

SECTION 09 65 00

RESILIENT FLOORING

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM E648	(2017a) Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
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JAPANESE STANDARDS ASSOCIATION (JSA)

JIS A 5536	(2015) Adhesives for Resilient Textile or Laminate Floor Coverings
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JIS A 5705	(2010) Polyvinyl Chloride Floorcoverings
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MINISTRY OF LAND, INFRASTRUCTURE, TRANSPORT AND TOURISM (MLIT)

MLIT SS Chapter 19	(2019) Public Building Construction Standard Specifications Chapter 19: Interior Finishing Works
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1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for [Contractor Quality Control approval.] [information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] Submittals with an "S" are for inclusion in the Sustainability eNotebook, in conformance to Section 01 33 29 SUSTAINABILITY REPORTING. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Resilient Flooring and Accessories; G[, [_____]]

SD-10 Operation and Maintenance Data

Resilient Flooring and Accessories; G[, [_____]]

1.3 JAPAN PUBLIC BUILDING CONSTRUCTION STANDARDS

Follow MLIT SS Chapter 19 for interior finishing works.

1.4 INDOOR AIR QUALITY

1.4.1 Floor Covering Materials

Provide [Vinyl Composition Tile][Sheet Vinyl Flooring][Rubber Tile][Rubber Sheet Flooring][Luxury Vinyl Tile][Solid Vinyl Tile][Sheet Linoleum][Linoleum Tile][Cork Flooring], and wall base products certified to meet indoor air quality requirements of third-party programs.

1.4.1.1 Adhesives, Caulking and Sealants

Provide products certified to meet emission requirement of F 4-Star and JAIA 4VOC.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver materials to the building site in original unopened containers bearing the manufacturer's name, style name, pattern color name and number, production run, project identification, and handling instructions. Store materials in a clean, dry, secure, and well-ventilated area free from strong contaminant sources and residues with ambient air temperature maintained above 20 degrees C and below 30 degrees C, stacked according to manufacturer's recommendations. Remove resilient flooring products from packaging to allow ventilation prior to installation. Protect materials from the direct flow of heat from hot-air registers, radiators and other heating fixtures and appliances. Observe ventilation and safety procedures specified in the MSDS. Do not store rubber surface products with materials that have a high capacity to adsorb volatile organic compound (VOC) emissions, including [_____]. Do not store exposed rubber surface materials in occupied spaces. [Do not store [_____] near materials that may off gas or emit harmful fumes, such as kerosene heaters, fresh paint, or adhesives.]

1.6 ENVIRONMENTAL REQUIREMENTS

Maintain areas to receive resilient flooring at a temperature above 20 degrees C and below 30 degrees C for 3 days before application, during application and 2 days after application, unless otherwise directed by the flooring manufacturer for the flooring being installed. Maintain a minimum temperature of 13 degrees C thereafter. Provide adequate ventilation to remove moisture from area and to comply with regulations limiting concentrations of hazardous vapors.

1.7 SCHEDULING

Schedule resilient flooring application after the completion of other work which would damage the finished surface of the flooring.

1.8 WARRANTY

Provide manufacturer's standard performance guarantees or warranties that extend beyond a one year period.

1.9 EXTRA MATERIALS

Provide extra flooring material of each color and pattern at the rate of 5 tiles for each 1000 tiles. Provide extra wall base material composed of 6 m of each type, color and pattern. Package all extra materials in original properly marked containers bearing the manufacturer's name, brand

name, pattern color name and number, production run, and handling instructions. Provide extra materials from the same lot as those installed. Leave extra stock at the site in location assigned by Contracting Officer.

PART 2 PRODUCTS

2.1 VINYL COMPOSITION TILE [TYPE [A][____]]

Conform to JIS A 5705, asbestos-free, [300] [____] mm square and [2.4] [3.2] mm thick. Provide color and pattern uniformly distributed throughout the thickness of the tile.

[Provide Vinyl Composition Tile containing a minimum of 10 percent recycled content.]

