Specifier Note: This Guide Specification has been created to assist in preparing a Project/Master Specification. In accordance with CSI/CSC (Construction Specifications Institute/Construction Specifications Canada) MasterFormat®, this Guide Specification can be used with most Project/Master Specification formats, following simple editing.

*Specifier Note: **The enclosed requirements are intended for indoor installations over concrete substrates**. If the provisions described herein are adopted for installations over other types of substrates or for outdoor installations, Mondo's Limited Material Warranty will be null and void and the Specifier will be held liable. Please communicate with the Technical Department at Mondo America, Inc. (technical@mondousa.com) for assistance regarding other types of substrates, including but not limited to wood or steel stairs.*

Specifier Note: This Guide Specification describes the prefabricated resilient rubber flooring product to be installed. The number and title of the section may be changed, if the Specifier deems necessary, but in any circumstance it will belong to the general CSI/CSC Section 09 65 00: Resilient Flooring.

SECTION 09 65 19.33
Rubber Tile Flooring

1 PART 1 – GENERAL

1.1 SUMMARY

1.1.1 Products Supplied

A. Prefabricated resilient rubber flooring ("Rubber Flooring").
B. Accessories required for installation, maintenance and repair.

1.1.2 Related Requirements

Specifier Note: The following CSI/CSC sections serve as a guide to what is essential information needed to determine the acceptability of the site conditions required for the installation of Rubber Flooring. When necessary, the Specifier may include other sections.

A. Section 02 25 00 – Existing Material Assessment
B. Section 03 05 00 – Common Work Results for Concrete
C. Section 07 05 00 – Common Work Results for Thermal and Moisture Protection
D. Section 07 10 00 – Dampproofing and Waterproofing

1.2 REFERENCES

1.2.1 German Committee for Health-Related Evaluation of Building Products (AgBB)

A. AgBB. Evaluation of volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) from building products.

1.2.2 ASTM International (ASTM)

A. ASTM E1643: Standard Practice for Selection, Design, Installation, and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs.

B. ASTM E1745: Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
C. ASTM F710: Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
D. ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
E. ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
F. ASTM F3010: Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings.
G. ASTM F3191: Standard Practice for Field Determination of Substrate Water Absorption (Porosity) for Substrates to Receive Resilient Flooring.
H. ASTM F3311: Standard Practice for Mat Bond Evaluation of Performance and Compatibility for Resilient Flooring System Components Prior to Installation.

1.2.3 The Blue Angel

A. Blue Angel. DE-UZ 120: Resilient Floor Coverings and Skirting. German environmental label. Products with the Blue Angel ecolabel meet a list of criteria considering environmental and health-related aspects.

1.2.4 California Department of Public Health (CDPH)

A. CDPH V1.2 (2017): Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers.

1.2.5 Grenelle Environment Forum

A. Decree № 2011-321. French decree on labeling requirement for construction materials, wall and floor coverings, and paint and varnishes, as it pertains to their emissions of volatile pollutants. A classification rating of A+ indicates a product with very low emissions.

1.2.6 German Institute for Standardization (DIN)

A. DIN 51130: Testing of floor coverings - Determination of the anti-slip property - Workrooms and fields of activities with slip danger - Walking method - Ramp test.
B. DIN 53436: Generation of thermal decomposition products from materials for their analytic-toxicological testing.

1.2.7 European Committee for Standardization (CEN)

A. EN 1081: Resilient Floor coverings - Determination of the electrical resistance.
B. EN 1399: Resilient floor coverings - Determination of resistance to stubbed and burning cigarettes.
C. EN 1815: Resilient and laminate floor coverings. Assessment of static electrical propensity.
D. EN 12667: Thermal performance of building materials and products. Determination of thermal resistance by means of guarded hot plate and heat flow meter methods. Products of high and medium thermal resistance.
E. EN 13501-1: Fire classification of construction products and building elements – PART 1: Classification using data from reaction to fire tests.
F. EN 13893: Resilient, laminate and textile floor coverings - Measurement of dynamic coefficient of friction on dry floor surfaces.
G. EN 16516: Construction products. Assessment of release of dangerous substances - Determination of emissions into indoor air.

