a) **This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) Manual of Practice®, including MasterFormat™, SectionFormat™, and PageFormat™. A MANU-SPEC® is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Text indicated by brackets [ ] that appear in blue is optional and can be deleted in the final copy of this specification. Items that appear in red text are Specifier Notes.**

This MANU-SPEC® specifies resilient tackable linoleum sheet wall covering, marketed under the Bulletin Board brand name, as manufactured by Forbo Flooring. Revise the MANU-SPEC® section number and title below to suit project requirements, specification practices, and section content. Refer to CSI MasterFormat™ for other section numbers and titles, including 09 70 00 Wall Finishes; 09 72 13 Cork Wall Coverings.

SECTION 09 72 13
CORK WALL COVERINGS

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This section includes the following Cork Wall Coverings:
   1. Bulletin Board

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI MasterFormat™ and specifier's practice.

B. Sections related to this section include:
   1. Concrete: Refer to Division 3 Concrete Sections for cast-in-place concrete, concrete toppings, and cementitious underlayments.
   2. Wood Substrates: Refer to Division 6 Carpentry Section for wood substrates and wood underlayment.
   3. Finishes: Refer to Division 9 Finishes Section for maintenance of finishes.
   4. Resilient Accessories: Refer to Division 9 Finishes Sections for resilient wall bases, reducer strips, metal edge strips and other resilient accessories.

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 referenced in this section.

1.03 REFERENCES

A. Forbo Technical Data Sheets

B. Forbo Installation Guide

C. Forbo Floor Care Guide

D. Safety Data Sheets (MSDS or SDS)

E. American Society for Testing and Materials (ASTM):

1. ASTM C 840 – Standard Specification for Application and Finishing of Gypsum Board
2. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials
3. ASTM F 141 – Standard Terminology Relating to Resilient Floor Coverings
4. ASTM F 1482 – Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring
5. ASTM F 1861 – Standard Specification for Resilient Wall Base

F. Standards Council of Canada:
1. CAN/ULC S102.2 – Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during, or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in "Conditions of the Contract" and Division 1 Submittal Procedures Section.

1.04 SUBMITTALS

A. General: Submit each item in this Article according to the "Conditions of the Contract" and Division 1 Specification Sections.

B. Product Data: Submit three (3) copies of the manufacturer's technical data and installation recommendations for each type of material and accessory products specified.

C. Shop Drawings:
1. Submit shop drawings showing layout, locations of seams, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.

2. Show details of profiles and product components, including anchorage, accessories, finish colors, patterns and textures.

D. Samples: Submit three (3) sets of samples of each type, color and finish of material and accessory products specified, with an indication of full range of color, pattern and texture variation. Provide samples with a minimum size of 6" x 9" for products and 6" in length for accessories.

E. Quality Assurance Submittals:
1. Submit three (3) copies of the manufacturer's Product Technical Data Sheet, specifying performance characteristics, criteria and physical requirements.
2. Submit three (3) copies of the manufacturer's written installation recommendations.

F. Closeout Submittals:
1. Submit three (3) copies of the maintenance and operations data. This should include methods for maintaining the installed products and any precautions against cleaning materials or methods that are detrimental to the product and their performance.
2. Submit three (3) copies of the warranty as specified herein.
3. Installer Certification: Submit proof of certification from the manufacturer certifying that the installers comply with the specified requirements.

G. Replacement Material: After completion of work, deliver to project site replacement materials from the same manufactured lot as materials installed. Package materials with protective covering and identify each with descriptive labels.
1. Materials: No less than 50 square feet of each type, pattern and color installed.
2. Accessories: No less than 10 linear feet for each 500 linear feet or fraction thereof each different type and color installed.