2.2 SHEET VINYL FLOORING [TYPE [A] [____]]

Conform to JIS A 5705 and a minimum [1800 mm] [3660 mm] wide. Extend color and pattern through the total thickness of the material. As required, provide welding rods as recommended by the manufacturer for heat welding of joints.

2.3 LUXURY VINYL TILE [TYPE [A][____]]

Conform to JIS A 5705 printed film with a minimum wear layer thickness [0.50 mm (20 mil)][0.70 mm (30 mil)][____] and minimum overall thickness [[2.5 mm] [or] [3 mm]] [5 mm[with non slip/skid backing]]. Provide[[300 by 600] [____] mm][[300] [400] [450] [600] [900] [____] mm square][____] tile.[Provide tile with a factory protective finish that enhances cleanability and durability.]

2.4 SOLID VINYL TILE [TYPE [A][____]]

Conform to JIS A 5705 Class I monolithic (minimum wear layer thickness 3 mm and minimum overall thickness 3 mm, Type [A (smooth)] [B (embossed)]). Provide [300] [400] [450] [600] [900] [____] mm square tile.

2.5 WALL BASE

Provide [100] [150] mm high and a minimum 3.175 mm thick wall base. Provide [preformed] [job formed] corners in matching height, shape, and color.

2.6 INTEGRAL COVE BASE

Extend integral coved base for [[sheet vinyl] [and] [sheet linoleum] flooring up the wall [100] [150] mm]. Provide a [vinyl] [or] [rubber] [clear anodized aluminum], [square] [round] cap strip and vinyl, rubber, or wood fillet strip with a minimum radius of 19 mm for integral coved bases [at perimeter and fixed vertical interruptions to flooring] [as shown]. Provide integral cove of the same material as flooring. [Provide inside and outside corner protectors of [[____]-colored anodized aluminum] [clear anodized aluminum] [or] [plastic] approved by flooring manufacturer.]

2.7 STAIR TREADS, RISERS AND STRINGERS

Provide either a one piece nosing/tread/riser or a two piece nosing/tread

design with a matching coved riser.

2.8 MOULDING

Provide tapered mouldings of [[vinyl] [or] [rubber]] [[____]-colored anodized aluminum] [clear anodized aluminum] and types as recommended by flooring manufacturer for both edges and transitions of flooring materials specified. Provide vertical lip on moulding of maximum 6 mm. Provide bevel change in level between 6 and 13 mm with a slope no greater than 1:2.

2.9 ADHESIVES

Provide adhesives for flooring, base and accessories as recommended by the manufacturer or per JIS A 5536 and comply with local indoor air quality standards. Submit manufacturer's descriptive data, documentation stating physical characteristics, and mildew and germicidal characteristics.

2.10 SURFACE PREPARATION MATERIALS

Provide surface preparation materials, such as panel type underlayment, lining felt, and floor crack fillers as recommended by the flooring manufacturer for the subfloor conditions. Use one of the following substrates:

- [a. Particleboard: As specified in Section 06 10 00 ROUGH CARPENTRY.]
- [b. Fiberboard: As specified in Section 06 10 00 ROUGH CARPENTRY.]
- [c. Cork: As specified in Section 06 10 00 ROUGH CARPENTRY.]
- [d. Cement-fiber board: As specified in Section 09 29 00 GYPSUM BOARD.]
- [e. Plywood: As specified in Section 06 10 00 ROUGH CARPENTRY.]
- [f. Concrete.]

2.11 POLISH/FINISH

Provide polish finish as recommended by the manufacturer.

2.12 CAULKING AND SEALANTS

Provide caulking and sealants in accordance with Section 07 92 00 JOINT SEALANTS.

