain mock-up area as required in accordance with Product Data to produce acceptable work.
  2. DELIVERY HANDLING & STORAGE
     1. Ordering: Comply with manufacturer’s ordering and lead time requirements to avoid construction delays.
     2. Receiving Material: Remove all plastic and strapping from product after delivery. Confirm that the flooring product color, style, quantity and lot numbers are all correct. Carefully check all materials for shipping damage and note all damage on the bill of lading before accepting the delivery. Material accepted with visible shipping damage that is not reported on the bill of lading is not covered under warranty. Ensure that the adhesive intended for installation is approved for use with the flooring product.
     3. Storage: The floor covering, adhesive and accessories must be stored in dry indoors conditions between 40°F to 90°F (4°C to 32°C). Do not store outside (even in containers) and do not stack pallets. Deliver all materials to the installation location in its original packaging with labels intact.
     4. Acclimation: The temperature for the installation must match the temperature when the product will be in use (in-service temperature) and be constant (± 5°F). In addition, ambient temperatures must be between 60°F (16°C) and 80°F (27°C) for ≥ 48-hours before, during and after the installation. The ambient relative humidity must be between 35% and 65% and ≥ 10°F above dew point (dew point calculators are available on the internet), or adhesive working and/or curing times will be severely affected.
  3. PROJECT CONDITIONS
     + 1. Environmental Conditions: Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer in accordance with the Product Data. Do not install products under environmental conditions outside manufacturer's absolute requirements.
     1. WARRANTY
        1. Project Warranty: Refer to Conditions of Contract for project warranty provisions.
        2. Manufacturer’s Warranty:
           1. When used in accordance with the AVA Material Usage Guide, AVA STRM LVT shall comply with all written specifications and be free from Manufacturing Defects and wear-through for the following periods:

Residential: Lifetime from the date of purchase.

Heavy Commercial: Twenty (20) years from date of purchase.

1. **PRODUCTS**
   1. PRODUCT MANUFACTURERS
      1. Acceptable Manufacturer:
         1. AVA by Novalis Innovative Flooring

200 Munekata Dr SE

Dalton, GA 30721

P: 877.861.5292  
E: sales@avaflor.com

Web: www.avaflor.com

* 1. SUBSTITUTIONS
     + 1. \*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.
     1. Substitutions: Not permitted.
     2. Requests for substitutions will be considered in accordance with provisions of Division 01.
  2. PRODUCT DIMENSIONS

\*\* NOTE TO SPECIFIER \*\* Delete products and sizes not required.

* + 1. Product: AVA STRM Luxury Vinyl Tile (LVT) as manufactured by Novalis Innovative Flooring.
       1. LVT Sizes (all sizes nominal):
          1. 9.84 inches by 39.37 inches by 0.098 inches (249.94 mm by 999.98 mm by 2.5 mm)
  1. PRODUCT COLOR

\*\* NOTE TO SPECIFIER \*\* Delete colors not required.

* + 1. STR011
    2. STR011L
    3. STR012
    4. STR012L
    5. STR013
    6. STR013L
    7. STR021
    8. STR021L
    9. STR022
    10. STR022L
    11. STR023
    12. STR023L
    13. STR024
    14. STR024L
    15. STR025
    16. STR025L
    17. STR031
    18. STR031L
    19. STR032
    20. STR032L
    21. STR041
    22. STR041L
    23. STR051
    24. STR051L
  1. PHYSICAL CHARACTERISTICS

\*\* NOTE TO SPECIFIER \*\* Delete surfaces not required.