H. [Sustainable Submittals:
1. Product Data for Credit MR 2.1 and Credit MR 2.2: Construction Waste Management as required by Division 01. (LEED 2009)
2. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of post-consumer and pre-consumer recycled content. (LEED 2009, LEED v4)
   a. Include statement indicating costs for each product having recycled content.
3. Product Data for Credit MR 6: For products having Rapidly Renewable content, documentation indicating percentages by weight of Rapidly Renewable content as required by Division 01.

   a. Include statement indicating costs for each product having Rapidly Renewable content. (LEED 2009)
4. Product Data for Credit EQ 4.1: Low-Emitting Materials – Adhesives and Sealants, including printed statement of VOC content as required by Division 01. (LEED 2009)
5. Product Data for Indoor Environmental Quality Credit Low-Emitting Materials – Products must be tested and determined compliant in accordance with California Department of Public Health (CDPH) Standard Method v1.2, using the applicable exposure scenario. The default scenario is the private office scenario. If a product specified has not been tested as noted, provide a substitution to the Architect for review and approval of an equal product meeting the noted California Department of Health standard. (LEED 2009, LEED v4)
6. Building Product Disclosure and Optimization – Sourcing of Raw Materials; Option 2 – Leadership Extraction Practices, products containing one or more of the following attributes: (LEED v4)
   a. BioBased products meeting Sustainable Agriculture Standard
   b. Wood products certified to FSC/SFI standards (See further explanation, Calculating FSC/SFI Credit Contributions)
   c. Reused materials
   d. Post-consumer recycled materials
   e. Pre-consumer recycled materials
   f. Extended producer responsibility
7. Building Product Disclosure and Optimization – Material Ingredients; Option 1 – Material Ingredient Reporting Health, products using any of the following programs: (LEED v4)
   a. Product Declaration (HPD)
   b. Declare Label
   c. Cradle to Cradle v2 Basic level
   d. Cradle to Cradle v3 Bronze level
8. Emissions and Content Requirements General Emissions Evaluation: Building products must be tested and determined compliant in accordance with California Department of Public Health (CDPH) Standard Method v1.2, using the applicable exposure scenario. (LEED v4)
9. Additional VOC Content Requirements for Wet-Applied Products: All adhesives and sealants wet-applied on site must meet the applicable chemical content requirements of SCAQMD Rule 1168 – July 1, 2005. (LEED v4)]

Specifier Note: Article below should include prerequisites, standards, limitations, and criteria which establish an overall level of quality for products and workmanship for this section. Coordinate below article with Division 1 Quality Assurance Section.

1.05 QUALITY ASSURANCE

A. Manufacturer: Whenever possible, provide each type of material as provided by a single manufacturer, including recommended primers, adhesives, sealants, patching and leveling compounds.

Specifier Note: Coordinate paragraph below with Division 1 Project Management and Coordination (Project Meetings) Section.

B. Pre-Installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation and floor care recommendations and manufacturer's warranty requirements. Comply with requirements according to the “Project Management and Coordination” in Division 1 Project Meetings Section.

C. Pre-Installation Testing: Conduct and document pre-installation testing as specified by manufacturer in accordance with the latest version of the specified test methods.
   1. Bond Testing: Conduct testing and document results in accordance with the manufacturer’s recommendations.

D. Contractor Qualifications:
   1. The awarded contractor shall be an established firm, experienced in the installation of the specified product and shall have access to all manufacturer’s required specifications, technical, installation and maintenance related documents.

E. 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. Engage installers certified by Forbo as a “Forbo Certified Sheet Technician.”

2. Proof of valid certification must be submitted to the General Contractor and verified by Forbo prior to the start of the project.
   a. [For complex installations including flash coving, a Forbo 360 Master Mechanic is required.]
3. Forbo Certified Sheet Technicians must be present on the jobsite daily.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in "Conditions of the Contract" and Division 1 Regulatory Requirements Section. Repetitive statements should be avoided.

F. Regulatory Requirements: Provide products with the following fire performance characteristics as determined by testing identical products in accordance with the latest version of ASTM method indicated below by a certified testing laboratory or another testing and inspecting agency acceptable to authorities having jurisdiction.
   1. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials
   2. [CAN/ULC S102.2 – Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies. (Canada Test Method Only)]

Specifier Note: Retain paragraph below for erected assemblies (either on-site or off-site) required for review of construction, coordination of work of several sections, testing, or observation of operation. Mock-ups, when accepted or approved, establish standards by which work will be judged. Coordinate below with Division 1 Quality Control (Mock-Up Requirements) Section.