2.13 MANUFACTURER'S COLOR, PATTERN AND TEXTURE

Provide color, pattern and texture for resilient flooring and accessories [selected from manufacturer's standard colors] [[____]. Color listed is not intended to limit the selection of equal colors from other manufacturers]. [Provide floor patterns as specified on the [drawings Sheet No. [____]] [____].] Provide flooring in any one continuous area or replacement of damaged flooring in continuous area from same production run with same shade and pattern. Submit scaled drawings indicating patterns (including location of patterns and colors) and dimensions. Submit manufacturer's descriptive data and [three] [____] samples of each indicated color and type of flooring, base, mouldings, and accessories sized a minimum 60 by 100 mm. Submit Data Package 1 in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

2.14 FIRE RESISTANCE TESTING REQUIREMENTS

Provide a minimum average critical radiant flux of [0.22][0.45] watts per square centimeter for flooring in corridors and exits when tested in accordance with ASTM E648.

PART 3 EXECUTION

3.1 EXAMINATION

Examine and verify that site conditions are in agreement with the design package. Report all conditions that will prevent a proper installation. Do not take any corrective action without written permission from the Government. Work will proceed only when conditions have been corrected and accepted by the installer. Submit manufacturer's printed installation instructions for all flooring materials and accessories, including preparation of substrate, seaming techniques, and recommended adhesives.

3.2 SURFACE PREPARATION

Provide a smooth, true, level plane for surface preparation of the flooring, except where indicated as sloped. Floor to be flat to within 4.75 in 3048 mm. Prepare subfloor in accordance with flooring manufacturer's recommended instructions. Prepare the surfaces of lightweight concrete slabs (as defined by the flooring manufacturer) as recommended by the flooring manufacturer. Floor fills or toppings may be required as recommended by the flooring manufacturer. Install underlayments, when required by the flooring manufacturer, in accordance with manufacturer's recommended printed installation instructions. Before any work under this section is begun, correct all defects such as rough or scaling concrete, chalk and dust, cracks, low spots, high spots, and uneven surfaces. Repair all damaged portions of concrete slabs as recommended by the flooring manufacturer. Remove concrete curing and sealer compounds from the slabs, other than the type that does not adversely affect adhesion. Remove paint, varnish, oils, release agents, sealers, waxes, and adhesives, as required by the flooring product in accordance with manufacturer's printed installation instructions.

3.3 MOISTURE, ALKALINITY AND BOND TESTS

Determine the suitability of the concrete subfloor for receiving the resilient flooring with regard to moisture content and pH level by moisture and alkalinity tests. Conduct moisture testing recommended by the flooring manufacturer. Conduct alkalinity testing as recommended by the flooring manufacturer. Determine the compatibility of the resilient flooring adhesives to the concrete floors by a bond test in accordance with the flooring manufacturer's recommendations. Submit copy of test reports for moisture and alkalinity content of concrete slab, and bond test stating date of test, person conducting the test, and the area tested.

3.4 GENERAL INSTALLATION

Do not install building construction materials that show visual evidence of biological growth. Installation shall comply with MLIT SS Chapter 19.

3.5 PLACING VINYL COMPOSITION, LINOLEUM AND SOLID VINYL TILES

Install tile flooring and accessories in accordance with manufacturer's

printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's directions. Keep tile lines and joints square, symmetrical, tight, and even. Keep each floor in true, level plane, except where slope is indicated. Vary edge width as necessary to maintain full-size tiles in the field, no edge tile to be less than one-half the field tile size, except where irregular shaped rooms make it impossible. Cut flooring to fit around all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Cut, fit, and scribe edge tile to walls and partitions after field flooring has been applied.

3.6 PLACING LUXURY VINYL TILES

[Install luxury vinyl tile flooring using [glue down] [loose lay (room perimeter adhesive only)] installation.]Install flooring and accessories in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's directions for installation method specified. Keep tile lines and joints square, symmetrical, tight, and even. Keep each floor in true, level plane, except where slope is indicated. Vary edge width as necessary to maintain full-size tiles in the field, no edge tile to be less than one-half the field tile size, except where irregular shaped rooms make it impossible. Cut flooring to fit around all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Cut, fit, and scribe edge tile to walls and partitions after field flooring has been applied.

