

Specifier Note: These Guide Specifications have been created to assist in preparing a Project or Master Specifications. In accordance with Construction Specifications Institute (CSI)'s MasterFormat®, these Guide Specifications can be used with most Master Specifications following simple editing.

*Specifier Note: **The enclosed requirements are intended for indoor installations over concrete.** If the provisions described herein are adopted for installations over other types of substrates or for installations outdoors, Mondo's Warranty will be null and void and the Specifier will be held liable.*

Specifier Note: This Specification describes the Resilient Athletic Flooring 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 Section 09 65 00: Resilient Flooring.

SECTION 09 65 66

Resilient Athletic Flooring

1 PART 1 – GENERAL

1.1 SUMMARY

1.1.1 Products Supplied

- A. Vinyl athletic flooring.
- B. Accessories required for installation, maintenance and repair.

1.1.2 Related Requirements

Specifier Note: The following CSI sections serve as a guide to what is essential information needed to determine the acceptability of the site conditions required for the installation of Resilient Athletic Flooring. The Specifier may choose to include other sections he/she deems necessary.

- 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 ASTM International (ASTM)

- A. ASTM D2047: Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as measured by the James Machine.
- B. ASTM D5116: Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions from Indoor Materials/Products.
- C. ASTM E648: Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
- D. 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.

- E. ASTM E1745: Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs.
- F. ASTM F137: Standard Test Method for Flexibility of Resilient Flooring Materials with Cylindrical Mandrel Apparatus.
- G. ASTM F386: Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces.
- H. ASTM F710: Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- I. ASTM F925: Standard Test Method for Resistance to Chemicals of Resilient Flooring.
- J. ASTM F1514: Standard Test method for Measuring Heat Stability of Resilient Flooring by Color Change.
- K. ASTM F1515: Standard Test Method for Measuring Light Stability of Resilient Flooring by Color Change.
- L. ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- M. ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- N. ASTM F2772: Standard Specification for Athletic Performance Properties of Indoor Sports Floor Systems.
- O. ISO 24340: Standard Specification for Thickness of Wear Layer.

1.2.2 State of California (CA)

- A. CA Section 01350. Standard Method for the Testing and Evaluation of Volatile Organic Compound Emissions from Indoor Sources Using Environmental Chambers.

1.2.3 International Organization for Standardization (ISO)

- A. ISO 9001: Quality management systems – Requirements.
- B. ISO 14001: Environmental management systems – Requirements with guidance for use.

1.3 SUBMITTALS

Specifier Note: The following are typical submittals. The Specifier may choose to include other submittals he/she deems necessary. Technical and warranty information is available for download at www.mondoworldwide.com or may be obtained from the Technical Department at Mondo America, Inc. (United States 1-800-361-3747 • Canada 1-800-663-8138).

1.3.1 Action Submittals

- A. Provide current printed technical data sheets (TDS) and specifications from Mondo for all Products Supplied.
- B. Provide one (1) sample of Vinylsport for verification and approval.
- C. Provide one (1) sample of matching vinyl welding thread for verification and approval.
- D. If line painting has been specified and upon Owner request, Flooring Contractor/Line Marker to provide samples of available paint colors for selection and approval.
- E. As necessary, General Contractor to provide shop drawings prepared for the project that illustrate layouts, details, dimensions and other pertinent data useful to the Flooring Contractor and/or Line Marker.

1.3.2 Informational Submittals

- A. Provide Mondo's current printed substrate surface preparation guidelines.
- B. Provide Mondo's current printed installation guidelines for Products Supplied.

1.3.3 Closeout Submittals

- A. Provide Mondo's current printed maintenance guidelines for Vinylsport.
- B. Provide a numbered certificate of the current printed Mondo Limited Material Warranty for the installed Vinylsport.

1.3.4 Maintenance Materials

- 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 Vinylsport specified).

1.4 QUALITY ASSURANCE

- A. Resilient Athletic Flooring must be manufactured in an ISO 9001 and ISO 14001 certified plant.
- B. Flooring Contractor to be recognized and approved by Mondo.
- C. Flooring Contractor shall be fully acquainted with the existing facility and utilities and shall fully understand the difficulties and restrictions attending the execution of the work under contract. Flooring Contractor is responsible for immediately advising the Owner, in writing, of any restrictions or anticipated difficulty.
- D. Installer must be approved by the Flooring Contractor and must have performed installations of the same scale in the last three (3) years.
- E. If line marking has been specified, Line Marker must be approved by the Flooring Contractor. Painting must be done by professionals with proper experience and qualifications to effectively perform the work; Line Marker to have painted a minimum of ten (10) resilient athletic surfaces in North America.
- F. Bond tests are highly recommended. When requested by Owner, specify materials needed for mock-up installation; always follow the same procedures and use the same materials that have been specified for the actual project. The Owner will be responsible for deeming the mock-up acceptable.