1.2.8 GREENGUARD by UL Solutions

A. GREENGUARD Certification. Certified products have been screened for more than 15,000 VOCs known to pollute indoor air.
B. GREENGUARD Gold. Even more stringent standard that includes strict criteria for additional chemicals, limiting emissions of more than 360 VOCs and requiring a reduction in total volatile organic compounds (TVOCs), to ensure the acceptability of these products in environments such as schools and healthcare facilities.

1.2.9 Indoor Air Comfort® Gold by Eurofins

A. Indoor Air Comfort® Gold is Europe's most stringent indoor air quality certification, demonstrating product compliance to low VOC emissions criteria, including additional compliance of product emissions with the criteria of many voluntary specifications issued by most relevant ecolabels and sustainable building certifications. Certified products are those with the best-in-class low emissions.

1.2.10 International Organization for Standardization (ISO)

A. ISO 34-1: Rubber, vulcanized or thermoplastic — Determination of tear strength. Part 1: Trouser, angle and crescent test pieces.
B. ISO 48-4: Rubber, vulcanized or thermoplastic — Determination of hardness. Part 4: Indentation hardness by durometer method (Shore hardness).
C. ISO 105-B02: Textiles — Tests for colour fastness. Part B02: Colour fastness to artificial light — Xenon arc fading lamp test.
D. ISO 4649: Rubber, vulcanized or thermoplastic — Determination of abrasion resistance using a rotating cylindrical drum device.
E. ISO 4918: Resilient, textile and laminate floor coverings — Castor chair test.
F. ISO 9001: Quality management systems — Requirements.
G. ISO 10140-3: Acoustics — Laboratory measurement of sound insulation of building elements. Part 3: Measurement of impact sound insulation.
H. ISO 14001: Environmental management systems — Requirements with guidance for use.
I. ISO 14064-1: Greenhouse gases. Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.
J. ISO 14064-3: Greenhouse gases. Part 3: Specification with guidance for the verification and validation of greenhouse gas statements.
K. ISO 16000-3: Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor and test chamber air — Active sampling method.
L. ISO 16000-6: Indoor air - Part 6: Part 6: Determination of organic compounds (VVOC, VOC, SVOC) in indoor and test chamber air by active sampling on sorbent tubes, thermal desorption and gas chromatography using MS or MS FID.
M. ISO 16000-9: Indoor air - Part 9: Determination of the emission of volatile organic compounds from building products and furnishing — Emission test chamber method.
N. ISO 23999: Resilient floor coverings — Determination of dimensional stability and curling after exposure to heat.
O. ISO 24343-1: Resilient and laminate floor coverings — Determination of indentation and residual indentation. Part 1: Residual indentation.
P. ISO 24344: Resilient floor coverings — Determination of flexibility and deflection.
Q. ISO 26987: Resilient floor coverings — Determination of staining and resistance to chemicals.
R. ISO 50001: Energy management systems.

1.2.11 Living Building Challenge (LBC) Red List

A. The LBC Red List is a public list of "worst in class" chemical substances prevalent in the building industry. These chemicals are known to pose serious risks to human health and the environment. Grouped by chemical class, each individual chemical substance is identified by its Chemical Abstract Registry Number (CASRN).

1.2.12 Building Foundation Information RTS

A. M1 Finnish Classification focuses on emissions from building materials and furniture into the indoor air, setting limit values for emissions of volatile organic compounds (VOC), formaldehyde, and ammonia as well as the acceptability of odour. Criteria are set for the longer-term emissions that are more relevant to indoor air quality. M1 Classification label on the product indicates that the product is low-emitting, and its use supports good indoor air. The M1 Classification label is a type I ecolabel (multicriteria).

1.3 SUBMITTALS

Specifier Note: The following are typical submittals. When necessary, the Specifier may include other submittals. Technical and warranty information is available for download at www.mondocontractflooring.com or may be requested from the Technical Department at Mondo America, Inc. (technical@mondousa.com).

