

This section includes multilayer modular flooring planks constructed using a waterproof composite core material having a decorative wear layer.

This section is for Lico Hydrofix® for use as and interior finished flooring for residential and commercial applications. Hydrofix® can be installed on, above, or below grade. Suitable substrates are wood and concrete subfloors or properly prepared existing flooring. Hydrofix® is suitable for use over hydronic in-floor heating systems.

This section includes performance, proprietary, and descriptive type specifications; edit text to avoid conflicting requirements. Sections from other Spec SUITE master specification packages may also be used with CMS sections and vice-versa. Refer to our marketing home page: <http://www.SPEX.CA>.

Part 1 General

1.1 SECTION INCLUDES

In this article, select the components or assemblies that are intended to be part of the content of this section and will not be included in other sections.

- .1 Composite planks.
- .2 [Treads and risers.]
- .3 [Trims and moldings.]
- .4 [Surface preparation of existing [concrete][plywood] subfloors including spot levelling and patching.]

1.2 RELATED SECTIONS

In this article, indicate those sections that inter-rely on this section. The listing below is only partial and should be edited to include those sections specific to the project that describe subjects or products that affect this section directly.

- .1 Section 03 30 00 - Cast-in-Place Concrete: Concrete substrate.
- .2 Section 06 10 00 - Rough Carpentry [: Wood subfloor].
- .3 Section 06 20 00 - Finish Carpentry [: Trims and mouldings].

1.3 REFERENCES

Specifiers are reminded that code standards are minimum standards, and if applicable to the specified Product(s), citing the latest version may be appropriate even though the latest version may be different from what is included in the applicable codes. Edit this article after editing the rest of this section. Only list reference standards below, that are included within the text of this section, when edited for a project specification - delete other references that do not apply.

- .1 ECO Institute.
- .2 RAL gGmbH Blue Angel Environmental Award.
- .3 MMFA Multilayer Modular Flooring Association.
- .4 ASTM C881/C881M-15 - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete.

- .5 ASTM E84-17a - Standard Test Method for Surface Burning Characteristics of Building Materials.
- .6 ASTM E90-09(2016) - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
- .7 ASTM E492-09(2016) e1 - Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine.
- .8 ASTM E2179-03(2009) - Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors.
- .9 ASTM F710-17 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- .10 ASTM F1869-16a - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- .11 ASTM F2170-17 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- .12 ASTM D4060 Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser.
- .13 BS EN 317:1993 - Particleboards and fibreboards - Determination of swelling in thickness after immersion in water.
- .14 BS EN 433:1994 - Resilient floor coverings - Determination of residual indentation after static loading.
- .15 BS EN 1815:2016 - Resilient and laminate floor coverings - Assessment of static electrical propensity.
- .16 BS EN 13501-1:2007+A1:2009 - Fire classification of construction products and building elements - Classification using test data from reaction to fire tests.
- .17 BS EN 16511:2014 - Loose-laid panels - Semi-rigid multilayer modular floor covering (MMF) panels with wear resistant top layer.
- .18 BS EN 51130:2014 - Testing of Floor Coverings - Determination of the Anti-Slip Property - Workrooms and Fields of Activities with Slip Danger - Walking Method - Ramp Test.

1.4 SYSTEM DESCRIPTION

Edit and use this article carefully; restrict statements to describe the combined result of the components used to piece together an operating or functional assembly. Do not repeat statements from the SECTION INCLUDES article.

- .1 Multilayer modular plank floating floor system with interlocking connecting system with factory-attached sound underlayment applied over [concrete slab] [wood substrate][existing tile flooring][existing resilient flooring][properly prepared substrate].

1.5 ADMINISTRATIVE REQUIREMENTS

- .1 Section 01 31 00: Project management and coordination procedures.
- .2 Coordination:

- .1 Coordinate with other work having a direct bearing on work of this section.
- .2 Coordinate the work with Section [03 30 00][06 10 00] for substrate flatness tolerances and preparation.
- .3 Coordinate the work with the installation of in-floor heating systems.

1.6 SUBMITTALS FOR REVIEW

Do not request submittals if this specification section or drawings sufficiently describe the products of this section - or if proprietary specifying is used. This requested review of submittals increases the possibility of unintended variations to the contract documents, thus increasing a consultant's liability. The following submittals are intended for review to determine eligibility for the project.

- .1 Section 01 33 00: Submission procedures.
- .2 Product Data: Provide data on product characteristics, performance criteria and limitations.
- .3 Samples: Submit two (2) samples [<[] mm><<[] inches>>] in size illustrating [texture] [,pattern] [,colour] [,sheen].
- .4 [Manufacturer's Certificate: Certify that Products meet or exceed specified requirements.]

