

## **1 PART 1 – GENERAL**

### **1.1 SUMMARY**

#### **1.1.1 PRODUCTS SUPPLIED**

- .1 Resilient Athletic Flooring.
- .2 Accessories required for installation, maintenance and repair.

### **1.2 REFERENCES**

#### **1.2.1 ASTM INTERNATIONAL (ASTM)**

- .1 ASTM D412: Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension.
- .2 ASTM D2047: Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as measured by the James Machine.
- .3 ASTM D2240: Standard Test Method for Rubber Property (Durometer Hardness).
- .4 ASTM E2179: Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors.
- .5 ASTM F710: Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- .6 ASTM F925: Standard Test Method for Resistance to Chemicals of Resilient Flooring.
- .7 ASTM F970: Standard Test Method for Static Load Limit.
- .8 ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- .9 ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- .10 ASTM F2772: Standard Specification for Athletic Performance Properties of Indoor Sports Floor Systems.

#### **1.2.2 GREENGUARD ENVIRONMENTAL INSTITUTE (GEI)**

- .1 GREENGUARD Certification: Compliant with stringent emission levels for over 360 VOCs, plus a limit on the total of all chemical emissions combined (TVOC).
- .2 GREENGUARD Gold: Compliant with safety factors to account for sensitive individuals (such as children and the elderly) and ensures that a product is acceptable for use in environments such as schools and healthcare facilities.

### **1.3 SUBMITTALS**

#### **1.3.1 ACTION SUBMITTALS**

- .1 Provide current printed data sheets for all Products Supplied.
- .2 Provide samples, 6 inches x 6 inches, for verification of such characteristics as color and surface texture of each specified resilient athletic flooring product.
- .3 If line painting is specified, provide samples of available paint colors for selection and approval.
- .4 As necessary, provide shop drawings prepared for project illustrating layouts, details, dimensions and other data.

### **1.3.2 INFORMATIONAL SUBMITTALS**

- .1 Provide manufacturer's current printed subfloor preparation guidelines.
- .2 Provide manufacturer's current printed installation guidelines for Products Supplied.

### **1.3.3 CLOSEOUT SUBMITTALS**

- .1 Provide manufacturer's current printed maintenance guidelines for resilient athletic flooring.
- .2 Provide manufacturer's current printed standard warranty for resilient athletic flooring.

### **1.3.4 MAINTENANCE SUBMITTALS**

- .1 Provide extra stock materials from original dye lots, for use in facility operations and maintenance (approximately 2% of the total floor surface for each color, surface texture and format of manufactured product).

## **1.4 QUALITY ASSURANCE**

- .1 Manufacturer must be certified ISO 9001.
- .2 Manufactured product must have undergone a vulcanization process; factory lamination should not be accepted as equivalent.
- .3 In accordance with ASTM E648, the manufactured product must have a critical radiant flux  $\geq 0.45\text{W/cm}^2$  (Class 1).
- .4 In accordance with ASTM E662, the manufactured product must have an optical density of smoke  $< 450$ .
- .5 Manufacturer must have a minimum of fifteen (15) years of experience in the manufacturing of prefabricated resilient athletic flooring.
- .6 Installer must have performed installations of the same scale in the last three (3) years.
- .7 Installer to be recognized and approved by the manufacturer.
- .8 If line painting is specified, painting must be done by professionals with proper experience and qualifications to effectively perform the work.

## **1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Products Supplied must be delivered in manufacturer's original, unopened and undamaged packaging with identification labels intact.
- .2 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.
- .3 Climate controlled storage is recommended. Storage temperature must not be below 55°F (13°C) and must not exceed 100°F (38°C).
- .4 Avoid storing manufactured product for extended periods of time or additional material trimming may be required.
- .5 Products Supplied need not suffer damage during handling (i.e. dents/scratches, edge chipping, excessive warping, etc.).

## **1.6 SITE CONDITIONS**

- .1 The Contractor shall be responsible for ensuring all site conditions meet the requirements of the manufacturer
- .2 No concrete sealers or curing compounds are applied or mixed with the subfloors.

- .3 The subfloor surface must be free of any paint, wax, oil, grease, sealer, curing compound, solvent or any other contaminants that may inhibit bond. All contaminants must be removed from the surface via mechanical abatement. Use of abatement chemicals is not recommended.
- .4 Concrete to have smooth, dense finish, and be highly compacted with a tolerance of 1/8" in a 10ft radius (3.2mm in 3.05m radius). Floor flatness (FF) and floor levelness (FL) numbers are not recognized.
- .5 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 85%, in accordance with ASTM F2170 (in situ probes). Moisture vapor emissions from the concrete slab must not exceed the tolerance of the adhesive specified, in accordance with ASTM F1869 (anhydrous calcium chloride).
- .6 Maintain a stable room and subfloor temperature within the recommended range of 65°F to 86°F (18°C to 30°C), 48 hours prior to installation, during the installation, and 48 hours after the installation. Recommended ambient humidity control level is between 35 to 55%.

## **1.7 WARRANTY**

- .1 The resilient athletic flooring is warranted to be free from manufacturing defects for a period of three (3) years from the date of shipment from the manufacturer.
- .2 The resilient athletic flooring is warranted against excessive wear under normal usage for a period of ten (10) years from the date of shipment from the manufacturer.

## **2 PART 2 – PRODUCTS**

### **2.1 MANUFACTURED PRODUCT**

#### **2.1.1 MANUFACTURER**

- .1 Mondo Luxembourg S.A.: Z.I. Foetz - Rue de l'Industrie, L-3895 Foetz, Luxembourg.