3.7 PLACING SHEET VINYL FLOORING

Install sheet vinyl flooring and accessories in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions. Provide square, symmetrical, tight, and even flooring lines and joints. Keep each floor in true, level plane, except where slope is indicated. Cut flooring to fit around all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Lay out sheets to minimize waste. Cut, fit, and scribe flooring to walls and partitions after field flooring has been applied.[Provide [chemically bonded] [or] [heat welded] seams and edges [in rooms [____]] [shown on the drawings] in accordance with the manufacturer's written installation instructions. Finish joints flush, free from voids, recesses, and raised areas.] [Install flooring with an integral coved base.]

3.8 PLACING SHEET LINOLEUM FLOORING

Install sheet linoleum flooring and accessories in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions. Provide square, symmetrical, tight, and even flooring lines and joints. Keep each floor in true, level plane, except where slope is indicated. Cut flooring to fit around all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Lay out sheets to minimize waste. Cut, fit, and scribe flooring to walls and partitions after field flooring has been applied. Cut seams by overlapping or underscribing as recommended by the manufacturer. [Provide heat welded seams [in rooms [____]] [as shown on the drawings] in accordance with there manufacturer's written installation instructions.] Finish joints flush, free from voids, recesses, and raised areas. [Install flooring with an integral coved base.]

3.9 PLACING CORK FLOORING

Install cork [tile] [plank flooring] and accessories in accordance with manufacturer's installation instructions. Prepare and apply adhesives in accordance with manufacturer's directions. Provide square, symmetrical, tight, and even flooring lines and joints except where slope is indicated. Keep each floor in true, level plane, except where slope is indicated. [Vary width of edge tiles as necessary to maintain full-size tiles in field, while keeping edge tiles larger than one-half full size, except where irregular-shaped rooms make it impossible.] Cut and fit flooring around all permanent fixtures, built-in furniture and cabinets, pipes, and outlets. Cut, fit and scribe flooring to walls and partitions after field flooring has been applied.

3.10 PLACING FEATURE STRIPS

Install feature strips in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions.

3.11 PLACING MOULDING

Provide moulding where flooring termination is higher than the adjacent finished flooring and at transitions between different flooring materials. When required, locate moulding under door centerline. Moulding is not required at doorways where thresholds are provided. [Secure moulding with adhesive as recommended by the manufacturer. Prepare and apply adhesives in accordance with manufacturer's printed directions.] [Anchor aluminum moulding to floor surfaces as recommended by the manufacturer.]

3.12 PLACING WALL BASE

Install wall base in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions. Tighten base joints and make even with adjacent resilient flooring. Fill voids along the top edge of base at masonry walls with caulk. Roll entire vertical surface of base with hand roller, and press toe of base with a straight piece of wood to ensure proper alignment. Avoid excess adhesive in corners.

3.13 PLACING STAIR TREADS, RISERS, AND STRINGERS

Secure and install stair treads, risers, and stringers in accordance with manufacturer's printed installation instructions. Cover the surface of treads and risers[the full width of the stairs][within 150 mm to the stair edges]. Provide equal length pieces butted together to cover the treads and risers for stairs wider than manufacturer's standard lengths. [Provide stringer angles on both the wall and banister sides of the stairs, and landing trim.]

3.14 PLACING INTEGRAL COVED BASE

Install integral cove base in accordance with manufacturer's printed installation instructions. Prepare and apply adhesives in accordance with manufacturer's printed directions. Shape integral coved base by extending the flooring material [100] [150] [_____] mm onto the wall surface. Support cove by a filler. Provide a cap strip at the top of the base. Fill voids along the top edge of base at masonry walls with caulk.

3.15 CLEANING

Immediately upon completion of installation of flooring in a room or an area, dry and clean the flooring and adjacent surfaces to remove all surplus adhesive. Clean flooring as recommended in accordance with manufacturer's printed maintenance instructions and within the recommended time frame. As required by the manufacturer, apply the recommended number of coats and type of polish and finish in accordance with manufacturer's written instructions.

3.16 PROTECTION

From the time of installation until acceptance, protect flooring from damage as recommended by the flooring manufacturer. Remove and replace flooring which becomes damaged, loose, broken, or curled and wall base which is not tight to wall or securely adhered.

-- End of Section --