SECTION 09 96 00

HIGH PERFORMANCE FLOOR COATINGS

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\*\* NOTE TO SPECIFIER\* DuraSeal; wood stains, finishes, and sealers.
This section is based on the products of DuraSeal, which is located at:
101 Prospect Ave.
Cleveland, OH 44115
Email: SportFloors@DuraSeal.com
Web: [www.duraseal.com](http://www.duraseal.com)
[Click Here] for additional information.
For over 100 years, DuraSeal has been the industry leader in providing stains, sealers, finishes, fillers, and maintenance products for the hardwood flooring professional. While DuraSeal initially manufactured coatings for the asphalt, concrete, and wood flooring industries, our specialization today is on products specifically for hardwood floors.
We pride ourselves on manufacturing the most innovative, highest quality products available. DuraSeal has the right product for every application and environmental demand.
Since 1898, we have focused on our most valuable asset, our customer. Our reputation and our relationships are built on heritage, superior quality, innovation, and commitment. We don't take these words lightly, and we are confident in the quality of our products. We make it right the first time, every time!

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. DuraSeal Fast Dry Sanding Sealer.
		2. DuraSeal Quick Dry Oil Sealer.
		3. ARMORSEAL 1K Water-Based Urethane Floor Enamel.
		4. Pro Industrial DTM Acrylic Gloss B66-1250 Series.
		5. DuraSeal DuraClear 1K Polyurethane Finish.
		6. MASTERLINE Polyurethane Finish 550 VOC. (Oil modified finish)
		7. MASTERLINE Water-Based Polyurethane Finish. (Water-Based Finish)
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Add any sections below relevant to this project as required.

* + 1. Section 09 64 00 - Wood Flooring.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):
			1. ASTM D523 - Standard Test Method for Specular Gloss.
			2. ASTM D1640 - Standard Test Methods for Drying, Curing, or Film Formation of Organic Coatings.
			3. ASTM D2369 - Standard Test Method for Volatile Content of Coatings.
			4. ASTM D3828 - Standard Test Methods for Flash Point by Small Scale Closed Cup Tester.
			5. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: Two representative units of each type, size, pattern, and color.
		2. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum of five years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
	2. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	3. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	4. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	5. WARRANTY
		1. Manufacturer's standard limited warranty unless indicated otherwise.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Sherwin-Williams, which is located at:101 Prospect Ave.Cleveland, OH 44115Toll Free Tel: 800-4-SHERWIN (474-3794)Tel: 216-566-2000Fax: 216-566-1392Email: [request info (specifications@sherwin.com)](https://arcat.com/rfi?action=email&company=Sherwin-Williams&message=RE%253A%2520Spec%2520Question%2520(09960dsl)%253A%2520&coid=35477&spec=09960dsl&rep=&fax=216-566-1392);Web: <https://www.sherwin-williams.com/full-spectrum-possibilities> | <https://www.uniflexroof.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with the provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* For new and existing wood floors. Delete article if not required.

* 1. DURASEAL FAST DRYING SANDING SEALER
		1. DuraSeal Fast Dry Sanding Sealer: A water-based sealer that provides exceptional flow and leveling leaving the floor sealed to prevent the paint and finish from penetrating. This water-based sealer is compatible with all DuraSeal water-based finishes.
		2. Physical Properties:
			1. Resin Type: Acrylic/Polyurethane.
			2. Solvent: Water, 2-Methoxymethylethoxypropanol.
			3. Odor: Mild Amine.
			4. Number of Coats: 1 to 2.
			5. Dry-Time per ASTM D1640: Recoat: 2 hours.
				1. Based on conditions of 77 degree F and 50 percent relative humidity at the recommended application rate.
			6. Dry Film Thickness: 0.6 mil/coat.
			7. Flash point per ASTM D3828: Greater than 212 degrees F.
			8. Applicator: Natural bristle or foam brush, lambswool or synthetic pad.
			9. VOC (grams/liter) per ASTM D3960: 275 maximum.
			10. Coverage: Approx. 500-600 sq. ft per gal.
			11. Solids per ASTM D2369: 30 to 33 percent.
			12. Pounds/gallon: 8.44 to 8.74.
			13. pH: 7.5 to 8.5.
			14. Viscosity (centipoises): 60 to 120.

\*\* NOTE TO SPECIFIER \*\* For interior residential and commercial use over prepared hardwood floors. Delete article if not required.