G. Standard of Quality Mock-Up: For the purpose of evaluating the quality of workmanship, install a mock-up of the specified material completed by the pre-qualified installers following the manufacturer's installation recommendations. Obtain Owner's and Architect's acceptance of finish color, texture and pattern, and workmanship standard. Comply with requirements according to the "Quality Control" in Division 1 Mock-Up Requirements Section.
   1. Size and Location of Mock-Up: [Specify the size and location of the mock-up.]
   2. Maintenance of Mock-Up: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
   3. Approval of Mock-Up: Upon approval of the mock-up, this installation shall be considered the standard of quality and basis of comparison for the balance of the project. Areas to be found deficient by specification standards or application procedures shall be repaired or replaced at the contractor's expense.
   4. Incorporation of Mock-Up: The mock-up may be incorporated into final construction upon Owner's approval.

H. Post-Installation Meetings: Conduct post-installation meetings to review methods and procedures related to floor care and warranty requirements.

Specifier Note: Coordinate article below with "Conditions of the Contract" and with Division 1 Closeout Submittals Warranty Section. Below warranty article assumes the use of The American Institute of Architects document A201 "Conditions of the Contract for Construction." If other "Conditions" are used for the project, revise article below accordingly.

1.06 WARRANTY

A. Project Warranty: Comply with requirements according to the "Conditions of the Contract" in Division 1 Closeout Submittals Warranty Section for project warranty provisions.

B. Manufacturer's Warranty: Submit the manufacturer's standard warranty document executed by authorized company official for Owner's acceptance. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.
   1. Warranty Period: Five (5) year limited warranty commencing on Date of Original Purchase from manufacturer.

C. Installation Warranty: Submit the contractor's installation warranty signed by the General Contractor and Installer for Owner's Acceptance, agreeing to repair or replace work which has failed a as result of defects in workmanship. Failure shall include, but not limited to, tearing, cracking, separation, deterioration or loosening from substrate, seam failure, ripples, bubbling or puckering. Upon notification of such installation deficiencies, within the warranty period, make necessary repairs or replacement at the convenience of the Owner. Other guaranties or warranties may not be substituted

by the Contractor for the terms of this warranty. Installation warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents

1. Warranty Period: Two (2) year limited warranty commencing on Date of Substantial Completion from contractor.

Specifier Note: Article below should include special and unique requirements. Coordinate article below with Division 1 Product Requirements Section.

1.07 DELIVERY, STORAGE, AND HANDLING

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

B. Ordering: Comply with the 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 protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.

1. All materials (including adhesives and accessories) should be stored in areas that are fully enclosed and weathertight. The permanent HVAC should be fully operational and controlled and set at a minimum temperature 65° F (18.3° C). If this is not possible, the areas should be acclimated and controlled by means of temporary HVAC to the service level conditions expected during occupancy. The temperature and humidity should range from 75° F ± 10°F (23.9° C ± 5.5° C) with a 50% ± 10% ambient relative humidity.
2. Store rolls standing upright, labels up, and ensure that the color, roll and batch numbers can be easily read.
3. Comply with the manufacturer's recommendation for the acclimation of all materials in the space where they will be installed for at least 48 hours prior to the installation unless longer conditioning periods are required by the manufacturer.

1.08 PROJECT CONDITIONS

A. Environmental Requirements/Conditions:

1. Areas to receive material should be clean, fully enclosed and weather tight. The permanent HVAC should be fully operational and controlled and set at a minimum temperature 65° F (18.3° C). If this is not possible, the areas should be acclimated and controlled by means of temporary HVAC to the service level conditions expected during occupancy. The temperature and humidity should range from 75° F ± 10°F (23.9° C ± 5.5° C) with a 50% ± 10% ambient relative humidity. These conditions **MUST** be established at least seven days prior to beginning the installation, maintained during the installation, and continued for at least seven days following the installation.
2. The material should be conditioned in the same manner for at least 48 hours prior to the installation.
3. Substrate evaluation and preparation should not begin until a stable, conditioned environment has been established as described in this section.
4. Areas to receive material must have adequate lighting to allow for proper inspection and preparation of the substrate, installation of the material and final inspection.

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

1. Temperature Conditions: 65° F (18.3° C) for at least seven days prior to beginning the installation, maintained during the installation, and continued for at least seven days following the installation.

