

This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), including *MasterFormat*™, *SectionFormat*™ and *PageFormat*™. A MANU-SPEC is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets []; delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies fire-retardant roof and walking decks as manufactured by Lonseal, Inc. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

SECTION 07 13 54
THERMOPLASTIC SHEET WATERPROOFING

PART 1 GENERAL**1.01 SUMMARY**

- A. Section Includes: This Section specifies fire-retardant roof and walking decks, including:
1. Smoothing/Filling Compounds.
 2. Adhesives.
 3. Self-Adhering (S/A) Tape.
 4. Chemical Sealer.
 5. Caulking Sealant.

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

1.02 RELATED SECTIONS

Specifier Note: Include in this Article only those sections that directly affect the work of this section. Do not include Division 00 or Division 01 sections since it is assumed that all technical sections are related to all project Division 00 and Division 01 sections.

- A. Section [_____].

1.03 REFERENCES

- A. ASTM International (ASTM):
1. ASTM C67 Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile.
 2. ASTM C297 Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions.
 3. ASTM D570 Standard Test Method for Water Absorption of Plastics.
 4. ASTM D751 Standard Test Methods for Coated Fabrics.
 5. ASTM D756 Practice for Determination of Weight and Shape Changes of Plastics Under Accelerated Service Conditions (Withdrawn 1998).
 6. ASTM D1242 Standard Test Methods for Resistance of Plastic Materials to Abrasion (Withdrawn 2004).

7. ASTM D1499 Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Plastics.
 8. ASTM D2299 Recommended Practice for Determining Relative Stain Resistance of Plastics (Withdrawn 1992).
 9. ASTM E108 Standard Test Methods for Fire Tests of Roof Coverings.
 10. ASTM E1155 Standard Test Method for Determining F_F Floor Flatness and F_L Floor Levelness Numbers.
 11. ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
 12. ASTM F1303 Standard Specification for Sheet Vinyl Floor Covering with Backing.
 13. ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
 14. ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- B. FM Global (FM) - FM 1-52 Wind Uplift Test.
- C. ICC Evaluation Service, Inc. (ICC ES) - AC-39 Acceptance Criteria for Walking Decks.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Contract Conditions and Section 01 33 00 - Submittal Procedures.

1.04 ACTION SUBMITTALS

- A. General: Submit listed submittals in accordance with Contract Conditions and Section [01 33 00 - Submittal Procedures] [_____].
- B. Product Data: Submit manufacturer's product data and installation instructions for each product. Include the following information as requested:
1. Product name.
 2. Color.
 3. Manufacturer's SPEC-DATA product sheet.
- C. Shop Drawings:
1. Submit dimensioned drawings with placement details. Include following information:
 - a. Seam layout.

1.05 INFORMATION SUBMITTALS

- A. Quality Assurance:
1. Test Reports: Certified test reports issued by nationally recognized testing laboratory showing product compliance with specified performance characteristics and physical requirements.
 2. Certificate of Compliance: Manufacturer's certification that products furnished meet specified performance characteristics and physical requirements.
 3. Manufacturer's Instructions: Manufacturer's installation instructions; manufacturer's instruction sheets.

Specifier Note: Include the following for projects obtaining LEED® certification.

- B. Sustainable Design Submittals:
1. Certificate of verification of recycled content.

1.06 CLOSEOUT SUBMITTALS

- A. Closeout Submittals: Submit following:
1. Warranty: Warranty documents specified.
 2. Maintenance Data: Maintenance data for installed products in accordance with Section [01 78 00 - Closeout Submittals] [_____]. Include:
 - a. Methods for maintaining installed products.

1.07 QUALITY ASSURANCE

A. Qualifications:

1. Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
2. Manufacturer Qualifications: Company with sufficient capacity to produce and deliver required materials without causing delay in work.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Contract Conditions and. Section 01 41 00 - Regulatory Requirements. Repetitive statements should be avoided.

B. Regulatory Requirements:

1. In accordance with Section [01 41 00 - Regulatory Requirements] [_____].
2. In accordance with ICC-ES, federal, state, local and municipal code requirements.

C. Preinstallation Meetings: Conduct preinstallation meeting to verify project requirements, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Section [01 31 19 - Project Meetings] [_____].

1.08 DELIVERY, STORAGE & HANDLING

A. General: Comply with [01 61 00 - Common Product Requirements] [_____].

B. Ordering:

1. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Delivery, Storage and Protection:

1. Deliver, store and handle in accordance with Section [01 61 00 - Common Product Requirements] [_____].
2. Store materials in clean, dry and temperature-controlled environment.
3. Remove rolls from shipping pallet immediately and store on ends.
4. Wrap opened rolls tightly, face out to avoid material distortion, and store on ends.
5. Maintain storage temperature range of 65 degrees F - 85 degrees F (18 - 29 degrees C).
6. Ensure materials and adhesives are correct for job, and that pattern, color, style and lot numbers match those specified in project finish schedule.