* 1. DURASEAL QUICK DRY OIL SEALER
		1. DuraSeal Quick Dry Oil Sealer: Quickly and conveniently seals wood floors preparing them for finishing. The product provides a firm bond between wood floor substrates and succeeding finish coats. Meets ASTM D1640 definition for a quick dry sealer.
		2. Physical Properties:
			1. Solvent: Mineral spirits.
			2. Odor: Mineral spirits.
			3. Number of Coats: 1 to 2.
			4. Dry-Time per ASTM D1640: Recoat: 2 hours.
				1. Based on conditions of 77 degree F and 50 percent relative humidity at the recommended application rate.
			5. Flash point: TTC 103 degrees F.
			6. Applicator: Natural bristle brush, T-Bar, lambswool or synthetic pad.
			7. VOC (grams/liter) per ASTM D3960: 525 maximum.
			8. Coverage: Approx. 500 sq. ft per gal.
			9. Solids per ASTM D2369: 39.5 to 41.5 percent.
			10. Pounds/gallon: 0.85 to 0.87.
			11. Viscosity (centipoises): Less than 100.

\*\* NOTE TO SPECIFIER \*\* Delete article not required.

* 1. PRODUCT: ARMORSEAL 1K WATER-BASED URETHANE FLOOR ENAMEL

\*\* NOTE TO SPECIFIER \*\* Options below pertain to whether the product is clear or tinted. Delete options not required.

* + 1. ARMORSEAL 1K Water Based Urethane Floor Enamel. A high performance,one component polyester water based urethane, formulated specifically for industrial floor applications. Provides outstanding abrasion resistance, good chemical resistance, with excellent color and gloss retention.
			1. Luster: Gloss.
		2. Product Properties:
			1. Dry Time and Cure: At 4 mils wet 77 degrees F (25 degrees C). Relative Humidity: 50 percent
				1. To Touch: 45 minutes.
				2. Foot Traffic: 8 hours.
				3. Heavy Traffic: 18 hours.
				4. To Recoat (self):

Minimum: 6 hours.

Maximum: 30 days.

