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DIVISION 9 - SECTION 09 60 00.11
AttainSilence: Attain Luxury Vinyl plank/Tile for use over ECOsilence Recycled Rubber Underlayment
US Patent No. RE 41,945

PART 1.0 - GENERAL

1.1 SUMMARY

A. The work of this section includes:
   1. Types of rebounded recycled rubber Impact Sound Insulation to be placed under LVT.
   2. Adhesives

B. Related Sections: Section(s) related to this section include:
   1. Concrete Substrate
   2. Plywood Substrate:
   3. Tile
   4. Carpeting
   5. Noise Control and Vibration Isolation

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard but is merely a listing of references used. Article below should list only those industry standards used in this section.

1.2 REFERENCES

A. Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. American Society for Testing and Materials (ASTM):
   1. ASTM E1007 Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structures
   2. ASTM E2179 Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors
   3. ASTM E492 Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine
   4. ASTM E413 Classification for Rating Sound Insulation
   5. ASTM D5116 Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products
   6. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
   7. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes
   8. ASTM D2047: Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as measured by the James Machine

9. ASTM F970: Standard Test Method for Static Load Limit
10. ASTM F1514: Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change
11. ASTM F1515: Standard Test Method for Measuring Light Stability of Resilient Flooring by Color Change
12. ASTM F925: Standard Test Method for Resistance to Chemicals of Resilient Flooring
13. ASTM F2753: Standard Practice to Evaluate the Effect of Dynamic Rolling Load over Resilient Floor Covering System
14. ASTM F2055 - Standard Test Method for Size and Squareness of Resilient Floor Tile
15. ASTM F386 - Standard Test Method for Thickness of Resilient Flooring Materials
16. ASTM D3389: Standard Test Method for Coated Fabrics Abrasion Resistance
17. ASTM D2240 Standard Test Method for Rubber Property—Durometer Hardness
18. ASTM F2199 Dimensional stability
19. ASTM F36 Standard Test Method for Compressibility and Recovery of Gasket Materials
20. ASTM E648 Behavior to Fire
21. ASTM D6962 Standard Practice for Operation of a Roller Chair Tester for Pile Yarn Floor Coverings
22. ASTM E662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials

C. European Committee for Standardization (EN)

1. EN649 Resilient Floor Coverings Heterogeneous polyvinyl chloride floor coverings – Specification for Abrasion Resistance.

D. International Organization for Standardization (ISO)

1. ISO 105-B02 Textiles - Tests for color fastness - Part B02: Color fastness to artificial light: Xenon arc fading lamp test

E. South Coast Air Quality Management District (SCAQMD) Rule #1168

1. VOC standards for adhesive and sealant applications

F. Leadership in Energy and Environmental Design – LEED®

1. International Organization for Standardization® document, ISO 14021 - Provides guidance on the terminology, symbols, testing and verification methodologies that an organization should use for self-declaration of the environmental aspects of its products and services.

1.3 SYSTEM DESCRIPTION

A. Performance Requirements: Provide recycled rubber resilient flooring and LVT, which has been manufactured and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.

1.4 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. LEED: Provide documentation of how the requirements for credit will be met.

1. List of proposed materials with recycled content. Indicate pre-consumer and post-consumer content.
2. Product data and certification letter indicating percentage of recycled content for both pre-consumer and post-consumer content.
3. Recycled content is defined in accordance with the International Organization for Standardization document, ISO 14021 Environmental labels and declarations.

a. Post-consumer material - waste materials diverted from the waste stream after consumer or commercial use.

b. Pre-consumer material - materials diverted from the waste stream during the manufacturing process. Excluded are regrind, rework, and scrap.

C. Product Data: Submit product data, including manufacturer's guide specifications product sheet, for specified products.

D. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors, patterns and textures.

E. Samples: Submit selection and verification samples for finishes, colors and textures.

F. Quality Assurance Submittals: Submit the following:

1. Certificates: If required, certification of performance characteristics specified in this document shall be provided by the manufacturer.
2. Manufacturer's Instructions: Manufacturer's installation instructions.