1.3.1 Action Submittals

A. Provide a sample, 6 inches x 6 inches, for verification of such characteristics as color and surface texture, for each specified Manufactured Product.
B. General Contractor/Construction Manager to provide all required shop drawings for the project, illustrating layouts, details, dimensions, and other pertinent data useful to the Flooring Contractor.

1.3.2 Informational Submittals

A. Provide Manufacturer's latest technical data sheet (TDS) and guide specification for all Products Supplied.
B. Provide Manufacturer's latest substrate surface preparation guidelines for all Products Supplied.
C. Provide Manufacturer's latest installation guidelines for all Products Supplied.

1.3.3 Sustainable Design Submittals (When Required)

Specifier Note: Please consult Manufacturer for end-of-life options that favor a circular economy.

A. For Rubber Flooring, provide proof of compliance with CDPH V1.2 (2017) for low-emitting products by submitting a third-party indoor air quality certificate: GREENGUARD Gold or Indoor Air Comfort® Gold certification.
B. For adhesive(s) specified for the installation of Rubber Flooring, provide proof of compliance with CDPH V1.2 (2017) for low-emitting products by submitting a third-party certificate: Indoor Advantage™ Gold by SCS Global Services.
C. Provide a copy of Manufacturer's current declaration that the Rubber Flooring was not manufactured using ingredients listed on the latest LBC Red List.
D. Provide a copy of Manufacturer's ISO 14001, ISO 14064, and ISO 50001 certifications.
E. Reduction in maintenance from specifying Rubber Flooring that does not require waxing or sealing. Regular care using green floor cleaner: Prominence™ by Diversey. Prominence™ is GREENGUARD Gold and Green Seal Certified.
F. Reduction in waste from specifying Rubber Flooring that is 100% recyclable (end-of-life recycling possible).

1.3.4 Closeout Submittals

A. Provide the Manufacturer's latest maintenance guidelines for Manufactured Product.
B. Provide the Manufacturer's registered (numbered) Limited Material Warranty certificate for the Manufactured Product installed. Refer to section 1.7.

1.3.5 Maintenance Material Submittals

A. It is highly recommended to purchase extra stock material from the original dye lot used, for the purpose of facility operations and maintenance (approximately 2% of the total floor surface for each color of Manufactured Product specified).

1.4 QUALITY ASSURANCE

A. Manufacturer must have ISO 9001, ISO 14001, ISO 14064 and ISO 50001 certifications.
B. Manufacturer must have a minimum of fifteen (15) years of experience in manufacturing Rubber Flooring.
C. Rubber Flooring must have undergone a vulcanization process; factory lamination must not be accepted as equivalent.
D. Flooring Contractor must be recognized and approved by Manufacturer.
E. Flooring Contractor must be fully acquainted with the existing facility and utilities and must fully understand the difficulties and restrictions attending the execution of the work under contract; flooring Contractor must immediately advise Owner, in writing, of any restrictions or anticipated difficulty regarding execution of the work under contract.
F. Flooring Contractor must verify and approve the qualifications of all members of the installation team that will take part in the installation of the Rubber Flooring.
G. Flooring Contractor must ensure that any Installer having been assigned to substrate preparation and Rubber Flooring installation has performed work of the same scale in the last three (3) years and has the required skills.

1.5 DELIVERY, STORAGE AND HANDLING

A. Products Supplied must not suffer damage during delivery, storage and handling (e.g., dents, scratches, excessive compression or warping, chipped edges, etc.). Products Supplied that are damaged must not be used/installed.
B. Products Supplied must be delivered in Manufacturer's original, unopened, and undamaged packaging with identification labels intact.
C. Products Supplied must be protected from exposure to harmful weather conditions and must be safely stored on a clean, dry, flat surface. Store tiles of Rubber Flooring on a flat surface, carefully protecting corners and edges. Do not double-stack pallets.
D. Climate controlled storage is recommended. Storage temperature must not be below 40°F (4°C) and must not exceed 100°F (38°C). Materials must be delivered to site a minimum of 48 hours before work is scheduled to begin, so that they may acclimate.
E. Avoid storing Manufactured Product for extended periods of time or additional material trimming may be required prior to installation.