1.7 SUBMITTALS FOR INFORMATION

The following submittals are for information only; do not request these submittals if the information submitted will be assessed for acceptability.

- .1 Section 01 33 00: Submission procedures.

When manufacturer's written instructions for specific installation requirements are referenced in Part 3 - Execution, include the following request for submittal of those instructions. Edit the Part 3 statements to avoid conflict with manufacturer's written instructions.

- .2 Installation Data: Manufacturer's special installation requirements, including special procedures, perimeter conditions requiring special attention [and []].
- .3 Environmental Declarations: Submit eco-labelling and environmentally friendly product declaration certified by [Eco Institute][and Blue Angel].

Include the following ONLY if specifying for a LEED project. Specify only the technical requirements necessary to achieve the credits desired for this project.

- .4 Sustainable Design:
 - .1 Section [01 35 18]: LEED documentation procedures.
 - .2 Provide required LEED documentation for Product [low-emitting materials][Green Guard certification].

1.8 CLOSEOUT SUBMITTALS

The following submittals are for project close-out purposes; do not request these submittals if the information submitted will be assessed for acceptability.

- .1 Section 01 78 10: Submission procedures.

- .2 Operation and Maintenance Data: Include maintenance procedures, recommended maintenance materials, a suggested schedule for cleaning, stain removal methods, and polishes.

Include the following ONLY if specifying for a LEED project.

- .3 Sustainable Design Closeout Documentation: [_____].

1.9 MAINTENANCE MATERIAL SUBMITTALS

- .1 Section 01 78 40: Maintenance and extra material requirements.
- .2 Extra Stock Materials: Provide [<[_____] sq m><<[_____] sq ft>>] of flooring material for maintenance purposes.

1.10 QUALITY ASSURANCE

- .1 Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum [thirty (30)] years [documented] experience.
- .2 Installer Qualifications: Company specializing in performing the work of this section with minimum [three (3)] years documented experience [and approved by the manufacturer] [and certified by MMFA].

1.11 MOCK-UP

Use this article for assessing full sized erected assemblies for review of construction, coordination of work of several sections, testing, or observation of operation. A mock-up may also be used for assessing field applied finishes.

- .1 Section 01 45 00: Requirements for mock-up.
- .2 Provide [<[_____] mm><<[_____] ft>>] mock-up including [stair nosing's] [risers] [trim and mouldings].
- .3 Locate [where directed by consultant].
- .4 Approved mock-up [may] [may not] remain as part of the Work.

1.12 DELIVERY, STORAGE, AND PROTECTION

- .1 Section 01 61 00: Transport, handle, store, and protect products.
- .2 Deliver products in their original packages and store in enclosed shelter, off-ground.
- .3 Protect stored materials to manufacturer's instructions.
- .4 Flooring should be stored in a climate-controlled location with an average temperature between <18 and 29 degrees Celsius><<65 and 85 degrees Fahrenheit>>.

1.13 SITE CONDITIONS

- .1 Acclimation: Place flooring material in the installation location a minimum of 24 and up to 48 hours prior to installation.
- .2 Ambient Conditions:
 - .1 Do not install components when ambient conditions are outside of manufacturer's recommendations.

- .2 Provide heat, light, and ventilation prior to installation.
- .3 Flooring should be installed in a climate-controlled location over a substrate with average temperature between <18 and 29 degrees Celsius><65 and 85 degrees Fahrenheit>>.
- .4 Install flooring after other finishing operations have been completed.

1.14 WARRANTY

This article extends the warranty period beyond the one (1) year contract warranty period. Extended warranties add to construction cost and may present difficulties to the Owner by enforcing them. Specify with caution.

- .1 Section 01 78 10: Warranties.
- .2 Provide a [fifteen (15) year commercial] and [Limited lifetime domestic/residential] warranty including coverage for joint integrity, wear resistance, stain resistance, and fade resistance.

Part 2 Products

2.1 MANUFACTURERS

- .1 Manufacturer - Basis of Design:
 - .1 Lico US; TEL: 1(800) 434-3750, Website: lico-us.com.
- .2 Substitutions: [Refer to Section 01 62 00] [Not permitted].

2.2 PERFORMANCE CRITERIA

Edit this article carefully; restrict statements to identify assembly or system performance requirements or function criteria only. Delete paragraphs not appropriate to the project. Performance specifying permits system manufacturers the latitude to adjust or redesign proprietary systems to achieve requirements specified in this section.