- Minimum mock-up size: 12 inch by 12 inch (30 cm by 30 cm)

1.5 DELIVERY, STORAGE AND HANDLING

- A. Products Supplied must be delivered in their original, unopened and undamaged packaging with identification labels intact.
- B. Products Supplied must be protected from exposure to harmful weather conditions and must be safely stored on a clean, dry, flat surface. Store rolls of Resilient Athletic Flooring upright.
- C. 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 24 hours before work is scheduled to begin so that they may acclimate.
- D. Avoid storing Resilient Athletic Flooring for extended periods of time or additional material trimming may be required.
- E. Products Supplied need not suffer damage during delivery, storage and handling (i.e. dents/scratches, excessive compression or warping, chipped edges, etc.).

1.6 SITE CONDITIONS

- A. The General Contractor or Construction Manager shall be responsible for ensuring all site conditions meet the Mondo's requirements, as referenced herein at sections 3.2 and 3.3. Refer to current version of ASTM F710 for complimentary information.
- B. Concrete slabs, on or below grade, must be installed over a permanent effective vapor retarder, respecting current versions of the standard practice ASTM E1643 and the standard specification ASTM E1745. The vapor retarder must be placed directly underneath the concrete slab, above the granular fill, as per manufacturer's instructions. The vapor retarder must have a perm rating of 0.1 or less and must have a minimum thickness of 10 mil (0.010 in).
- C. No sealers or curing compounds are applied to or mixed into the concrete (refer to Section 03 05 00 – Common Work Results for Concrete of Division 3).
- D. Installation of the Resilient Athletic Flooring to be carried out no sooner than the specified curing time of the 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).
- E. Substrate surface must be free of all contaminants that can inhibit bond (paint, wax, dust, oil or grease, sealer, curing compound, solvent, asphalt, old adhesive residues, etc.). All contaminants must be removed from the surface via mechanical abatement. Use of abatement chemicals is not recommended.
- F. Concrete must have a smooth finish, proper density and be highly compacted with a tolerance of 1/8th of an inch in a 10-foot radius (3.2 mm in 3.05 m radius). Floor Flatness (FF) and Floor Levelness (FL) numbers are not recognized.
- G. Moisture and alkalinity tests must be performed on all concrete substrates, under in-service conditions. It is recommended to turn on the HVAC unit prior to performing moisture testing, in order to ensure stable testing conditions and accurate results. The concrete's surface pH should be between 7 and 10. Relative humidity of the concrete slab must not exceed the tolerance of the adhesive specified, in accordance with the current version of ASTM F2170 (in situ probes). Moisture vapor emissions from the concrete slab must not exceed the tolerance of the adhesive specified, in accordance with the current version of ASTM F1869 (anhydrous calcium chloride).
- H. Maintain stable room and substrate temperatures prior to moisture testing and Resilient Athletic Flooring installation, during the installation, as well as a minimum of 48 hours after the Resilient Athletic Flooring has been completely installed. Recommended ambient temperature range is between 65°F and 86°F (18°C and 30°C) and recommended ambient humidity range is between 35% and 55%.
- I. Installation of Resilient Athletic Flooring will not commence until the building is enclosed and all other trades have completed their work. It is the General Contractor or Construction Manager's responsibility to maintain a secure and clean working area before, during and after the installation of the Resilient Athletic Flooring.

1.7 WARRANTY

- A. The Resilient Athletic Flooring is warranted to be free from manufacturing defects for a period of twenty five (25) years from the date that is 90 days from shipment from Mondo, per the terms and conditions of Mondo's Limited Material Warranty.
- B. Refer to current copy of Mondo's Limited Material Warranty for all terms and conditions, which shall be obtained directly from Mondo. In no event shall any warranties provided by any third parties (including distributors, insurance and/or private label providers) be considered as valid.

2 PART 2 – PRODUCTS

2.1 RESILIENT ATHLETIC FLOORING

2.1.1 Supplier

- A. Mondo: Mondo America Inc., 2655 Francis-Hughes, Laval, QC, H7L 3S8 Canada

2.1.2 Description

Specifier Note: Specify required color(s).