G. Closeout Submittals: Submit the following:

1. Warranty: Warranty documents specified herein.

1.5 QUALITY ASSURANCE

A. Qualifications:

1. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
   a. Certificate: When requested, submit certificate indicating qualification.
2. Manufacturer's Qualifications: Manufacturer capable of providing field service representation during construction and approving application method.

B. Regulatory Requirements: [specify applicable requirements of regulatory agencies].

C. Mock-Ups: Install at project site a job mock-up using acceptable products and manufacturer-approved installation methods. Obtain Owner and Architect's acceptance of finish color, texture and pattern, and workmanship standard. Comply with Division 1 Quality Control (Mock-Up Requirements) Section.

1. Mock-Up Size: [specify mock-up size].
2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

D. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

E. Pre-installation Testing: Conduct pre-installation testing as follows: [specify substrate testing; consult with flooring manufacturer].

1.6 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirements Sections.

B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Storage and Protection: Store materials at temperature and humidity conditions recommended by manufacturer and protect from exposure to harmful weather conditions.

1.7 PROJECT CONDITIONS

A. Temperature Requirements: Maintain air temperature in spaces where products will be installed for time period before, during and after installation as recommended by manufacturer.

B. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

1.8 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not a limitation of, other rights Owner may have under Contract Documents.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements.

1. Warranty Period: [Specify term] years commencing in Date of Substantial Completion.

1.9 MAINTENANCE

A. Extra Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals (Maintenance Materials) Section.

Specifier Note: Revise paragraph below specifying size and percentage as required for project.

1. Quantity: Furnish quantity of recycled rubber and Luxury Vinyl Tile and Plank flooring units equal to [specify %] of amount installed.

2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra materials.

PART 2.0 - PROPRIETARY MANUFACTURER/PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards, and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.1 MANUFACTURER: Ecore

A. Address: 715 Fountain Ave., Lancaster, PA 17601; Telephone: (800) 322-1923, (717) 295-3400; Fax: (717) 295-3414; Email: info@ecoreintl.com

2.2 PROPRIETARY PRODUCT(S)

A. ECOsilence® Recycled Rubber Underlayment and Adhesives manufactured by Ecore for interior commercial applications.

1. E-Grip Evolve high performance wet set acrylic adhesive
2. ECOsilence Polyethylene Foam Perimeter Isolation Strip
3. AttainSilence 2.0.2 luxury vinyl tile/plank field applied to ECOsilence2
4. AttainSilence 2.0.5 luxury vinyl tile/plank field applied to ECOsilence5
5. AttainSilence 2.5.2 luxury vinyl tile/plank field applied to ECOsilence2
6. AttainSilence 2.5.5 luxury vinyl tile/plank field applied to ECOsilence5
7. AttainSilence 4.2.1 luxury vinyl tile/plank field applied to ECOsilence1

2.3.1 E-Grip Evolve High Performance wet set acrylic adhesive

A. Product Name**:** The High Performance, wet set, acrylic adhesive under this specification shall be Egrip-Evolve.

B. Material: E-Grip Evolve is a high performance, wet set acrylic adhesive designed for use with ECOsilence sound underlayment and Ecore's Attain Luxury Vinyl Tile and Plank.

C.	Adhesive Type:	Vinyl Acrylic Polymer
D.	Weight:	4 gallon pail (34 lbs), 1 gallon pail (9 lbs)
E.	Color:	Off-white
F.	VOC Content:	.28 lbs/gal (34 g/l)
G.	Freeze/Thaw:	protect from freezing, stable up to 5 cycles at 0°F (-18°C)
H.	Calcium Chloride Test: (ASTM F1869)	Maximum 5 lbs per 1,000 sq. ft. in 24 hrs.
I.	Relative Humidity (RH) Test (ASTM F2170)	Maximum 80%
J.	Flashpoint:	> 212° F (100° C)
K.	Shelf Life:	2 years when stored at 73° F (23° C)