#### **2.1.2 DESCRIPTION**

- .1 Advance NG is prefabricated resilient rubber athletic flooring, calendered and vulcanized with a base of natural and synthetic rubbers, stabilizing agents and pigmentation, as manufactured by Mondo Luxembourg S.A. or approved equal in accordance with B7.
- .2 Advance NG is phthalate-free, halogen-free, heavy metal-free, formaldehyde-free, isocyanate-free and BPA-free.
- .3 Thickness: 0.315" (8mm).
- .4 Color: L 92 Dark Maple, Provided in solid background colors with random marbleization throughout wear layer.
- .5 Surface Texture: Smooth.
- .6 Manufactured in two layers which are vulcanized together. The shore hardness of the top layer will be greater than that of the bottom layer; shore hardness of layers to be recommended by the Manufacturer and the limits specified.
- .7 Format: Available in sheets that are 6'1" (1.86m) wide and 42'7" (13m) long [min. 19'8" (6m)/max. 55'9" (17m)].

**2.1.3 PERFORMANCE**

- .1 Manufactured Product tested following standard specification ASTM F2772 (Athletic Performance Properties).
- .2 Performance of manufactured product to conform to the following criteria:

Performance Criterion	Test Method	Requirement	Result
Elongation at Break	ASTM D412	-	≥230%
Tensile Strength	ASTM D412	-	≥500psi
Static Coefficient of Friction	ASTM D2047	≥0.50	>0.60
Hardness (Shore A)	ASTM D2240	-	78 ±5 (wear layer) 60 ±5 (backing)
Abrasion Resistance (H18 wheel, 1000g, 1000 cycles)	ASTM D3389	≤1.0	<0.75g
Critical Radiant Flux	ASTM E648	≥0.45	≥0.45W/cm <sup>2</sup> (Class 1)
Optical Density of Smoke	ASTM E662	<450	<450
Reduction of Impact Sound Transmission	ASTM E2179	-	20dB (ΔIIC)
Thickness	ASTM F386	-	8mm (±0.1mm)
Resistance to Chemicals	ASTM F925	-	Compliant
Static Load Limit (tested at 250psi)	ASTM F970	-	<0.005in
Heat Stability	ASTM F1514	ΔE ≤8.0	Compliant
Light Stability	ASTM F1515	ΔE ≤8.0	Compliant
Force Reduction	ASTM F2772	-	Class 1
Vertical Deformation	ASTM F2772	-	Pass
Ball Rebound	ASTM F2772	-	Pass
Surface Finish Effect	ASTM F2772	-	Pass
Indoor Air Quality	CA 01350	-	Compliant
Greenguard Certification	Greenguard	-	Yes
Greenguard Gold	Greenguard	-	Yes

**2.1.4 MATERIALS**

- .1 Provide Advance NG resilient athletic flooring manufactured by Mondo Luxembourg S.A. or approved equal in accordance with Clause B7.

## **2.2 ACCESSORIES**

- .1 Provide adhesive certified by Manufacturer: Mondo PU 105 (polyurethane). For suitability, recommendations and use please refer to manufacturer's current printed adhesive guidelines.
- .2 Patching or leveling compound to be supplied or recommended or /approved by manufacturer.
- .3 If line painting is specified, all painting products are to be supplied or recommended or approved by manufacturer.

## **3 PART 3 – EXECUTION**

### **3.1 INSTALLERS**

- .1 Refer to Section 1.4 of this document for information on installers.

### **3.2 EXAMINATION**

- .1 Ensure that no concrete sealers or curing compounds have been applied to or mixed into the concrete.
- .2 Subfloor surface must be free of any paint, wax, oil, grease, sealer, curing compound, solvent or any other contaminants that may inhibit bond. All contaminants must be removed from the surface via mechanical abatement. Use of abatement chemicals is not recommended.
- .3 Confirm concrete has smooth, dense finish, and is highly compacted with a tolerance of 1/8" in a 10ft radius (3.2mm in 3.05m radius). Floor flatness (FF) and floor levelness (FL) numbers are not recognized.
- .4 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 85%, in accordance with ASTM F2170 (in situ probes). Moisture vapor emissions from the concrete slab must not exceed the tolerance of the adhesive specified, in accordance with ASTM F1869 (anhydrous calcium chloride).
- .5 Maintain a stable room and subfloor temperature within the recommended range of 65°F to 86°F (18°C to 30°C), 48 hours prior to installation, during the installation, and 48 hours after the installation. Recommended ambient humidity control level is between 35 to 55%.
- .6 Installation of resilient athletic flooring will not commence until the building is enclosed and all other trades have completed their work. Ensure a secure and clean working area before, during and after the installation of the resilient athletic flooring.

### **3.3 PREPARATION**

- .1 Prepare subfloor in accordance with manufacturer's current printed guidelines.

### **3.4 INSTALLATION**

- .1 Install rolls of resilient athletic flooring following manufacturer's current printed guidelines.
- .2 Install all accessories following manufacturer's current printed guidelines.

### **3.5 REPAIR**

- .1 Refer to section 1.3.4 for extra stock materials.
- .2 Repair material must be from the same original dye lot as the manufactured product initially installed.
- .3 Repairs are to be performed by qualified installers/technicians only.

### **3.6 CLEANING**

- .1 Always wait at least a minimum of 72 hours after the resilient athletic flooring has been completely installed before performing initial maintenance.
- .2 For surfaces having received newly painted lines, wait a minimum of 30 days after the application of the paint before scrubbing the surface to ensure proper curing of the paint.
- .3 Always maintain the resilient athletic flooring following manufacturer's current printed guidelines.

### **3.7 PROTECTION**

- .1 As needed, protect resilient athletic flooring with 1/8" masonite during and after the installation, prior to acceptance by the City of Winnipeg.