1.6 SITE CONDITIONS

A. General Contractor/Construction Manager must provide a structurally sound concrete substrate. **CAUTION: Manufacturer accepts no liability for any failure related to unstable concrete substrates.** Concrete substrates must not be subject to shrinking, curling, cracking or moving prior to the installation

of Rubber Flooring. **CAUTION: Expansion joints allow for movement and expansion: do not specify the direct installation of Rubber Flooring over expansion joints. Always use industry standard expansion joint assemblies.**

B. General Contractor/Construction Manager is responsible for ensuring that all site conditions meet the requirements of the Manufacturer. Ensure 1.6. Site Conditions, 3.2. Examination and 3.3 Preparation comply with project requirements, prior to proceeding with the Rubber Flooring installation. Refer to the latest ASTM F710 standard practice for additional information.

C. All concrete slabs, on or below grade, must be installed over a permanent effective vapor retarder, complying with the latest ASTM E1643 standard practice and the latest ASTM E1745 standard specification. The vapor retarder must be placed directly underneath the concrete slab, above the granular fill, as per the product manufacturer's instructions. The vapor retarder must have a minimum thickness of 10 mil (0.010 in) and a perm rating of 0.1 or less.

D. Sealers and curing compounds must not be applied to or mixed into the concrete slab. Refer to CSI/CSC Section 03 05 00 – Common Work Results for Concrete of Division 3.

E. Rubber Flooring installation to be carried out no sooner than the specified curing time of concrete (normal density concrete curing time is approximately 28 days for development of design strength, having a minimum 3500 psi or 25 MPa in compressive strength).

F. Concrete substrates must be dry, flat, sufficiently porous, smooth, clean, and free of bond inhibitors (paint, wax, dust, oil or grease, sealer or curing agent, surface hardener, solvent, asphalt, old adhesive residues, etc.). Concrete surfaces that are powdery or scaly are not acceptable. Bond inhibitors are to be mechanically removed (e.g., light to medium shot-blasting for ICRI CSP #3 to #5). Do not use abatement chemicals; these chemicals can be absorbed by concrete and prevent adhesion. Flooring Contractor must be advised, in writing, of any bond inhibitor having been removed, so that removal effectiveness can be verified with a mat bond test, following the latest ASTM F3311 standard practice.

G. Concrete substrate's surface must be smooth and level within a tolerance of 3/16" (4.8 mm) in a 10-foot (3.05 m) span. *NOTE: Manufacturer does not recognize "F" numbers (FF: floor flatness, FL: floor levelness).*

H. Concrete substrate's surface must be free of imperfections and irregularities (holes, voids, bumps, cracks, depressions, etc.); a smooth and even surface is required, before proceeding with Rubber Flooring installation. Refer to the latest ASTM F710 standard practice for additional information. Only use high quality Portland cement-based patching and leveling compounds, respecting the manufacturer's instructions for compatibility and use with resilient flooring products and accessories. **CAUTION: When preparing a control joint (saw cut) before installing flooring, always clean out and vacuum the entire depth of the cut before completely filling it.**

I. Concrete substrate must be dry and free of moisture-related problems; never install Rubber Flooring where hydrostatic pressure, osmotic blistering, and/or alkali silica reaction conditions exist. Moisture and pH tests must be performed on all concrete substrates, under in-service conditions, before proceeding with the installation; it is suggested to use a third-party specialist for these tests and to keep records of all results for a minimum of three (3) years. **CAUTION: Never attempt substrate moisture testing or flooring installation until the jobsite's ambient conditions (ambient temperature and ambient relative humidity) are constant and representative of the building's operating conditions. Failure to provide stable ambient conditions on the jobsite will produce inaccurate moisture testing results, in addition to negatively impacting the adhesive's cure and the flooring system's performance.** Turn on the heating, ventilation, and air-conditioning (HVAC) unit 7 days prior to performing moisture tests, to ensure accurate test results and stable ambient conditions for the installation of the Rubber Flooring. Maintain stable room and substrate temperatures prior to moisture tests and Rubber Flooring installation, during the installation, as well as a minimum of 72 hours after the Rubber Flooring has been completely installed. Maintain ambient temperature inside the range of 65°F to 86°F (18°C to 30°C), allowing for no more than ±5°F (±3°C) fluctuations. Maintain ambient humidity inside the range of 35% to 55%. Always ensure that the substrate's surface temperature remains a minimum of 10°F (5°C) above the dew point during the installation, and until 72 hours post-installation.