2.3.2 QT Polyethylene Foam Perimeter Isolation Strip

A.	Product Name:	The single-ply white polyethylene foam perimeter isolation strip under this specification shall be Ecore's Polyethylene Foam Perimeter Isolation Strip.
B.	Material:	Made from white polyethylene foam, Perimeter Isolation Strip is a flat, resilient strip that is used around the perimeter wall, so no hard surface (floor covering) touches any hard vertical surface (protrusion or wall).
C.	Sheet Dimension:	Perimeter isolation strip will have an overall thickness of 15/64" [6mm] in 2 ½" by 50' [64mm by 1,5240mm]

2.3.3 AttainSilence 2.0.2 System – Attain Luxury Vinyl Plank/Tile field applied to 2mm ECOsilence2

A.	Product Name:	ECOsilence2 recycled rubber sound insulation underlayment . Attain 2mm luxury vinyl plank/tile
B.	Material:	Attain Luxury Vinyl Plank/Tile is made of flexible PVC with a 0.07mm print film layer; 1.73mm backing; and a 0.20mm clear PVC wear layer containing a polyurethane coating. ECOsilence is made from a formulation of high quality post-consumer recycled rubber granules encapsulated in a wear and water resistant elastomeric network with multiple colored reprocessed ColorMill™ EPDM rubber.
C.	Product Dimensions:	Attain Luxury Vinyl Plank (wood visual) - 2.0mm thickness; 6" width; 36" length Attain Luxury Vinyl Tile (texture visual) - 2.0mm thickness; 18" width; 18" length ECOsilence 2.0mm rolled rubber underlayment - 4' W x 75 LF
D.	Product Weights:	Attain Luxury Vinyl Plank (wood visual) - 0.90lbs/plank Attain Luxury Vinyl Tile (texture visual) – 1.35 lbs/tile ECOSilence2 2.0mm rolled rubber underlayment - 0.37 lb/ft² [1.2mm by 22.9m]
E.	Plank/Tile Tolerances: (ASTM F2055) (ASTM F386)	Size: ± 0.016 in./lin. Ft (0.4 mm/305 mm Squareness: maximum 0.010 in. (0.25mm) Thickness: ± 0.005 in. (0.13 mm)
F.	ECOsilence Tolerances:	Roll width: + ½" – ¼" Roll length: +1% - 0" Thickness: ± 0.4 mm

G.	Laboratory Impact Insulation Class: (ASTM E492)	Specified floor-ceiling assembly must be tested in an ASTM compliant laboratory accredited by an ILAC-recognized accreditation body such as IAS or NVLAP (per ISO/IEC17025). 2mm thickness shall be tested over a 6" concrete slab with 2mm LVT Plank, Double Glue using E-Grip Evolve, no ceiling, with an IIC rating of 48 or greater.
H.	Sound Transmission Class (ASTM E90)	Rating of 50 or greater over 6" concrete slab with 2mm LVT
I.	Field Impact Insulation Class: (ASTM E1007)	Floor-ceiling assembly must meet requirement as stated by building code and/or acoustical consultant.
J.	Delta IIC: (ASTM E2179)	If required, specified floor assembly must be tested in an ASTM-compliant laboratory accredited by an ILAC-recognized accreditation body such as IAS or NVLAP (per ISO/IEC17025). Shall specify floor finish and shall be tested over a 6" concrete slab with no ceiling.
K.	Abrasion Resistance: (ASTM D3389)	Pass
L.	Resistance to Light: (ASTM F1515/ISO 105-B02)	$\Delta E < 8.0$ after 400 hours
M.	Resistance to Heat: (ASTM F1514)	$\Delta E < 8.0$ after 400 hours
N.	Hardness (Shore A): (ASTM D2240)	97
O.	Dimensional Stability: (ASTM F2199)	MD= 0.10%, AMD=0.10%
P.	Static Load Limit @ 250 psi (ASTM F970)	0.004"
Q.	Compression @ 100 psi: (ASTM F36)	6%
R.	Recovery @ 100 psi: (ASTM F36)	80%
S.	Slip Resistance: (ASTM D2047)	>0.5
T.	Chemical Resistance:	5 min. & 24-hr. -- very slight surface dulling for conc. Sulfuric acid; 24-hr -- iodine stain
U.	Force Reduction: (Deltec Field Tester)	2.30%
V.	Energy Restitution: (deltec Field Tester)	78.20%
W.	Vertical Deformation:	0.8mm
X.	Critical Radiant Flux: (ASTM EW648/NRPA 253)	1.03 W/cm², Class 1
Y.	Chair Casters: (ASTM D6962BS/EN985)	Excellent
Z.	Dynamic Rolling Load: (ASTM F2753)	0.010" indent/seam intact, slight gloss change
AA.	VOC: (ASTM D5116)	Pass