* + - * 1. To Cure: 14 days.
			1. Coverage: Approx. 204 to 408 sq ft per gallon (5 to 10 sq m per Liter) Clear.
			2. Coverage: Approx. 136 to 272 sq ft per gallon (3.3 to 6.6 sq m per Liter) Colors.
			3. Cleanup and Reducer: Water.
			4. Storage: Store at room temperature. Keep container tightly closed.
			5. Chemical resistant.
			6. Impact and abrasion resistant.
			7. Performance comparable to two component WB urethane.
			8. Resistant to "hot tire" pick-up.
			9. May exhibit "tire tracking."
		1. Physical Properties:
			1. Resin Type: One component polyester water based urethane.
			2. Density: 8.7 lbs per gal (1.04 kg per L). Clear.
			3. Density: 9.7 lbs per gal (1.16 kg per L). Tinted.
		2. Product Characteristics:
			1. Color: Wide range of colors possible.
			2. Volume Solids:
				1. Clear: 27 to 31 percent.
				2. Colors: 32 to 36 percent. May vary by color.
			3. Weight Solids:
				1. Clear: 31.5 percent. Plus or minus 2 percent.
				2. Color: 41 percent. Plus or minus 2 percent.
			4. VOC (EPA Method 24): Less than 2.8 lbs/gal (340 g/L).
		3. Performance Characteristics:
			1. Abrasion Resistance per ASTM D4060, CS10 wheel, 1000 cycles, 1 kg load: 145 mg loss.
			2. Adhesion per ASTM D4541: 350 psi, 100 percent Concrete Failure.
			3. Direct Impact Resistance (topcoat only) per ASTM D2794: 160 in. lb.
			4. Dry Heat Resistance (topcoat only) per ASTM D2485: 150 degrees F (66 degrees C), intermittent 250 degrees F (121 degrees C).
			5. Flexibility per ASTM D522, 180 degree bend, 1/4 inch (6 mm) mandrel: Passes.
			6. Hot Tire Pick-up, ITM at 140 degrees F (60 degrees C): Passes.
			7. Pencil Hardness (topcoat only) ASTM D3363: 2H.
			8. Reverse Impact Resistance (topcoat only) per ASTM D2794: 100 in-lbs.
			9. Scrub Resistance ASTM 141-6192, 10,000 cycles: TBD.
			10. Slip Resistance, Floors per ASTM C1028: 0.60 minimum.
			11. Static Coefficient of Friction: Pass dry with and without SharkGrip Additive; Pass wet with SharkGrip Additive.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. PRODUCT: PRO INDUSTRIAL DTM ACRYLIC GLOSS B66-1250 SERIES
		1. Pro Industrial DTM Acrylic Gloss B66-1250 Series. A+n interior-exterior, water based, corrosion resistant acrylic coating for light to moderate industrial use. Designed for new construction or maintenance use and can be used directly over prepared substrates.
		2. Product Characteristics:
			1. Chemical resistant.
			2. Corrosion resistant.
			3. Fast drying.
			4. Flash rust-early rust resistance.
			5. Suitable for use in USDA inspected facilities.
			6. Finish: Eg-Shel 10-20 degrees at 60 degrees.
			7. V.O.C.: Less than 50 grams per liter.
			8. Color: As determined by the Architect.
			9. Application: Spray, brush, or roller.
		3. Performance Characteristics:
			1. Compliance: OTC, OTC Phase II, SCAQMD, CARB, CARB SCM 2007, Canada, LEED v4 and v4.1 Emissions, LEED v4 and v4.1 V.O.C., EPD-NSF Certification, and MPI.
			2. System Tested: (unless otherwise indicated).
				1. Substrate: Steel.
				2. Surface Preparation: SSPC-SP10.
				3. Finish: 2 coats Pro Industrial DTM Acrylic B66W01251, 3.0 D.F.T. per coat.
			3. Adhesion: Method: ASTM D4541. Result: 1365 psi.
			4. Corrosion Weathering: Method: ASTM D5894, 7 cycles.
				1. Result: Rating 10, per ASTM D714 for Blistering. Rating 10 per ASTM D1654 for corrosion.
			5. Direct Impact Resistance: Method: ASTM D2794. Result: greater than 176 inch lb.
			6. Dry Heat Resistance: Method: ASTM D2485. Result: 300 degrees F.
			7. Flexibility: Method: ASTM D522, 1/8 inch mandrel. Result: Pass.
			8. Humidity Resistance: Method: ASTM D4585, 2186 hours.
				1. Result: Rating 10 per ASTM D714 for blistering. Rating 10 per ASTM D1654 for corrosion.
			9. Pencil Hardness: Method: ASTM D3363. Result: 3.5B.

\*\* NOTE TO SPECIFIER \*\* For interior residential and commercial wood floors. Delete article if not required.

* 1. PRODUCT: DURASEAL DURACLEAR 1K POLYURETHANE FINISH
		1. Basis of Design: DuraSeal DuraClear 1K Polyurethane Finish (Clear Water Based Finish). A single-component, durable clear wood floor finish for residential, commercial and Sports Floor uses. A less than 275 VOC water-based formulation allows for fast drying finish. Cleans up with warm water.
			1. Luster: Gloss: 90 minimum according to ASTM D523.
		2. Product Properties:
			1. Number of Coats; 1-2.
			2. Dry Time: Based on thin coats, an average temperature of 77 degrees F and 50 percent relative humidity.
				1. Re-Coat: Within 2 hours. Meets ASTM D1640.
				2. Hot coat window 2 to 24 hours.
				3. Allowing Light Traffic: 24 hours after final coat.
			3. Dry Film Thickness: 0.6 mils (0.15 mm) per coat.
			4. Coverage: Approx. 500 to 600 sq ft per gallon (12.3 to 14.7 sq m per Liter).
			5. Odor: Mild Amine.
			6. Clean-Up: Clean application tools with warm water immediately after use.
			7. Storage: Store at room temperature. Keep container tightly closed.
				1. If stored at high temperature, cool to room temperature before use.
				2. Keep from freezing. Product is unusable if frozen.
		3. Physical Properties:
			1. Resin Type: Urethane.
			2. Solids: 29 to 33 percent according to ASTM D2369.
			3. Solvent: Water, Tripropylene glycol n-butyl ether.
			4. Product Weight: 8.65 to 8.76 lbs per gallon (1.04 to 1.05 kg per L).
			5. Viscosity: 90 to 155 cps.
			6. VOC: 1.04 lbs [er ga(125 grams per Liter) or less according to ASTM D3960
			7. pH: 7.0 to 9.0.

\*\* NOTE TO SPECIFIER \*\* SETAFLASH is a registered trademark of Stanhope-Seta Limited.