C. Substrate Conditions:

1. Existing Conditions: [Specify existing conditions affecting product use and installation.]
2. Concrete Curing: Do not install material over concrete substrates until substrates have cured and are dry to bond with adhesive as determined by the concrete and manufacturer's recommendations.
   a. [Owner assigned responsibility.]
   b. [Contractor assigned to report responsibility back to Owner and/or Architect.]
3. Testing Results: Conduct and document pre-installation testing as specified by manufacturer in accordance with the latest version of the specified test methods.

a. Bond Testing: Conduct testing and document results in accordance with the manufacturer's recommendations.

4. Close spaces to traffic during installation and for time period after installation recommended in writing by the manufacturer.
5. Installation should not begin until the work of all other trades has been completed, especially overhead trades.
6. Where demountable partitions and other items are indicated for installation on top of the material, install material before these items are installed.

D. 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.

PART 2 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 "Equal" 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 "Equal" products.

2.01 CORK WALL COVERING – FORBO FLOORING SYSTEMS

A. Manufacturer Address:
1. [US Headquarters
8 Maplewood Dr.
Hazleton, PA 18202
Phone: 1-800-842-7839
www.forboflooringNA.com]
2. [Canada Headquarters
3983 Nashua Dr., Unit 1
Mississauga, ON L4V 1P3
Phone: 1-800-268-8108
www.forboflooringNA.com]
3. Representative Contact: [Specify representative name and contact information.]

B. Proprietary Product Information:
1. Material Name: Bulletin Board
2. Description: Homogeneous tackable surface material made primarily of natural materials consisting of linseed oil, cork, rosin binders and dry pigments mixed and calendared onto natural jute backing. Pattern and color shall extend throughout total thickness of material.
3. Width: [48" (122 cm)] [72" (173 cm)]
4. Length: 27 Meters (90 Linear Feet)
5. Gauge: 6.0 mm (1/4")
6. Backing: Jute
7. Color and Pattern: Colors and patterns shall be selected by Architect. Patterns shall be defined in any given area, applied in stripes, diagonals, checkerboard pattern and other designs as determined by the Architect. All selections shall be made from the manufacturer's full product lines (including premium colors). See Architectural drawings for color schedule list in reference to this material.
   a. [Specify colors and patterns as selected by Architect.]
8. Adhesive: Forbo L 910W Adhesive
9. Net Fit Seams: All Bulletin Board products shall be installed utilizing net fit seams.

2.02 ACCESSORIES

A. Resilient Edge Strips: Strips shall be homogeneous vinyl or rubber composition with a tapered or bull nose edge no less than 1" wide, colored to match material or as selected by Architect from standard colors available.
1. [Specify colors and patterns as selected by Architect.]

B. Metal Edge Strips: Strips shall be of width shown and of required thickness to protect the exposed edge of the material with units in maximum length available to minimize the number of joints.
   1. [Specify colors and patterns as selected by Architect.]

C. Wall Base: Provide rubber wall base complying with FS SS-W-40, Type I.
   1. [Specify colors and patterns as selected by Architect.]

D. Care Products: Provide products as required in Section 3.7 Cleaning.
   1. [Specify cleaning chemicals and equipment as recommended by manufacturer.]

Specifier Note: Edit article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.03 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

Specifier Note: Add article below for alternates required for project; state work covered. Coordinate with Part 1 General Summary Article herein, applicable Division 1 Sections, and other Bid and Contract Documents.

2.04 RELATED MATERIALS

A. Related Materials: Refer to other sections for related materials as follows.
   1. Concrete: Refer to Division 3 Concrete Sections for cast-in-place concrete, concrete toppings, and cementitious underlayments.
   2. Wood Substrates: Refer to Division 6 Carpentry Section for wood substrates and wood underlayment.
   3. Finishes: Refer to Division 9 Finishes Section for maintenance of flooring.
   4. Resilient Accessories: Refer to Division 9 Finishes Sections for resilient wall bases, reducer strips, metal edge strips and other resilient accessories.

2.05 SOURCE QUALITY

A. Source Quality: Obtain product materials from a single manufacturer.

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI SectionFormat and a supplement to MANU-SPEC®. Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S RECOMMENDATIONS

A. Compliance: Comply with manufacturer's product technical data, including product technical bulletins, installation recommendations and care recommendations.