J. Installation of Rubber Flooring must not commence until the building is enclosed and all other trades have completed their work. General Contractor/Construction Manager is responsible for maintaining a secure and clean working area before, during and after the installation of the Rubber Flooring.

K. Wherever Rubber Flooring may be exposed to direct sunlight, preserve the integrity of the flooring system's components by ensuring proper UV protection is in place. Ensure that glass doors, façades, and windows are fitted with low-e glass (low emissivity) that blocks 99% of harmful rays. It is important to mitigate direct sunlight to ensure proper cure: cover all glass with cardboard, blinds, roller shades, curtains or other suitable material at least 24 hours prior to the installation, for the duration of the installation, and until 72 hours post-installation.

1.7 LIMITED MATERIAL WARRANTY

A. The Rubber Flooring is warranted to be free from manufacturing defects for a period of one (1) year from the date of invoice from Mondo, per the terms and conditions of Mondo's latest Limited Material Warranty.
B. For standard applications, the Rubber Flooring is warranted against excessive wear under normal usage for a period of fifteen (15) years from the date of invoice from Mondo, per the terms and conditions of Mondo's latest Limited Material Warranty.
C. Refer to the Manufactured Product's current Limited Material Warranty for all terms and conditions, which shall be obtained directly from Mondo. In no event shall any warranty provided by any third party (including distributors, insurance and/or private label providers) be considered as valid.

2 PART 2 – PRODUCTS

2.1 MANUFACTURED PRODUCT

2.1.1 Manufacturer

A. Basis-of-Design: Mondo.
B. Mondo manufacturing location: Artigo S.p.A., 17014 Cairo Montenotte (SV), Loc. Carpeneto – Italia.

2.1.2 Description

Specifier Note: Indicate required color(s).

A. Bollo Classic is prefabricated resilient rubber flooring, calendered and vulcanized, with a synthetic rubber base, stabilizing agents and pigmentation, as manufactured by Mondo.
B. Vulcanized, single layer. Shore hardness to be set by the Manufacturer and to conform to industry standard.
C. Health and The Environment: Bollo Classic is manufactured in a facility that has ISO 9001, ISO 14001, ISO 14064 and ISO 50001 certifications, where 100% of the electric energy used comes from renewable sources (hydroelectric, wind power and solar power). At Mondo, we pride ourselves on producing premium high-quality rubber flooring products that can be utilized in areas with stringent health and safety controls: Mondo does not use ingredients on the 2025 LBC Red List CASRN Guide to manufacture Bollo Classic, which includes but is not limited to harmful chemicals of concern like bisphenol A (BPA), formaldehyde, halogens, heavy metals, isocyanates, phthalates, polyvinyl chloride (PVC), perfluorinated compounds (PFC), and perfluoroalkyl and polyfluoroalkyl substances (PFA). Bollo Classic complies with CDPH Standard Method V1.2 (2017) and meets the requirements of numerous indoor air quality certifications (refer to section 2.1.3 Performance), including GREENGUARD Gold.
D. Thickness: 0.106'' (2.7 mm).
E. Colors: Provided in standard, solid colors. Custom colors available upon request; minimum quantities may apply.

F. Surface Texture: Raised round studs.
G. Product Weight: ≈ 0.76 lb/ft^2 (≈ 3.7 kg/m^2).
H. Format: Available in tiles that are 19 $^{10}/_{16}$" x 19 $^{10}/_{16}$" (50 cm x 50 cm).