* + - 1. Flash Point: Greater than 212 degrees F (100 degrees C) SETAFLASH according to ASTM D3828.

\*\* NOTE TO SPECIFIER \*\* For new and existing wood floors. Delete article if not required.

* 1. PRODUCT: MASTERLINE POLYURETHANE FINISH 550 VOC (OIL MODIFIED FINISH)
		1. Basis of Design: MASTERLINE Polyurethane Finish 550 VOC. A durable oil modified finish suitable for large volume applications such as Sports Floors, meeting halls, multiple-unit dwellings, and other commercial uses. The product will have a slight ambering or darkening effect when applied over light-colored surfaces.
			1. Luster: Gloss.
		2. Product Properties:
			1. Dry Time and Cure:
				1. Recoating: 8 hours.
				2. Allowing Light Traffic: Overnight.
			2. Coverage: Approx. 500 to 600 sq ft per gallon (12.3 to 14.7 sq m per Liter).
			3. Clean-Up: Clean applicators with mineral spirits or paint thinner.
			4. Storage: Store at room temperature. Keep container tightly closed.
		3. Physical Properties:
			1. Resin Type: Oil modified urethane.
			2. Density: 7.30 lbs per gallon (0.87 kg per L).
			3. Solvent: Mineral spirits.
			4. Viscosity: 200 cps.
			5. Solids: 44.0 percent.
			6. VOC: less than (4.59 lbs per Gallon) 550 grams per liter.
			7. Flash Point: 105 degree F (40.56 degrees C).
		4. Health and Safety HMIS Rating:
			1. Health: 2.
			2. Flammability: 2.
			3. Reactivity: 0.

\*\* NOTE TO SPECIFIER \*\* Delete article if not required.

* 1. PRODUCT: MASTERLINE WATER-BASED POLYURETHANE FINISH (WATER-BASED FINISH)
		1. Basis of Design: MASTERLINE Water-Based Polyurethane Finish. A single-component, durable wood floor finish for residential, commercial and Sports Floor uses. A less than 275 VOC water-based formulation allows for fast drying finish. Outstanding flow and leveling.
			1. Luster: Gloss: 90 minimum according to ASTM D523.
		2. Product Properties:
			1. Dry Time and Cure: Based on thin coat application, good ventilation, an average temperature of 77 degrees F and 50 percent relative humidity. Lower temperature, higher humidity, lack of air movement or excessive application extends dry time.
				1. Recoating: 2 hours according to ASTM D1640.
				2. Hot coat window is 2 to 8 hours.
				3. Allowing Light Traffic: 24 hours after final coat.
			2. Coverage: Approx. 500 to 600 sq ft per gallon (12.3 to 14.7 sq m per Liter).
			3. Dry Film Thickness: 0.6 mil per coat.
			4. Number of Coats: 1-2.
			5. Odor: Mild Amine.
			6. Clean-Up: Clean application tools with warm water immediately after use.
			7. Storage: Store at room temperature. Keep container tightly closed.
				1. If stored at high temperature, cool to room temperature before use.
				2. Keep from freezing. Product is unusable if frozen.
		3. Physical Properties:
			1. Resin Type: Urethane.
			2. Density: 8.25 to 8.65 lbs per gallon (0.99 to 1.04 kg per Liter).
			3. Solvent: Water, 1-methyl-2-Pyrrolidone, Glycol Ether.
			4. Viscosity: 90 to 130 cps.
			5. Solids: 29.0 to 31 percent according to ASTM D2369.
			6. VOC: 2.29 lbs per gallon (275 grams per Liter) maximum according to ASTM D3960.
			7. pH: 7.00 to 9.00.

\*\* NOTE TO SPECIFIER \*\* SETAFLASH is a registered trademark of Stanhope-Seta Limited.

* + - 1. Flash Point: Greater than 212 degrees F (100 degrees C) SETAFLASH according to ASTM D3828.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly constructed and prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION

\*\* NOTE TO SPECIFIER \*\* Active Link to MFMA Standards: <https://www.maplefloor.org/en/sanding-athletic-maple-floor-resurfacing/> .