* + 1. Surface: Embossed With Straight Edge
    2. ASTM F1700 – Solid Vinyl Tile:
       1. Classification: Class III, Type B
       2. ASM F2055 – Size: Passes, ± 0.4 mm
       3. ASTM F387 – Thickness of Resilient Flooring: Passes, ± 0.13 mm
       4. ASTM F410 – Wear Lay Thickness: Passes, ≥ 0.5 mm
       5. ASTM F2055 – Squareness: Passes, ± 0.25 mm
       6. ASTM F1914 – Residual Indentation: Passes, <0.2 mm
       7. ASTM F137 – Flexibility: Passes, 25.4 mm mandrel
       8. ASTM F2199 – Dimensional Stability: Passes, <0.05 mm/ lin. ft.
       9. ASTM F925 – Chemical Resistance: Passes ASTM F1700 Requirements
          1. White vinegar (5% Acetic Acid) - Passes.
          2. Rubbing Alcohol (70% Isopropyl Alcohol) - Passes.
          3. Lye (5% Sodium Hydroxide) - Passes.
          4. Hydrochloric Acid (5% HCI) - Passes.
          5. Sulfuric Acid (5%H2SO4) - Passes.
          6. Household Ammonia (5% Ammonia) - Passes.
          7. Disinfectant Cleaner (5% Active Phenol) - Passes.
          8. Household Bleach (5.25% NaOCl) - Passes.
          9. Unleaded Gasoline - Passes.
          10. Kerosene - Passes.
          11. Olive Oil - Passes.
       10. ASTM F1514 – Color Heat Stability: Passes, ΔE<8
       11. ASTM F1515 – Color Light Stability: Passes, ΔE<8
       12. ASTM F970 – Static Load Limit: Passes, ≤ 0.5 mm indent, 250 lbs.
       13. ASTM F970 – Modified for Max Weight: ≤ 0.5 mm indent, 1,600 lbs.
    3. ASTM E648 (NFPA 253) – Critical Radiant Flux: Class I, > 0.45 W/cm2
    4. ASTM E662 (NFPA 258) – Smoke Density: Passes, <450
    5. ASTM D2047 / UL 410 – Slip Resistance: >0.5 SCOF
    6. ASTM E492 / E989 – Impact Insulation: IIC 52 w/ Novalis 22-SCU (6 in. Concrete)
    7. ASTM E90 / E413 – Sound Transmission: STC 54 w/ Novalis 22-SCU (6 in. Concrete)
    8. ASTM E2179 – Delta Impact Insulation: ΔIIC 23 w/ Novalis 22-SCU (6 in. Concrete)
  1. PRODUCT ADHESIVE

\*\* NOTE TO SPECIFIER \*\* Delete adhesive not required.

* + 1. Only Novalis approved adhesives shall be used when installing STRM LVT.
       1. Novalis NV-GLU Acrylic Adhesive
       2. Gold Series MW 3012 MS Resilient Flooring Adhesive.

1. **EXECUTION**

\*\* NOTE TO SPECIFIER \*\* Revise articles below to suit specific project requirements.

* 1. MANUFACTURERS INSTRUCTIONS
     1. Compliance: Review and comply with manufacturer’s technical data sheets, installation instructions, maintenance documents, warranty information, technical bulletins and all other written technical documents, specifications and communications.
  2. EXAMINATION
     1. Site Verification of Conditions:
        1. Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer’s Product Data.
        2. Do not begin installation until all substrates have been properly tested and prepared in accordance with STRM LVT Product Data and all applicable industry standards.
        3. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
  3. PREPARATION
     1. Cleaning: Clean surfaces thoroughly prior to installation.
     2. Substrate Preparation: Prepare surfaces in accordance with substrate preparation requirements published in STRM LVT Product Data.
  4. INSTALLATION
     1. Flooring Installation: Install materials in accordance with installation instructions published in AVA STRM LVT Product Data.
     2. Traffic Limits: No traffic, cleaning, finishing or placement of furniture should occur in accordance with adhesive traffic limits published in adhesive Product Data.
     3. Initial Maintenance: Once adhesive has cured, perform initial maintenance in accordance with initial maintenance instructions published in STRM LVT Product Data.
  5. MAINTENANCE
     1. Daily Maintenance: Long-term care and maintenance must be performed in accordance with daily and routine maintenance instructions published in STRM LVT Product Data.
  6. PROTECTION
     1. Temporary Floor Protection: Protect installed products until completion of project in accordance with flooring or material protection requirements published in STRM LVT Product Data.
     2. Repair: Touch-up, repair or replace damaged products before Substantial Completion.
     3. Permanent Floor Protection: Ensure furniture feet/bottom, glides and chair casters dimensions and materials are in accordance with floor protection requirements published in AVA STRM LVT Product Data prior to Substantial Completion.

**END OF SECTION**