2.1.3 Performance

A. Performance of the Manufactured Product to conform to the following criteria:

Test Method(s)	Performance Criterion	Condition(s)	Requirement*	Result**
DIN 51130	Slip resistance – ramp test	BGR 181	-	R9
DIN 53436	Toxicity of decomposition gases	At 350°C	-	Non-hazardous
EN 1081	Electrical resistance	Method A	-	> 10^{10} Ohm (insulative)
EN 1399	Cigarette burn	Method A (stubbed)	≥ 4	Compliant
EN 1399	Cigarette burn	Method B (burning)	≥ 3	Compliant
EN 1815	Static electrical propensity	-	-	≤ 2 kV (antistatic)
EN 12667	Thermal resistance	-	-	0.014 m^2 K/W
EN 12667	Thermal conductivity	-	-	0.20 W/mK
EN 13501-1	Fire behaviour	-	-	Class B_{fl} – s1
EN 13893	Slip resistance	-	≥ 0,30 (DS)	Class DS
ISO 34-1	Tear strength	Method B, procedure A	≥ 20 N/mm	Compliant
ISO 48-4 (ISO 7619)	Durometer hardness	Shore A	≥ 70	90
ISO 105-B02	Colour fastness to artificial light	Method 3	≥ 6 blue scale	Compliant
ISO 105-B02	Colour fastness to artificial light	Method 3	≥ 3 grey scale	Compliant
ISO 4649	Abrasion resistance	Method A, 5 N	≤ 250 mm^3	160 mm^3
ISO 4918 (EN 425)	Castor chairs	-	-	Suitable for type W castors
ISO 10140-3	Impact sound insulation	-	-	≈ 8 dB
ISO 23999 (EN 434)	Dimensional stability	-	± 0.40% max	± 0.30%
ISO 24343-1 (EN 433)	Residual indentation	-	≤ 0.20 mm	0.08 mm
ISO 24344 (EN 435)	Flexibility	Method A, 20 mm diameter mandrel	No fissuring	Compliant
ISO 26987 (EN 423)	Chemical resistance	***	-	Resistant
ISO 16000-3, -9	Indoor Air Quality (France): **Decree № 2011-321, A+**	28 days	TVOC: <1.0 mg/m^3	Certified, Class A+
EN 16516, ISO 16000-9	Indoor Air Quality: **AgBB**	28 days	TVOC: <1.0 mg/m^3	Certified
DE-UZ 120	Environmental Label: **Blue Angel**	28 days	TVOC: ≤0.30 mg/m^3	Certified
CDPH V1.2 (2017)	Indoor Air Quality: **CDPH V1.2 (2017)**	14 days	TVOC: ≤0.50 mg/m^3	Compliant
UL 2821/UL 2818	Indoor Air Quality: **GREENGUARD Gold**	14 days	TVOC: ≤0.22 mg/m^3	Certified, Gold
EN 16516, ISO 16000-3, -6, -9	Indoor Air Quality: **Indoor Air Comfort® Gold**	28 days	TVOC: ≤0.16 mg/m^3	Certified, Gold
EN 16516, ISO 16000-9	Environmental Label (Finland): **M1 Emission Classification**	28 days	TVOC: ≤0.30 mg/m^3	Certified, M1

**For each individual test, Manufactured Product is only required to meet any applicable requirement listed in the Requirement column.*
***A result obtained from testing during manufacturing controls and/or third-party verifications may vary between production lots, laboratories, methods and/or equipment, and as such any listed result in the Result column does not constitute representation or warranty as to any particular production lot. Mondo reserves the right to modify product design and/or specifications at any time without notice.*
**** For the complete list of chemicals evaluated, concentrations and contact time, please contact Mondo's Technical Department.*

2.1.4 Limitations

A. Bollo Classic is not designed for unglued, partially glued or temporary applications; Rubber Flooring must be completely glued down to the substrate with adhesive having been fully spread to the edge of the material.

2.1.5 Materials

A. Rubber Flooring: Bollo Classic by Mondo, as specified in section 2.1.2 Description.

2.2 ACCESSORIES

Specifier Note: Accessories are to be specified in accordance with the project requirements.