* + 1. All floors need to be prepared to MFMA standards (https://www.maplefloor.org/en/sanding-athletic-maple-floor-resurfacing/).
	1. APPLICATION - OIL BASED SYSTEM
		1. DuraSeal Quick Dry Oil Sealer:
			1. Apply at 500 sf per gallon with natural bristle brush, T-Bar, lambswool or synthetic pad.
			2. Allow to dry overnight.
			3. If a 2nd coat of sealer is needed abrade floor with 150 to 180 grit pads.

\*\* NOTE TO SPECIFIER \*\* Delete paint option not required.

* + 1. Paint: Pro Industrial DTM Acrylic Gloss B66-1250 Series
			1. Abrade before applying paint.
			2. Apply lines, logos, etc. in accordance with label directions.
			3. Abrade all painted areas.
			4. Apply a 2nd coat of color.
		2. Paint: Armorseal 1K Water-Based Urethane Floor Enamel.
			1. Abrade before applying paint.
			2. Apply lines, logos, etc. in accordance with label directions.
			3. Abrade all painted areas.
			4. Apply a 2nd coat of color.
		3. Finish: Masterline Polyurethane Finish 550 VOC. (Oil modified finish):
			1. Abrade, Vacuum, and tack the entire floor before applying 1st coat of finish.
			2. The preferred method of application is heavy weighted T-Bar.
				1. Let the floor dry overnight.
			3. Abrade, Vacuum, and tack the entire floor before applying 2nd coat of finish.
				1. Light Foot Traffic: 24 - 48 hours.
				2. Maximum Cure Time: 2 weeks.
	1. SEALER APPLICATION - WATER BASED SYSTEM
		1. DuraSeal Fast Dry Sanding Sealer:
			1. Apply to 500 sf per gallon with natural bristle brush, T-Bar, lambswool or synthetic pad.
			2. Allow to dry overnight.
			3. If a 2nd coat of sealer is needed abrade floor (DuraSeal recommends 150 to 180 grit pads).

\*\* NOTE TO SPECIFIER \*\* Delete paint option not required.

* + 1. Paint: Pro Industrial DTM Acrylic Gloss B66-1250 Series.
			1. Abrade before applying paint.
			2. Apply lines, logos, etc. in accordance with label directions.
			3. Abrade all painted areas.
			4. Apply a 2nd coat of color.
		2. Paint: Armorseal 1K Water-Based Urethane Floor Enamel.
			1. Abrade before applying paint.
			2. Apply lines, logos, etc. in accordance with label directions.
			3. Abrade all painted areas.
			4. Apply a 2nd coat of color.

\*\* NOTE TO SPECIFIER \*\* Delete finish option not required.

* + 1. Finish: Masterline Water-Based Polyurethane Finish. (Water-based finish)
			1. Apply at 500 square feet per gallon with preferred application method.
			2. If applying one coat allow to dry minimum overnight.
			3. If a second coat is desired, apply the second within hot coat window (2 to 8 hours) or buff if over 8 hours and recoat.
				1. Vacuum and tack the floor after buffing process prior to applying second coat.
				2. Light Foot Traffic: 24 hours.
				3. Maximum Cure Time: 1 week.
		2. Finish: DuraSeal DuraClear 1K Polyurethane Finish (Clear water-based finish):
			1. Apply at 500 square feet per gallon with preferred application method.
			2. If applying one coat allow to dry minimum overnight.
			3. If a second coat is desired, apply a second within hot coat window (2 to 24 hours) or buff if over 24 hours and recoat.
				1. Vacuum and tack the floor after buffing process prior to applying second coat.
				2. Light Foot Traffic: Overnight to 24 hours.
				3. Maximum Cure Time: 1 week.
	1. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
	2. CLEANING AND PROTECTION
		1. Clean products in accordance with the manufacturers recommendations.
		2. Touch-up, repair or replace damaged products before Substantial Completion.
		3. Prepare surfaces using the methods recommended by DuraSeal for achieving the best result for the substrate under the project conditions.
			1. Buff the floor so as not to show swirl marks on existing finish. DuraSeal recommends 150 to 180 grit pads.
			2. Vacuum and tack floor accordingly based on DuraSeal Product Data Page.
				1. Masterline Water-Based Polyurethane (Water Based Finish): Use water to tack and allow to dry thoroughly.
				2. Masterline Polyurethane Finish 550 VOC (Oil Modified Finish): Use virgin mineral spirits to tack floor and allow to dry thoroughly.
				3. DuraSeal DuraClear 1K Polyurethane Finish (Clear Water Based Finish): Use water to tack and allow to dry thoroughly.

END OF SECTION