3.02 INSPECTION

A. Site Verification of Conditions: The Contractor and Installer shall examine and verify conditions previously described in other sections under which material and accessories are to be installed to be in accordance with the manufacturer’s installation recommendations and must notify the General Contractor in writing of conditions detrimental to proper and timely completion of work. Work shall not proceed until all unsatisfactory conditions are corrected to acceptable conditions to the Owner and Architect.

B. Material Inspection: Visually inspect all materials prior to installation in accordance with the manufacturer’s installation recommendations. Material with visual defects shall not be installed and shall not be considered as a legitimate claim if they are installed.

3.03 PREPARATION

A. General: Comply with manufacturer’s written installation recommendations for preparing substrates indicated to receive materials.

B. Adjacent Surfaces Protection: Protect adjacent work areas and finish surfaces from damage during product installation.

C. Surface Preparation:
   1. General: Prepare substrate in accordance with manufacturer's recommendations and ASTM industry standards. Work shall not proceed until all unsatisfactory conditions are corrected to acceptable conditions to the Owner and Architect.
   2. Substrate: Substrates to receive material must be compression and deformation resistant, permanently dry and clean. They must be sound, smooth, rigid, flat dry, and free of all foreign materials including but not limited to dust, grease, oils, solvent, adhesive residue, mold, mildew or any substance that could prevent achieving a secure bond.
   3. Concrete Substrate: Concrete substrates shall be cured per the concrete manufacturer's recommendations. They must have a minimum compressive strength of 3,000 psi and a minimum dry density of 150 pounds per cubic foot. Refer to Division 3 Concrete Sections for patching, repairing crack materials and leveling compounds with Portland cement based compounds.
      a. Refer to Division 3 Concrete Sections for cast-in-place concrete, concrete toppings, and cementitious underlayments.
      b. Reference Standard: Comply with the latest version of ASTM F 710 – Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
   4. Wood Substrate: Wood substrates must be double construction with a minimum total thickness of 1 inch. Wood substrates must be rigid and free from movement.
      a. Refer to Division 6 Carpentry Section for wood substrates and wood underlayment.
      b. Reference Standard: Comply with the latest version of ASTM F 1482 – Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring.

D. Substrate Testing: A diagram of the area showing the location and results of each test should be submitted to the Architect, General Contractor or End User. If at the time of testing the test results exceed the limitations set forth by the manufacturer, the installation must not proceed until the problem has been corrected. The Contractor responsible for the substrate shall be responsible for the costs associated with analysis of the substrate and subsequent remediation requirements.
   1. Bond Testing
      a. Conduct testing in accordance with the manufacturer's recommendations in various locations throughout the area where material is to be installed. Although the number of tests required may vary, enough tests should be performed to allow an evaluation of the entire area where material will be installed.
      b. When evaluating adhesive mat bond tests using Forbo L 910W adhesive, significant force should be required to remove the test sample. The bond failure should occur within the adhesive layer when the test sample is removed. There should be approximately the same amount of adhesive on the substrate and the material backing.

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

3.04 INSTALLATION

A. Material Installation: For each wall, cut pieces of Bulletin Board to the required length and width, adding 2" – 3" in each direction to allow for final trimming. It is preferred that the material is cut 24 hours prior to installation. During storage in roll form, tension develops in Bulletin Board that will cause the ends of pieces cut from the roll to "cup", or not lay flat. This is commonly called end curl. This tension must be relaxed prior to installation so that the material will remain flat and in full contact with the adhesive while the adhesive dries. If installing multiple sheets of Bulletin Board, stack the pre-cut sheets face-to-face and back-to-back to help relieve the end curl and allow material to relax. In order to ensure continuous contact of the material and adhesive, the natural end curl at the end of each cut must be relaxed, and/or massaged both before and during the installation process to remove the tension caused by being rolled. Relax the end curl by properly massaging at time of installation into adhesive. Plan the layout to allow for a minimum of 1/2" – 3/4" of the factory edge to be trimmed from each side of the material for seaming. The seams should fall a minimum of 6" away from joints in the substrate. Allowing for trimming, draw a plumb line on the wall where the seam for the first piece will fall. Using a Forbo Seam and Strip Cutter or a straight edge and knife, trim a minimum of 1/2" – 3/4" from the seam edge of the first piece. Angle the knife slightly to create an undercut. Trim the sheet and "dry" fit it to the wall section, making sure that the seam edge will align with the plumb