A. Adhesives certified by Manufacturer: Mondo EP 55 (epoxy), Mondo MP 1000 (acrylic) or MP 95-MAX (acrylic); wet-lay installation is required for all adhesives. **CAUTION: Use of acrylic adhesives in areas with heavy rolling and static loads is not recommended; specify Mondo EP 55 for areas with heavy rolling and static loads. CAUTION: Installations with acrylic adhesives require a porous substrate surface; verify porosity per the latest ASTM F3191 standard practice.** Exceptionally, Mondo PU 300 polyurethane may be recommended for specialty installations, under set conditions. For suitability, recommendations, and use of adhesives, please refer to Manufacturer's latest technical data sheet for specified adhesive(s).

3 PART 3 – EXECUTION

3.1 INSTALLERS

A. Refer to section 1.4 of this document for information on installers.

3.2 EXAMINATION

Specifier Note: The following must be ensured prior to Rubber Flooring installation.

A. Installation of Rubber Flooring must not commence until the building is enclosed and all other trades have completed their work. General Contractor/Construction Manager is responsible for maintaining a secure and clean working area before, during and after the installation of the Rubber Flooring.
B. Flooring Contractor must verify with the General Contractor/Construction Manager that the concrete substrate is ready to receive Rubber Flooring and that it has been effectively prepared according to Manufacturer's latest substrate surface preparation guidelines. Refer to the latest ASTM F710 standard practice for additional information.
C. Flooring Contractor must verify with the General Contractor/Construction Manager that all on or below grade concrete slabs have been installed over a permanent vapor retarder that complies with the latest ASTM E1643 standard practice and the latest ASTM E1745 standard specification. The vapor retarder must be placed directly underneath the concrete slab, above the granular fill, as per the product manufacturer's instructions. The vapor retarder must have a minimum thickness of 10 mil (0.010 in) and must have a perm rating of 0.1 or less.
D. Flooring Contractor must verify with the General Contractor/Construction Manager, in writing, that no concrete sealers or curing compounds have been applied to or mixed into the concrete. Refer to CSI/CSC Section 03 05 00 – Common Work Results for Concrete of Division 3.

E. Flooring Contractor must verify with the General Contractor/Construction Manager that all concrete substrates have been allowed a minimum of 28 days of curing time (normal density concrete curing time is approximately 28 days for development of design strength, having a minimum 3500 psi or 25 MPa in compressive strength).

F. Prior to installation, Installer must ensure that all concrete substrate surfaces are free of bond inhibitors (paint, wax, dust, oil or grease, sealer or curing agent, surface hardener, solvent, asphalt, old adhesive residues, etc.). Concrete substrate surfaces that are powdery or scaly are not acceptable. Bond inhibitors are to be mechanically removed (e.g., light to medium shot-blasting for ICRI CSP #3 to #5). Do not use abatement chemicals; these chemicals can be absorbed by concrete and prevent adhesion. Always confirm removal effectiveness with a mat bond test. Refer to the latest ASTM F3311 standard practice.

G. Prior to installation, Installer must ensure that the concrete substrate's surface is smooth and level within a tolerance of 3/16" (4.8 mm) in a 10-foot (3.05 m) span. *NOTE: Manufacturer does not recognize "F" numbers (FF: floor flatness, FL: floor levelness).*

H. Ensure that imperfections and irregularities (holes, voids, bumps, cracks, depressions, etc.) are corrected and that substrate surfaces are smooth and even, before proceeding with Rubber Flooring installation. Refer to the latest ASTM F710 standard practice for additional information. Only use high quality Portland cement-based patching and leveling compounds, respecting the manufacturer's instructions for compatibility and use with resilient flooring products and accessories. **CAUTION: When preparing a control joint (saw cut), always clean out and vacuum the entire depth of the cut, before completely filling it.**