2.3.4 AttainSilence 2.0.5 System – Attain Luxury Vinyl Plank/Tile field applied to 5mm ECOsilence5

A.	Product Name**:**	ECOsilence5 recycled rubber sound insulation underlayment . Attain 2mm luxury vinyl plank/tile
B.	Material:	Attain Luxury Vinyl Plank/Tile is made of flexible PVC with a 0.07mm print film layer; 1.73mm backing; and a 0.20mm clear PVC wear layer containing a polyurethane coating. ECOsilence is made from a formulation of high quality post-consumer recycled rubber granules encapsulated in a wear and water resistant elastomeric network with multiple colored reprocessed ColorMill™ EPDM rubber.
C.	Product Dimensions:	Attain Luxury Vinyl Plank (wood visual) - 2.0mm thickness; 6" width; 36" length Attain Luxury Vinyl Tile (texture visual) - 2.0mm thickness; 18" width; 18" length ECOsilence 5.0mm rolled rubber underlayment - 4' W x 30 LF
D.	Product Weights:	Attain Luxury Vinyl Plank (wood visual) - 0.90lbs/plank Attain Luxury Vinyl Tile (texture visual) – 1.35 lbs/tile ECOSilence5 5.0mm rolled rubber underlayment - 0.84 lb/ft² [1.2mm by 9.1m]
E.	Plank/Tile Tolerances: (ASTM F2055) (ASTM F386)	Size: ± 0.016 in./lin. Ft (0.4 mm/305 mm Squareness: maximum 0.010 in. (0.25mm) Thickness: ± 0.005 in. (0.13 mm)
F.	ECOsilence Tolerances:	Roll width: + ½" – ¼" Roll length: +1% - 0" Thickness: ±.0.4 mm
G.	Laboratory Impact Insulation Class: (ASTM E492)	Specified floor-ceiling assembly must be tested in an ASTM compliant laboratory accredited by an ILAC-recognized accreditation body such as IAS or NVLAP (per ISO/IEC17025). 5mm thickness shall be tested over a 6" concrete slab with 2mm LVT Plank, Double Glue using E-Grip Evolve, no ceiling, with an IIC rating of 51 or greater.
H.	Sound Transmission Class (ASTM E90)	Rating of 52 or greater over 8" concrete slab with 2mm LVT
I.	Field Impact Insulation Class: (ASTM E1007)	Floor-ceiling assembly must meet requirement as stated by building code and/or acoustical consultant.
J.	Delta IIC: (ASTM E2179)	If required, specified floor assembly must be tested in an ASTM-compliant laboratory accredited by an ILAC-recognized accreditation body such as IAS or NVLAP (per ISO/IEC17025). Shall specify floor finish and shall be tested over a 6" concrete slab with no ceiling.
K.	Abrasion Resistance: (ASTM D3389)	Pass
L.	Resistance to Light: (ASTM F1515/ISO 105-B02)	$\Delta E < 8.0$ after 400 hours
M.	Resistance to Heat: (ASTM F1514)	$\Delta E < 8.0$ after 400 hours
N.	Hardness (Shore A): (ASTM D2240)	97