line on the wall. Traditional scribing methods generally produce the best results. Establish "set marks" on both the material and the wall to aid in positioning the sheet during installation. Before adhering the first sheet, prepare seams for all adjacent sheets on a clean flat surface. Cutting seams on the wall can be difficult. Position the second sheet adjacent to the first sheet, overlapping the second sheet on the first sheet a minimum of 1/2" – 3/4" at the seam. Apply masking tape at several locations as set marks to aid in properly aligning sheets. Starting from the corner, spread adhesive in the area where the first piece will be installed. The plumb line is the boundary for the side opposite the corner. Depending on conditions, it may not be possible to spread adhesive in the entire area without the adhesive becoming too dry before the material is placed. If necessary, only spread adhesive a short distance from the starting point and stop the adhesive spread along a straight vertical line. Do not spread more adhesive than can be covered while the adhesive is still sufficiently wet to achieve 100% wet transfer to the material backing. Using the set marks and plumb line established during fitting, position the material on the wall, starting at the corner. Roll immediately with a three-section wall roller. Roll thoroughly in all directions, first across the width and then along the length, so that the material backing is firmly pressed into the wet adhesive and any trapped air bubbles are released. Clean excess adhesive while it is still wet. When it is not possible to adhere the entire piece at one time, fold the un-adhered portion of the material back over the adhered portion up to the adhesive spread line. Starting at the spread line, being careful not to overlap the adhesive, continue spreading adhesive toward the plumb line, placing and rolling the material as you go, until the entire piece has been adhered. Repeat this process for each sheet. Check for adhesive transfer frequently. There must be **100% wet** transfer of adhesive to the material backing in order to achieve a secure bond. 100% wet transfer is a continuous film of adhesive, when wet, on both the backing of the material and the substrate with no trace of trowel marks or ridges. Immediately roll the Bulletin Board in all directions using a three-section wall roller to ensure proper adhesive transfer. Additional rolling is required during adhesive setup to ensure that the material is flat and fully adhered.

B. Adhesive Application: Use trowel recommended by manufacturer for Forbo L 910W adhesive.
   1. 1/8" x 1/8" x 1/16" V notch trowel
   2. Spread rate is approximately 90 ft^2/gallon

C. Seaming: All Bulletin Board products shall be installed utilizing net fit seams. A properly executed net fit seam will have no gaps or fullness. If the material is cut too full, it will result in bubbled or peaked seams. Gaps will allow dirt or contaminants to accumulate. Cut the material at an angle so as to slightly undercut the material. This will compensate for any slight expansion that may occur. Roll the seam with a steel seam roller, making sure that the material is placed into wet adhesive.

D. Installation Techniques:
   1. Where demountable partitions and other items are indicated for installation on top of finished materials, install material before these items are installed.
   2. Scribe, cut, fit material to butt tightly to all surfaces, permanent fixtures and built-in furniture, including pipes, outlets, edgings, thresholds, nosings, and cabinets.
   3. Extend material into toe spaces, door reveals, closets, and similar openings.
   4. Install material on covers for telephone and electrical ducts, and similar items occurring within finish areas. Maintain overall continuity of color and pattern with pieces of material installed on these covers.
   5. Adhere material to substrate without producing open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections in completed installation.
      a. Use adhesive applied to the substrate in compliance with the manufacturer's recommendations, including those for proper spreading of the adhesive, adhesive missing and adhesive open and working times.
      b. Remove fresh adhesive residue immediately with a clean white cloth. Dried adhesive can be removed with a clean white cloth and Forbo Adhesive Remover. If this is not available, a solution of properly diluted neutral pH cleaner may be used. The area should then be rinsed with clean, cool water to remove all residues from the Forbo Bulletin Board.
         NOTE: Excessive pressure or aggressive cleaning may mar the bulletin board surface.
   6. Immediately roll the material in all directions using a three-section wall roller to ensure proper adhesive transfer. Additional rolling is required during adhesive setup to ensure that the material is flat and fully adhered.
   7. Edges can be finished by fitting a frame around the edge, beveling the edges, milling or cutting the edge straight. For the best result, always use sharp tools or blades when cutting the material.
   8. Install protective outside corner guards over all outside corners. For inside corners, pattern or direct scribing the material will ensure a tight fit between the sheets.