D. Waste Management and Disposal:

Specifier Note: Environment: The disposal of packaging waste into landfill site demonstrates an inefficient use of natural resources and consumes valuable landfill space. Specifying appropriate packaging and construction waste management and disposal procedures may contribute to points required for LEED® construction project certification.

1. Separate waste materials for [reuse] [and] [recycling] [_____] in accordance with Section [01 74 19 - Construction Waste Management and Disposal] [_____].
2. Remove packaging materials from site and dispose of at appropriate recycling facilities.
3. Collect and separate for disposal [paper] [plastic] [polystyrene] [corrugated cardboard] [_____] packaging material [in appropriate onsite bins] [_____] for recycling.

Specifier Note: Coordinate article below with Contract Conditions and with Section 01 78 36 - Warranties.

1.09 WARRANTY

- A. Project Warranty: Refer to Contract Conditions and Section [01 78 36 - Warranties] [_____] for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and does not limit, other rights Owner may have under Contract Documents.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Ensure manufacturer has minimum [5] [_____] years experience in manufacturing.

B. Manufacturer: Lonseal, Inc.

1. Contact: 928 E. 238th St., Carson, CA 90745-6208; Telephone: (800) 832-7111, (310) 830-7111; Fax: (310) 952-7651; E-mail: info@lonseal.com; website: www.lonseal.com.

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal," "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.02 PERFORMANCE CRITERIA

Specifier Note: Review performance requirements using Lonseal, Inc.'s SPEC-DATA® information. Insert values to suit product and project requirements.

A. AC-39 Acceptance Criteria for Walking Decks:

1. Weatherometer Test: To ASTM D1499.
2. Accelerated Aging Test: To ASTM D756.
3. Fire-Retardant Roof Covering: To ASTM E108.
4. Tensile Strength and Elongation: To ASTM D751.
5. Bond Strength: To ASTM C297.
6. Abrasion: To ASTM D1242.
7. Percolation: To AC-39 Section 4.7.
8. Water Absorption: To ASTM D570.
9. Chemical Resistance: To ASTM D2299.
10. Freeze-Thaw: To ASTM C67.
11. Low Temperature Flexibility: To AC-39 Section 4.11.
12. Concentrated Load: To AC-39 Section 4.12.
13. Wind Uplift: To FM 1-52.

2.03 Fire-Retardant Roof and Walking Decks:

A. To ASTM F1303 and As Follows:

1. Size:
 - a. Nominal Thickness: [0.080 inches (2.03 mm)].
 - b. Co-Calendered Wearlayer: [0.032 inches (0.81 mm)].
 - c. Roll Size: 72 inches (1830 mm) wide x 60 feet (18.3 m) long.
2. Weight: 0.7 psf (33.5 N/sq m), 245 lb/roll (111 kg/roll).

Specifier Note: Londeck fire-retardant roof and walking decks are available in 8 different colors. Londeck Coin, Londeck Plate and Londeck Wave also have color choices. Contact manufacturer for color selection.

3. Color: [_____].
4. Surface: [Embossed] [_____].
5. Environmental Features:
 - a. 35% Pre-Consumer Recycled Content.
 - b. LEED Applicable (MR 4.1, MR 4.2).

B. Acceptable Material: Londeck, as manufactured by Lonseal, Inc.

2.04 ACCESSORIES

A. Smoothing/Filling Compounds:

Specifier Note: The following compound may be specified for smoothing and filling indentations, holes and minor cracks on commercial projects and for all applications over concrete.

- 1. Latex-reinforced Portland cement-based smoothing and patching compound with minimum cured compression strength of 3000 psi (20,684 kN/m²).
 - a. Acceptable Material: Lonseal No. 900.
- B. Primer:
 - 1. Purpose: To encapsulate substrate.
 - 2. Acceptable Material: Primer as approved by Lonseal, Inc.

Specifier Note: Note that use of adhesives and other materials not specifically recommended in writing by Lonseal, Inc., will void the Lonseal, Inc. product warranty and may result in damage to the vinyl sheeting, jeopardizing appearance and performance.

- C. Adhesives:
 - 1. Porous, Nonporous and Vertical Applications: Premium quality, white, acrylic adhesive.
 - a. Acceptable Material: No. 555 Transitional Acrylic manufactured by Lonseal, Inc.
 - 2. General Use for Every Substrate: Fast drying, nitrile rubber-based, high-strength adhesive formulated for spray, roller or brush application.
 - a. Acceptable Material: No. 400 Contact manufactured by Lonseal, Inc.
 - 3. Exposed Perimeter Application: Two-component, high performance epoxy adhesive for indoor-outdoor installations.
 - a. Acceptable Material: No. 300 Epoxy manufactured by Lonseal, Inc.
- D. Self-Adhering (S/A) Tape: Vinyl backed.
 - 1. Size: 2 1/2 inches wide x 100 feet long (64 mm x 31 m) rolls.
- E. Chemical Sealer:
 - 1. Acceptable Material: Lonsealer Type C, manufactured by Lonseal, Inc.
- F. Weld Thread: 4 mm color matched.
- G. Caulking Sealant: Clear Exterior.
 - 1. Acceptable Material: 2300 Construction Tripolymer Sealant, manufactured by Geocel Corporation.