O.	Dimensional Stability: (ASTM F2199)	MD= 0.37%, AMD=0.34%
P.	Static Load Limit @ 250 psi (ASTM F970)	0.011”
Q.	Compression @ 100 psi: (ASTM F36)	12%
R.	Recovery @ 100 psi: (ASTM F36)	88%
S.	Slip Resistance: (ASTM D2047)	>0.5
T.	Chemical Resistance:	5 min. & 24-hr. -- very slight surface dulling for conc. Sulfuric acid; 24-hr -- iodine stain
U.	Force Reduction: (Deltec Field Tester)	9.90%
V.	Energy Restitution: (deltec Field Tester)	71.70%
W.	Vertical Deformation:	1.1mm
X.	Critical Radiant Flux: (ASTM EW648/NRPA 253)	1.07 W/cm², Class 1
Y.	Chair Casters: (ASTM D6962BS/EN985)	Worn thru after 2500 cycles
Z.	Dynamic Rolling Load: (ASTM F2753)	0.019” indent/seam intact, slight gloss change
AA.	VOC: (ASTM D5116)	Pass

2.3.5 AttainSilence 2.5.2 System – Attain Luxury Vinyl Plank/Tile field applied to 2mm ECOsilence2

A.	Product Name**:**	ECOsilence2 recycled rubber sound insulation underlayment . Attain 2.5mm luxury vinyl plank/tile
B.	Material:	Attain Luxury Vinyl Plank/Tile is made of flexible PVC with a 0.07mm print film layer; 1.93mm backing; and a 0.50mm clear PVC wear layer containing a polyurethane coating. ECOsilence is made from a formulation of high quality post-consumer recycled rubber granules encapsulated in a wear and water resistant elastomeric network with multiple colored reprocessed ColorMill™ EPDM rubber.
C.	Product Dimensions:	Attain Luxury Vinyl Plank (wood visual) - 2.5mm thickness; 6" width; 36" length Attain Luxury Vinyl Tile (texture visual) - 2.5mm thickness; 18" width; 18" length ECOsilence 2.0mm rolled rubber underlayment - 4' W x 75 LF
D.	Product Weights:	Attain Luxury Vinyl Plank (wood visual) - 1.20lbs/plank (Dark Ash 7’ x 48’ = 1.60 lbs/plank) Attain Luxury Vinyl Tile (texture visual) – 1.80 lbs/tile ECOSilence2 2.0mm rolled rubber underlayment - 0.37 lb/ft² [1.2mm by 22.9m]
E.	Plank/Tile Tolerances: (ASTM F2055) (ASTM F386)	Size: ± 0.016 in./lin. Ft (0.4 mm/305 mm Squareness: maximum 0.010 in. (0.25mm) Thickness: ± 0.005 in. (0.13 mm)
F.	ECOsilence Tolerances:	Roll width: + ½” – ¼” Roll length: +1% - 0” Thickness: ±.0.4 mm

G.	Laboratory Impact Insulation Class: (ASTM E492)	Specified floor-ceiling assembly must be tested in an ASTM compliant laboratory accredited by an ILAC-recognized accreditation body such as IAS or NVLAP (per ISO/IEC17025). 2mm thickness shall be tested over a 8” concrete slab with 2.5mm LVT Plank, Double Glue using E-Grip Evolve, no ceiling, with an IIC rating of 51 or greater. Same assembly with drop ceiling, with an IIC rating of 66 or greater.
H.	Sound Transmission Class (ASTM E90)	Rating of 54 or greater over 8” concrete slab with 2.5mm LVT Rating of 64 with drop ceiling, 8” concrete slab, 2.5mm LVT
I.	Field Impact Insulation Class: (ASTM E1007)	Floor-ceiling assembly must meet requirement as stated by building code and/or acoustical consultant.
J.	Delta IIC: (ASTM E2179)	If required, specified floor assembly must be tested in an ASTM-compliant laboratory accredited by an ILAC-recognized accreditation body such as IAS or NVLAP (per ISO/IEC17025). Shall specify floor finish and shall be tested over a 6” concrete slab with no ceiling.
K.	Abrasion Resistance: (ASTM D3389)	Pass
L.	Resistance to Light: (ASTM F1515/ISO 105-B02)	$\Delta E < 8.0$ after 400 hours
M.	Resistance to Heat: (ASTM F1514)	$\Delta E < 8.0$ after 400 hours
N.	Hardness (Shore A): (ASTM D2240)	96
O.	Dimensional Stability: (ASTM F2199)	MD= 0.14%, AMD=0.06%
P.	Static Load Limit @ 250 psi (ASTM F970)	0.006”
Q.	Compression @ 100 psi: (ASTM F36)	5%
R.	Recovery @ 100 psi: (ASTM F36)	78%
S.	Slip Resistance: (ASTM D2047)	>0.5
T.	Chemical Resistance:	5 min. & 24-hr. -- very slight surface dulling for conc. Sulfuric acid; 24-hr -- iodine stain
U.	Force Reduction: (Deltec Field Tester)	3.50%
V.	Energy Restitution: (Deltec Field Tester)	73.80%
W.	Vertical Deformation: (Deltec Field Tester)	0.8mm
X.	Critical Radiant Flux: (ASTM EW648/NRPA 253)	1.01 W/cm², Class 1
Y.	Smoke Density: (ASTM E662)	Pass
Z.	Chair Casters: (ASTM D6962BS/EN985)	Good – Slight change