- A. Vinylsport is prefabricated multilayer PVC resilient athletic flooring, consisting of an embossed high density wear resistant vinyl layer, a high density compression resistant vinyl layer, a fiberglass-reinforced foam layer, a dual density foam layer, and finally an anti-slip backing, as supplied by Mondo.
- B. Thickness: 0.276" (7 mm).
- C. Colors: Available in standard colors, with choice of solid background colors or wood grain effect (random marbleization pattern).
- D. Surface Texture: Embossed, matte.
- E. Format: Available in sheets that are 5'10" (1.80 m) wide and 65'7" (20 m) long.

2.1.3 Performance

Specifier Note: Result may vary slightly between production runs, due to manufacturing tolerances and testing methods/equipment used by laboratories during analysis. However, the Resilient Athletic Flooring product supplied must always meet the minimum requirements listed below.

- A. Performance of the Resilient Athletic Flooring product supplied to conform to the following criteria:

Performance Criterion	Test Method	Requirement	Result*
Static Coefficient of Friction (neolite heel)	ASTM D2047	≥0.50 (dry)	0.77 (dry)
Critical Radiant Flux	ASTM E648	≥0.22 W/cm ² (Class 2)	≥0.45 W/cm ² (Class 1)
Flexibility (6 mm mandrel)	ASTM F137	No cracks/breaks	Compliant
Thickness	ASTM F386	7 mm (±0.2 mm) 0.276" (±0.008")	Compliant
Resistance to Chemicals	ASTM F925	≤Slight Change	Compliant **
Heat Resistance	ASTM F1514	ΔE ≤8.0	Compliant
Light Resistance	ASTM F1515	ΔE ≤8.0	Compliant
Force Reduction	ASTM F2772	≥22, ≤33 (Class 2)	Compliant
Vertical Deformation	ASTM F2772	<1.8 (Class B)	Compliant
Ball Bounce	ASTM F2772	≥90.0	Compliant
Surface Finish Effect	ASTM F2772	80-110	Compliant
Thickness of Wear Layer	ISO 24340	2,0 ± 0,1	Compliant
Indoor Air Quality (VOC Emissions)	ASTM D5116/CA01350	-	Compliant

*Result from third-party testing can vary between production lots, laboratories and methods, and as such do not constitute representations or warranties as to any particular production lot. Mondo reserves the right to modify product design and/or specification at any time without notice.

**For the complete list of chemicals tested, concentrations and contact time, please communicate with Mondo's Technical Department.

2.1.4 Limitations

- A. Do not install Vinylsport in areas that are subject to surface impacts, such as designated “free weight” sections in fitness facilities. For use in such areas, please refer to one of Mondo’s recommended rubber flooring products appropriate for the intended application.
- B. Do not install Vinylsport in areas intended for use of bleachers (fixed or mobile) or moderate to heavy rolling and static equipment. For use in such areas, please communicate with Mondo’s Technical Department or refer to one of Mondo’s recommended rubber flooring products appropriate for the intended application.

2.1.5 Material

- A. Supply Vinylsport from Mondo, as specified in section 2.1.2 Description.

2.2 ACCESSORIES

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

- A. Supply adhesive certified by Mondo: Mondo MP 1000 (acrylic) or PU300 (polyurethane) are recommended for installations over concrete. For suitability, recommendations and use, please refer to the specified adhesive’s current printed technical data sheet. For acceptable installations over Mondo Everlay(where surface impacts and heavier dynamic loads are not a concern), Mondo PU300 (polyurethane) is recommended.
- B. Portland cement based patching or leveling compound to be recommended/approved by Mondo.
- C. Vinyl welding thread to be supplied or recommended/approved by Mondo.
- D. If line painting has been specified, line paint to be recommended/approved by Mondo.

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 Resilient Athletic Flooring installation.

- A. Prior to Resilient Athletic Flooring installation, ensure substrate is ready to receive resilient flooring and has been prepared according to Mondo’s current substrate surface preparation guidelines. Refer to current version of ASTM F710 for complimentary information.
- B. Ensure that concrete slabs, on or below grade, are installed over a permanent effective vapor retarder, respecting current versions of the standard practice ASTM E1643 and the standard specification ASTM E1745. The vapor retarder must be placed directly underneath the concrete slab, above the granular fill, as per manufacturer’s instructions. The vapor retarder must have a perm rating of 0.1 or less and must have a minimum thickness of 10 mil (0.010 in).