I. Concrete substrates must be free of moisture-related problems (e.g., hydrostatic pressure, osmotic blistering, and/or alkali silica reaction). Moisture and pH tests must be performed on all concrete substrates, under in-service conditions, before proceeding with the installation; it is suggested to use a third-party specialist for these tests and to keep records of all results for a minimum of three (3) years. For accurate test results, ensure that the HVAC unit has been operational for 7 days and that the ambient conditions are stable, prior to performing any moisture and alkalinity tests. The concrete's surface pH must be between 7 and 11, measured using a pH meter with flat surface electrode. Relative humidity of the concrete slab must not exceed the tolerance of the adhesive specified, in accordance with the latest ASTM F2170 (in situ probes) standard test method, using high quality equipment from Wagner Meters or equivalent. Moisture vapor emissions from the concrete slab must not exceed the tolerance of the adhesive specified, in accordance with the latest ASTM F1869 (anhydrous calcium chloride) standard test method. Verify that concrete moisture and surface pH are acceptable and respect the limits of all products specified. Where tolerances are exceeded and a moisture mitigation system must be used, refer to the latest ASTM F3010 standard practice.

J. General Contractor/Construction Manager to maintain stable room and substrate temperatures, prior to moisture tests and Rubber Flooring installation, during the installation, as well as a minimum of 72 hours after the Rubber Flooring has been completely installed. Maintain ambient temperature inside the range of 65°F to 86°F (18°C to 30°C), allowing for no more than ±5°F (±3°C) fluctuations. Maintain ambient humidity inside the range of 35% to 55%. Always ensure that the substrate's surface temperature remains a minimum of 10°F (5°C) above the dew point during the installation, and until 72 hours post-installation.

K. Installer must perform bond tests with specified products to confirm suitability and strong adhesion to all substrates, as detailed in the latest ASTM F3311 (mat bond evaluation) standard practice. Special attention must be paid to any area where a contaminant was removed, to confirm the effectiveness of the removal. Refer to Manufacturer's latest substrate preparation manual for additional notes on bond tests.

L. If applicable, the General Contractor/Construction Manager must shut off all radiant floor heating systems a minimum of 48 hours before the Installer can proceed with the flooring installation, keeping it off until at least 48 hours after the installation has been completed. Afterwards, the General Contractor/Construction Manager must increase the temperature gradually, allowing no more than 5°F (3°C) per hour, to prevent problems associated with drastic temperature variations.

3.3 PREPARATION

Specifier Note: The surface of the concrete substrate is to be prepared according to Manufacturer's latest guidelines; it is recommended that the Specifier review said guidelines. A copy of the Manufacturer's substrate surface preparation guide may be requested from the Technical Department at Mondo America, Inc. (technical@mondousa.com). The guidelines are considered common practice for the preparation and verification of concrete substrates that will be receiving resilient flooring materials, and as such should not be omitted or altered in any case.

A. Prepare the substrate's surface in accordance with Manufacturer's latest guidelines.

3.4 INSTALLATION

Specifier Note: Products Supplied are to be installed following their latest guidelines; it is recommended that the Specifier review said guidelines. Copies of all installation manuals for Products Supplied can be obtained from the Technical Department at Mondo America, Inc. (technical@mondousa.com). When necessary, installation procedures may be altered to accommodate special project needs, after the Specifier has consulted the Technical Department at Mondo America, Inc. to ensure suitability.

A. Install Rubber Flooring, following Manufacturer's latest guidelines for the specified product.
B. Install all accessories, following Manufacturer's latest guidelines.

3.5 REPAIR

A. Refer to section 1.3.5 Maintenance Material Submittals. Repair material should come from the same original dye lot as initially installed Rubber Flooring.
B. Repairs are to be performed by Flooring Contractor's qualified installers/technicians only, unless a special circumstance merits the Manufacturer to assign a particular specialist from its technical team.

3.6 CLEANING

Specifier Note: A copy of the latest maintenance guidelines can be obtained from the Technical Department at Mondo America, Inc. (technical@mondousa.com).

A. Always wait a minimum of 72 hours after the Rubber Flooring has been completely installed before performing wet maintenance.
B. Always follow Manufacturer's latest maintenance instructions for the Rubber Flooring installed.

3.7 PROTECTION

A. As needed, protect the surface of the Rubber Flooring with 1/8" Masonite, during and after the installation, and prior to final inspection and acknowledged completion of work from Owner.
B. Preserve the integrity of the installation and protect against direct sunlight/UV exposure. Refer to section 1.6. K.

END OF SECTION