AA.	Dynamic Rolling Load: (ASTM F2753)	0.013” indent/seam intact, slight gloss change
BB.	VOC: (ASTM D5116)	Pass

2.3.6 AttainSilence 2.5.5 System – Attain Luxury Vinyl Plank/Tile field applied to 5mm ECOsilence5

A.	Product Name**:**	ECOsilence5 recycled rubber sound insulation underlayment . Attain 2.5mm luxury vinyl plank/tile
B.	Material:	Attain Luxury Vinyl Plank/Tile is made of flexible PVC with a 0.07mm print film layer; 1.93mm backing; and a 0.50mm clear PVC wear layer containing a polyurethane coating. ECOsilence is made from a formulation of high quality post-consumer recycled rubber granules encapsulated in a wear and water resistant elastomeric network with multiple colored reprocessed ColorMill™ EPDM rubber.
C.	Product Dimensions:	Attain Luxury Vinyl Plank (wood visual) - 2.5mm thickness; 6" width; 36" length Attain Luxury Vinyl Plank (wood visual-Dark Ash) -2.5mm thickness; 7” width; 48” length Attain Luxury Vinyl Tile (texture visual) - 2.5mm thickness; 18" width; 18" length ECOsilence 5.0mm rolled rubber underlayment - 4' W x 30 LF
D.	Product Weights:	Attain Luxury Vinyl Plank (wood visual) - 1.20lbs/plank (Dark Ash 7’ x 48’ = 1.60 lbs/plank) Attain Luxury Vinyl Tile (texture visual) – 1.80 lbs/tile ECOSilence5 5.0mm rolled rubber underlayment - 0.84 lb/ft² [1.2mm by 9.1m]
E.	Plank/Tile Tolerances: (ASTM F2055) (ASTM F386)	Size: ± 0.016 in./lin. Ft (0.4 mm/305 mm Squareness: maximum 0.010 in. (0.25mm) Thickness: ± 0.005 in. (0.13 mm)
F.	ECOsilence Tolerances:	Roll width: + ½” – ¼” Roll length: +1% - 0” Thickness: ±.0.4 mm
G.	Laboratory Impact Insulation Class: (ASTM E492)	Specified floor-ceiling assembly must be tested in an ASTM compliant laboratory accredited by an ILAC-recognized accreditation body such as IAS or NVLAP (per ISO/IEC17025). 5mm thickness shall be tested over a 8” concrete slab with 2.5mm LVT Plank, Double Glue using E-Grip Evolve, no ceiling, with an IIC rating of 54 or greater. Same assembly with drop ceiling, with an IIC rating of 69 or greater.
H.	Sound Transmission Class (ASTM E90)	Rating of 56 or greater over 8” concrete slab with 2.5mm LVT Rating of 64 with drop ceiling, 8” concrete slab, 2.5mm LVT
I.	Field Impact Insulation Class: (ASTM E1007)	Floor-ceiling assembly must meet requirement as stated by building code and/or acoustical consultant.
J.	Delta IIC: (ASTM E2179)	If required, specified floor assembly must be tested in an ASTM-compliant laboratory accredited by an ILAC-recognized accreditation body such as IAS or NVLAP (per ISO/IEC17025). Shall specify floor finish and shall be tested over a 6” concrete slab with no ceiling.
K.	Abrasion Resistance: (ASTM D3389)	Pass
L.	Resistance to Light: (ASTM F1515/ISO 105-B02)	$\Delta E < 8.0$ after 400 hours
M.	Resistance to Heat: (ASTM F1514)	$\Delta E < 8.0$ after 400 hours