- C. Ensure that no concrete sealers or curing compounds have been applied to or mixed into the concrete (refer to Section 03 05 00 – Common Work Results for Concrete of Division 3).
- D. Installation of the Resilient Athletic Flooring to be carried out no sooner than the specified curing time of the 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).
- E. Ensure that concrete surface is free of any contaminant that could inhibit bond (paint, wax, dust, oil or grease, sealer, curing compound, solvent, asphalt, old adhesive residues, etc.). All contaminants must be removed from the surface via mechanical abatement. Use of abatement chemicals is not recommended.
- F. Confirm concrete has a smooth finish, proper density and is highly compacted with a tolerance of 1/8th of an inch in a 10-foot radius (3.2 mm in a 3.05 m radius). Floor Flatness (FF) and Floor Levelness (FL) numbers are not recognized.
- G. Moisture and alkalinity tests must be performed on all concrete substrates, under in-service conditions. It is recommended to turn on the HVAC unit prior to performing moisture testing, in order to ensure stable testing conditions and accurate results. The concrete's surface pH should be between 7 and 10. Relative humidity of the concrete slab must not exceed the tolerance of the adhesive specified, in accordance with the current version of ASTM F2170 (in situ probes). Moisture vapor emissions from the concrete slab must not exceed the tolerance of the adhesive specified, in accordance with the current version of ASTM F1869 (anhydrous calcium chloride).
- H. Ensure room and substrate temperatures are maintained prior to moisture testing and Resilient Athletic Flooring installation, during the installation, as well as a minimum of 48 hours after the Resilient Athletic Flooring has been completely installed. Recommended ambient temperature range is between 65°F and 86°F (18°C and 30°C) and recommended ambient humidity range is between 35% and 55%.
- I. Installation of Resilient Athletic Flooring will not commence until the building is enclosed and all other trades have completed their work. It is the General Contractor or Construction Manager's responsibility to ensure that a secure and clean working area is maintained before, during and after the installation of the Resilient Athletic Flooring.

3.3 PREPARATION

Specifier Note: The surface of the concrete is to be prepared according to Mondo's current printed guidelines; it is recommended that the Specifier review said guidelines. A copy of the substrate surface preparation guidelines can be obtained from the Technical Department at Mondo America, Inc. (United States 1-800-361-3747 • Canada 1-800-663-8138). The guidelines are considered common practice for the preparation and verification of concrete substrates that will be receiving Resilient Athletic Flooring, and as such should not be omitted or altered in any case.

- A. Prepare concrete substrate surface in accordance with Mondo's current printed guidelines.

3.4 INSTALLATION

Specifier Note: Products Supplied are to be installed following their current printed guidelines; it is recommended that the Specifier review said guidelines. Copies of all installation guidelines for Products Supplied can be obtained from the Technical Department at Mondo America, Inc. (United States 1-800-361-3747 • Canada 1-800-663-8138). Installation procedures may be altered to accommodate special project needs, as deemed necessary by the Specifier and after he/she has consulted the Technical Department at Mondo America, Inc. to ensure suitability.

- A. Install sheets of Resilient Athletic Flooring following Mondo's current printed guidelines.
- B. Install all accessories following Mondo's current printed guidelines.
- C. If line painting has been specified, Line Marker to paint all lines following the manufacturer's current printed guidelines, respecting any drawing(s) and the Master Specification requirements.

3.5 REPAIR

- A. Refer to section 1.3.4 Maintenance Materials. Repair material must come from the same original dye lot as initially installed Resilient Athletic Flooring.
- B. Repairs are to be performed by Flooring Contractor's qualified installers/technicians only.

3.6 CLEANING

- A. Always wait at least a minimum of 72 hours after the Resilient Athletic Flooring has been completely installed before performing initial maintenance. Always maintain the Resilient Athletic Flooring following Mondo's current printed guidelines.
- B. For surfaces having received newly painted lines, wait a minimum of 10 days after the application of the paint to ensure its proper curing before going over the surface with a scrubber/scrubbing the lines.

3.7 PROTECTION

- A. As needed, protect Resilient Athletic Flooring with 1/8" Masonite during and after the installation, prior to acceptance by Owner.
- B. Preserve the integrity of the installation and protect against direct sunlight/UV exposure; always ensure that windows and glass doors have inherent UV protection and/or are fitted with blinds/UV film.