Specifier Note: Edit Paragraph below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Section 01 25 13 - Product Substitution Procedures.

2.05 PRODUCT SUBSTITUTIONS

- A. Substitutions: [In accordance with [Section 01 25 13 - Product Substitution Procedures] [_____]] [No substitutions permitted].

PART 3 EXECUTION

3.01 INSTALLERS

- A. Provide experienced and qualified technicians to install fire-retardant roof and walking decks.

3.02 MANUFACTURER'S INSTRUCTIONS

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

- A. Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions and Lonseal, Inc.'s SPEC-DATA sheets.

3.03 EXAMINATION

- A. Site Verification of Conditions:
 - 1. Test moisture and alkalinity to ASTM F1869, F2170 and F710.

2. Maintain substrate temperature at 65 degrees - 85 degrees F (18 - 29 degrees C) for 48 hours prior to, during and after installation.
3. Ensure substrate temperature is minimum 5 degrees F (2.8 degrees C) above dew point prior to installation.
4. Ensure other trades remain out of work area and off of fire-retardant roof and walking decks until installation contractor advises it is safe to enter or for 48 hours post installation.
5. Verify installation of flashings and metal fittings.

3.04 PREPARATION

- A. Coordinate installation of Lonseal, Inc.'s fire-retardant roof and walking decks with other construction trades.
- B. Prior to Installation of Lonseal Fire-Retardant Roof and Walking Decks Over Concrete:
 1. Test for moisture vapor drive using either "a" or "b" below.
 - a. ASTM F1869, with maximum slab moisture content not to exceed 5.0 lb (2.3 kg).
 - b. ASTM F2170, with maximum slab moisture content not to exceed 75%.
 2. Test for alkalinity using method "a" below.
 - a. ASTM F710, maximum alkalinity not to exceed pH of 9.
 3. Test that substrate is flat and level to ASTM E1155.
 - a. Floor Flatness (FF): FF 18.
 - b. Floor Levelness (FL): FL 15.
- C. Prepare installation site to receive fire-retardant roof and walking decks. Do not install fire-retardant roof and walking decks directly to existing coverings.
- D. Refer to Lonseal, Inc.'s Technical Manual for Exterior Products for complete preparation requirements and for instructions related to different substrate preparation.

Specifier Note: Contact Lonseal's Technical Department before specifying Londeck over other surfaces.

- E. Install fire-retardant roof and walking decks over [concrete] [_____] in accordance with manufacturer's instructions.
- F. Acclimate plywood substrate panels to match ambient humidity. Verify maximum 15% moisture content with electronic moisture meter.
- G. Remove contaminants from surfaces to receive fire-retardant roof and walking decks.
- H. Finish installation surfaces level, smooth, free from protuberances and uneven joints and in accordance with manufacturer's instructions.

Specifier Note: Refer to Lonseal's Technical Manual for Exterior Products for installing plywood decking, composite panels and for retrofit instructions.

- I. Install plywood decking and composite panels for retrofit application in accordance with manufacturer's instructions
- J. Provide 1/16 inch per foot (5.2 mm per 1.6 m) slope away from building. Repair drains that are not set below deck surface. Apply primer to installation surfaces prior to patching or filling in accordance with underlayment manufacturer's instructions.
- K. Fill out surface depressions and low or uneven surfaces with latex-reinforced, Portland cement-based smoothing and patching compound.

3.05 INSTALLATION

- A. Apply adhesive as specified in Lonseal's Technical Manual for Exterior Products.
- B. Refer to Lonseal's Technical Manual for Exterior Products for:
 1. Seaming methods and options.
 2. Deck edge termination options.
 3. Creating coves and corners.
 4. Installing Londeck on vertical surfaces.

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5. Installation near drains and scuppers.
 6. Installation at parapet walls.
 7. Installation on stairs.

3.06 FINAL CLEANING

- A. Proceed in accordance with Section [01 74 23 - Final Cleaning] [_____].
- B. Upon completion and verification of installation, remove surplus materials, rubbish, tools and equipment.

3.07 PROTECTION AND MAINTENANCE

Specifier Note: Coordinate the following Article with Section 01 76 00 - Protecting Installed Construction.

- A. Protect installed product from damage during construction in accordance with Section [01 76 00 - Protecting Installed Construction] [_____].

Specifier Note: Refer to Lonseal's Technical Manual for Exterior Products for fire-retardant roof and walking deck cleaning instructions.

- B. Apply trisodium phosphate solution with mop. Scrub with deck brush or low speed rotary machine. Rinse with clean water.

END OF SECTION