N.	Hardness (Shore A): (ASTM D2240)	96
O.	Dimensional Stability: (ASTM F2199)	MD= 0.27%, AMD=0.15%
P.	Static Load Limit @ 250 psi (ASTM F970)	0.009”
Q.	Compression @ 100 psi: (ASTM F36)	11%
R.	Recovery @ 100 psi: (ASTM F36)	84%
S.	Slip Resistance: (ASTM D2047)	>0.5
T.	Chemical Resistance:	5 min. & 24-hr. -- very slight surface dulling for conc. Sulfuric acid; 24-hr -- iodine stain
U.	Force Reduction: (Deltec Field Tester)	12.10%
V.	Energy Restitution: (Deltec Field Tester)	65.60%
W.	Vertical Deformation: (Deltec Field Tester)	1.2mm
X.	Critical Radiant Flux: (ASTM EW648/NRPA 253)	0.88 W/cm², Class 1
Y.	Smoke Density: (ASTM E662)	Pass
Z.	Chair Casters: (ASTM D6962BS/EN985)	Delaminated at 22,500 cycles
AA.	Dynamic Rolling Load: (ASTM F2753)	0.024” indent/seam intact, slight gloss change
BB.	VOC: (ASTM D5116)	Pass

2.3.7 AttainSilence 4.2.1 System – Attain Luxury Vinyl Plank/Tile field applied to 1mm ECOsilence1

A.	Product Name**:**	ECOsilence1 recycled rubber sound insulation underlayment . Attain 4.2mm luxury vinyl plank/tile
B.	Material:	Attain Luxury Vinyl Plank/Tile is made of flexible PVC with a 0.07mm print film layer; 3.63mm backing; and a 0.50mm clear PVC wear layer containing a polyurethane coating. ECOsilence is made from a formulation of high quality post-consumer recycled rubber granules encapsulated in a wear and water resistant elastomeric network with multiple colored reprocessed ColorMill™ EPDM rubber.
C.	Product Dimensions:	Attain Luxury Vinyl Plank (wood visual) – 4.2mm thickness; 7" width; 48" length Attain Luxury Vinyl Tile (texture visual) - 2.5mm thickness; 12" width; 24" length ECOsilence 1.0mm rolled rubber underlayment - 4' W x 100 LF
D.	Product Weights:	Attain Luxury Vinyl Plank (wood visual) - 2.90 lbs/plank Attain Luxury Vinyl Tile (texture visual) – 2.48 lbs/tile ECOSilence1, 1.0mm rolled rubber underlayment - 0.23 lb/ft² [1.2mm by 30.5m]