- .1 Impact Sound Reduction:
 - .1 Floor Covering Impact Sound Reduction (Flooring-Concrete Floor) to ASTM E2179: Increase in Impact Insulation Class (Δ IIC); minimum 26.
 - .2 Impact Sound Transmission (Flooring-Concrete Floor-No Ceiling) to ASTM E492: Impact Insulation Class (IIC); 59.
- .2 Sound Transmission Classification:
 - .1 Sound Transmission Loss (Flooring-Concrete Floor-No Ceiling) to ASTM E90: STC 56.

Select European (EN) standard or North American (ASTM) standard and delete other.

- .3 Fire Classification
 - .1 [EN 13501-1:
 - .1 Fire Behavior: Class B.
 - .2 Smoke Development: Class S1.]

- .4 Water Resistance: EN 317, no swelling after 24h.
- .5 Slip Resistance:
 - .1 EN 13895: Class DS.
 - .2 EN 51130: R9.
- .6 Electrostatic Propensity: < 2.0 kV in accordance with EN 1815.
- .7 Residual Indentation: maximum 0.03 mm in accordance with EN 433.
- .8 Environmental Characteristics:
 - .1 Green Guard certified product.
 - .2 Blue Angel certified low emitting for improved indoor air quality.
 - .3 Formaldehyde Free.

2.3 MATERIALS

- .1 Multilayer Modular Flooring: to EN 16511 [Commercial 32 classification] [Domestic/Residential 23 classification], UV and stain resistant, semi-rigid extruded floor covering consisting of:
 - .1 Surface Layer: 0.55 mm wear layer over high-definition digital printing.
 - .2 Core: Waterproof, high-density, PVC-based extrusion; less than 0.1% plasticizers.
 - .3 Dimensions:
 - .1 Total Thickness: <5.5 mm><_____ inches>>.
 - .2 Planks: [<228.6 mm> wide<<[_9_] inches <1520 mm><[_60_] inches>>] long.
 - .4 Factory Underlayment: Attached [<0.8 mm><<0.03 inch>>] thick extruded polystyrene acoustic underlay.
 - .5 Edging: Interlocking system for glue-free installation.
 - .6 Pattern/Design: [Bush Oak][White Oak Polar][Walnut][Oak Fossil][Bush Oak Smoked][Oak Trentino][White Oak Sand][Rio Palisander][Altholz Macchiato Stripe][Altholz Mocca Stripe][Kastanie Living Acacia].
 - .7 Acceptable Product: Lico Hydrofix®.

2.4 ACCESSORIES

Include this article to identify additional components and/or accessories supplied by this section are required to complement the base materials cited above. Delete if provided by other sections (ex. 06 20 00 - Finish Carpentry).

- .1 Decorative Trim: [Refer to Section 06 20 00.][Matching material provided by flooring manufacturer, supply in longest available lengths, including:]

This is a sample schedule and may not be indicative of all components. Refer to the Drawings and coordinate. Delete if provided by other sections (ex. 06 20 00 - Finish Carpentry).

- .1 Wall base, [<65 mm><<2-1/2 inches>>] high, [_____] style.
- .2 Quarter round, [<19 mm><<3/4 inch>>].
- .3 Reducer/transition strips.

- .4 T-Molding.
- .5 Stair nose, size and profile as detailed.
- .6 End caps.
- .2 Metal Trim: [Anodized aluminum] [Stainless steel].
 - .1 Reducer/transition strips.
 - .2 T-Molding.
- .3 Sealant: As specified in Section 07 92 00.
- .4 Subfloor Leveller: Premix polymer-modified, cementitious type. Mix with potable water.
- .5 Joint and Crack Filler: Low-viscosity epoxy adhesive to ASTM C881.

Part 3 Execution

3.1 EXAMINATION

- .1 Section 01 70 00: Verify existing conditions before starting work.
- .2 Verify that field measurements are as [indicated on Drawings] [indicated on Shop Drawings] [instructed by the manufacturer].

Wood Subfloors

- 1. *Do not install material over wood subfloors that lay directly on concrete or over dimensional lumber or plywood used over concrete.*
- 2. *All other subfloors - Plywood, OSB, particleboard, chipboard, wafer board, etc. must be structurally sound and must be installed following their manufacturer's recommendations. Local building codes may only establish minimum requirements of the flooring system and may not provide adequate rigidity and support for proper installation and performance.*
- 3. *If the surface of the wood subfloor is not smooth, a 1/4" underlayment panel must be installed over the subfloor, per the underlayment manufacturer's written instructions.*
- 4. *Hydrofix resilient flooring is not recommended directly over fire-retardant treated plywood or preservative treated plywood. An additional layer of APA rated 1/4" thick underlayment should be installed.*

- .3 Verify substrate is ready to receive work of this section.
- .4 Subfloors shall be smooth, permanently dry, clean, and free all foreign material such as dust, wax, solvents, paint, grease, oils, and old adhesive residue. The surface must be hard and dense, and free from powder or flaking.
- .5 Substrate Flatness Tolerance: 3/16 inch in 10 feet or 1/8 inch in 6 feet.