E. Finish Material Patterns: [Specify patterns as selected and detailed by Architect.]

Specifier Note: Coordinate article below with Division 1 Quality Assurance and Quality Control Sections.

3.05 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 request of the Owner, General Contractor or Architect, and with at least 72 hours' notice, provide manufacturer's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with manufacturer's recommendations.
   1. Site Visits: [Specify number and duration of periodic site visits.]

Specifier Note: Coordinate article below with Division 1 Execution Requirements Section.

3.06 PROTECTION

A. Protection: Protect installed product and finish surfaces from damage during construction. Remove and legally dispose of protective covering at time of Substantial Completion.

Specifier Note: Coordinate article below with Division 1 Execution Requirements (Cleaning) Section.

3.07 CLEANING

A. Initial Maintenance: In order to allow the adhesive to dry and cure properly, wait a minimum of five days following the installation before conducting wet cleaning procedures or initial maintenance. Additional time may be necessary if the installation is over a non-porous substrate.

B. Procedure:
   1. Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's recommendations prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.
   2. Remove visible adhesive and other surface blemishes using cleaning methods recommended by floor manufacturer.
   3. Remove all surface soil, debris, sand and grit by dusting.
   4. Mix a neutral pH cleaning solution according to the label directions. Apply the solution with a soft bristled brush.
   5. Gently scrub the area to loosen and remove any soil. Move the brush in circular motions, working the debris out of the surface of the material.
      NOTE: If Bulletin Board is scrubbed to harshly or with abrasives, it can mar the surface of the material, removing some of the color.
   6. Rinse the entire surface with a clean cloth using clean, cool water. Change the water often to ensure it remains clean and clear.
   7. Recover the rinse water with a wet/dry vacuum.
   8. Dry the surface thoroughly with an absorbent cloth so it can be examined to ensure proper cleaning.
   9. Allow the surface to dry thoroughly before use.

Specifier Note: Add or delete article below to suit project requirements.

3.08 INITIAL MAINTENANCE PROCEDURES

A. General: Include in Contract Sum Amount cost for initial maintenance procedures, and execute procedures after installation as recommended by manufacturer.

B. Initial maintenance to be conducted by awarded Contractor.
   1. [Engage floor care professionals who are certified by Forbo as a "Forbo Certified Floor Care Technician."]

C. Drying Room Yellowing/Ambering: Bulletin Board is made from natural materials. During the manufacturing process while the material is maturing in the drying room stoves, the natural occurrence of a yellow cast, termed “drying room yellowing” or “ambering” appears on the surface. This yellow cast is caused by the oxidation of linseed oil, occurring intermittently and with varying intensity. It is most noticeable on light blues, greys and soft ivory shades of material. The yellow cast is only *TEMPORARY*. The yellow cast is most noticeable when a new roll or carton of material is opened. It can appear as being off shade from the sample materials. When the material is exposed to light, the yellow cast will dissipate. The process may take as little as a few hours in bright sunlight or longer with artificial light. Because this is a natural occurrence in the product, there is no set time frame for the yellowing to dissipate. *This is not a material defect*. Performing floor care procedures, such as applying floor finish to the material, will not prevent the dissipation but may slow the process. To discover the true color of the Bulletin Board, follow these few simple steps:
   1. Take a piece of the material and cover one half with heavy paper or thick surface, such as cardboard or another piece of material.
   2. Place these pieces in direct sunlight for approximately 1 hour.
   3. After the time has passed, remove the cardboard or heavy material and see the visual difference first hand.

Specifier Note: Retain article below to suit project requirements. CSI PageFormat allows for Schedules, Forms, and Tables to be located at the end of a section. Article may be used to describe specific criteria requirements of similar products or equipment.

3.09 SCHEDULES AND (PRODUCT CRITERIA) FORMS

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

END OF SECTION 09 72 13

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