E.	Plank/Tile Tolerances: (ASTM F2055) (ASTM F386)	Size: ± 0.016 in./lin. Ft (0.4 mm/305 mm Squareness: maximum 0.010 in. (0.25mm) Thickness: ± 0.005 in. (0.13 mm)
F.	ECOsilence Tolerances:	Roll width: + ½" – ¼" Roll length: +1% - 0" Thickness: ±.0.4 mm
G.	Laboratory Impact Insulation Class: (ASTM E492)	Specified floor-ceiling assembly must be tested in an ASTM compliant laboratory accredited by an ILAC-recognized accreditation body such as IAS or NVLAP (per ISO/IEC17025). 1mm thickness shall be tested over a 6" concrete slab with 4.2 mm LVT Click Plank, no ceiling, IIC rating of 49 or greater.
H.	Sound Transmission Class (ASTM E90)	STC rating of 52 or greater over 6" concrete slab.
I.	Field Impact Insulation Class: (ASTM E1007)	Floor-ceiling assembly must meet requirement as stated by building code and/or acoustical consultant.
J.	Delta IIC: (ASTM E2179)	If required, specified floor assembly must be tested in an ASTM-compliant laboratory accredited by an ILAC-recognized accreditation body such as IAS or NVLAP (per ISO/IEC17025). Shall specify floor finish and shall be tested over a 6" concrete slab with no ceiling.
K.	Abrasion Resistance: (ASTM D3389)	Pass
L.	Resistance to Light: (ASTM F1515/ISO 105-B02)	$\Delta E < 8.0$ after 400 hours
M.	Resistance to Heat: (ASTM F1514)	$\Delta E < 8.0$ after 400 hours
N.	Hardness (Shore A): (ASTM D2240)	94
O.	Dimensional Stability: (ASTM F2199)	MD= 0.10%, AMD=0.04%
P.	Static Load Limit @ 250 psi (ASTM F970)	0.009"
Q.	Compression @ 100 psi: (ASTM F36)	4%
R.	Recovery @ 100 psi: (ASTM F36)	67%
S.	Slip Resistance: (ASTM D2047)	>0.5
T.	Chemical Resistance:	5 min. & 24-hr. -- very slight surface dulling for conc. Sulfuric acid; 24-hr -- iodine stain
U.	Force Reduction: (Deltec Field Tester)	2.10%
V.	Energy Restitution: (Deltec Field Tester)	76.10%
W.	Vertical Deformation: (Deltec Field Tester)	0.8mm
X.	Critical Radiant Flux: (ASTM EW648/NRPA 253)	0.78 W/cm², Class 1
Y.	Smoke Density: (ASTM E662)	Pass

Z.	Chair Casters: (ASTM D6962BS/EN985)	Fair/Poor, buckles at the seams
AA.	Dynamic Rolling Load: (ASTM F2753)	0.016” indent/seam intact, slight gloss change
BB.	VOC: (ASTM D5116)	Pass

2.4 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

2.5 RELATED MATERIALS RELATED MATERIALS

A. Related Materials: Refer to other sections listed in Related Sections paragraph herein for related materials.

2.6 SOURCE QUALITY

A. Source Quality: Obtain recycled rubber resilient flooring materials from a single manufacturer.

PART 3.0 - EXECUTION

Specifier Note: Revise article below to suit project requirements and specifier’s practice.

3.1 MANUFACTURER’S INSTRUCTIONS

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

3.2 EXAMINATION

A. 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.

3.3 PREPARATION

A. Surface Preparation: [specify applicable product preparation requirements].

Specifier Note: Coordinate article below with manufacturer’s recommended installation details and requirements.

3.4 ERECTION/INSTALLATION/APPLICATION/CONSTRUCTION

A. Recycled Rubber Flooring Installation: Comply with manufactures’ Technical Manual for installation procedures and techniques.

B. Finish Color/Textures/Patterns: [specify installation finishes coordinated with finishes specified in Part 2 Products].

C. Related Products Installation: Refer to other sections listed in Related Sections paragraph herein for related products installation.

3.5 FIELD QUALITY REQUIREMENTS

Specifier Note: Edit paragraph below. Establish number and duration of periodic site visits with Owner and manufacturer, and specify below. Consult with manufacturer for services required. Coordinate paragraph below with Division 1 Quality Assurance Section and Part 1 Quality Assurance Submittals herein. Delete if manufacturer's field service not required.

A. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's instructions.

1. Site Visits: [specify number and duration of periodic site visits].

3.6 CLEANING

A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.

3.7 PROTECTION

A. Protection: Protect installed product and finish surfaces from damage during construction.

Specifier Note: Retain article below to suit project requirements. Article may be used to describe specific criteria requirements of similar products or equipment.

3.8 SCHEDULES

Specifier Note: Retain paragraph below to suit project requirements. Reference a schedule or include a schedule as an attachment, which indicates where to locate products and equipment.

A. Schedules: [Specify reference to applicable schedules].

END OF SECTION