Coordinate manufacturer's requirements for flooring installation over in-floor hydronic heating systems, including the thickness of concrete cover over the heating elements. Radiant heat components must have a minimum of 13 mm (1/2 inch) separation from the product.

- .6 [Verify that heated subfloor has been operational for at least 2 weeks prior to installation to reduce residual moisture within the concrete.]

Hydrofix® flooring can be installed over most existing hard surface floor coverings, provided that the existing floor surface is clean, flat, dry and structurally sound. Consult manufacturer for preparation and limitations. Do not install over carpet, carpet tile or heavily cushioned resilient floor coverings.

- .7 [Prepare existing floor coverings scheduled to remain in accordance with manufacturer's written instructions.]

3.2 PREPARATION

- .1 Comply with ASTM F710 and manufacturer's recommendations for surface preparation.
- .2 Perform [moisture test] [and relative humidity test] where required to manufacturer's requirements.
 - .1 Do not install when the moisture vapour emission rate (MVER) exceeds <3.63 kg per 92.9 m²><<8 lbs. per 1,000 sq. ft.>> per 24 hours, when using the anhydrous calcium chloride test (ASTM F1869). Do not exceed the flooring manufacturer's recommendations for MVER.
 - .2 Do not install when the relative humidity (RH) exceeds 85% when using the in-situ probe method (ASTM F2170).
- .3 Do not exceed the flooring manufacturer's recommendations for alkalinity (pH).

Include levelling and substrate preparation when tolerances specified by this section are not included in other sections (ex. 03 30 00 - Cast-in-Place Concrete) or when existing conditions in a renovation project reveal unacceptable substrate conditions.

- .4 Crack Repairs:
 - .1 Provide crack filler to all dormant cracks greater than <0.4 mm><<1/64 inch>> in width.
 - .2 For cracks from <3 mm to 6 mm><<1/8 inch to 1/4 inch>>, V-notch crack and fill with sand. Pour crack filler into crack until filled.
 - .3 Where cracks extend through the slab, provide cap seal to the back side of the crack when using crack filler.
 - .4 For cracks larger than <6 mm><<1/4 inch>>, open with crack chaser and clean. Patch with patching compound, level to adjacent sub-floor elevation.
- .5 Patching and Levelling:
 - .1 [Fill and level to achieve specified tolerance for flatness][Level as required to achieve the following flatness tolerances: 3/16 inch in 10 feet or 1/8 inch in 6 feet.]
 - .2 Remove rough areas, projections, ridges, and bumps, and fill low spots, control or construction joints, and other defects.
 - .3 Grind high spots to match adjacent floor level and to meet specified tolerances.

3.3 FLOOR INSTALLATION

- .1 Install flooring to manufacturer's written instructions.
- .2 Minimize shade variation by mixing planks from several cartons.
- .3 Install flooring symmetrically about room center line unless otherwise indicated.

- .4 Stagger end joint locations minimum of [$<250-300\text{ mm}><<10-12\text{ inches}>>$].
- .5 Fit flooring neatly around interruptions. Follow shape of interrupting items closely when joint will remain exposed.
- .6 Install divider strips where flooring terminates at centerline of doors and adjacent to other materials or unfinished floor areas.
- .7 Expansion Space: Provide minimum [$<10\text{ mm}><<3/8\text{ inch}>>$] expansion space at walls and other terminations of flooring, unless otherwise indicated on Drawings.
- .8 Install accessories as indicated or required.
- .9 Seal flooring penetrations and perimeters at wet areas with silicone sealant.

3.4 STAIR TREAD AND RISER INSTALLATION

- .1 Install treads and risers to manufacturer's written instructions.
- .2 Cut planks to stair width; cut depth to allow width of nosing.
- .3 After dry fitting treads and risers, install with adhesive. Install [quarter round] [trim] at tread/riser intersection.
- .4 Do not use stairs until adhesive is fully set.

3.5 TRIM AND MOULDINGS

- .1 Nail [baseboards] [quarter round] to wall; do not nail to flooring.

3.6 CLEANING

- .1 Section [01 74 00]: Cleaning installed work.
- .2 Clean and polish floor surfaces in accordance with manufacturer's written instructions.

3.7 PROTECTION OF FINISHED WORK

- .1 Section [01 78 40]: Protecting installed work.
- .2 Prohibit traffic on floor finish for 48 hours after installation.

END OF SECTION