

# Chapter 4

## Subfloors, radiant heat and existing flooring

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## 4.1 Substrates

Suitable substrates may include:

- APA certified plywood
- Poplar
- Birch plywood
- Concrete
- Metal
- Existing flooring
- Epoxy

Unsuitable substrates may include:

- Particleboard
- Chipboard
- Construction grade plywood
- Flakeboard
- OSB
- Treated plywood (pressure, fire, etc.)
- Stripwood

## 4.2 Wood subfloors

Wood underlayments for Altro flooring must:

- be structurally sound.
- be prepared in accordance with ASTM F1482
- be designed for resilient flooring underlayment purposes.
- have panels smooth enough so that texture or graining will not telegraph through.
- resist dents and punctures from concentrated loads.
- be free of any substance that may stain vinyl such as marking inks, paints, solvents, adhesives, asphalt, dye, etc.
- be of uniform density, porosity and thickness.
- be installed in strict accordance with the board manufacturers recommendations.
- Wood floors should be double layer construction with a minimum total thickness of 1". The subfloor must be rigid, free from movement, and have at least 18" of well-ventilated air space below.
- Wood subfloors must not exceed 8% moisture content when measured with a Delmhorst Wood Moisture Tester.
- Crawl spaces shall be insulated and protected by a vapor barrier.
- Do not install Altro floor covering over wood floors

built on wooden sleepers directly in contact with any concrete or earth.

- Wood underlayments must meet local and national building codes. Trade associations, such as the APA - The Engineered Wood Association offer structural guidelines for meeting various code requirements.
- Certain underlayment panels may cause staining. Consult the underlayment panel manufacturer for specific panel recommendations, panel warranties, and application instructions.
- Do not install over particle board, chip board, OSB, Masonite™ or Luan type panels unless specifically warranted by the manufacturer for use as an underlayment.
- Regardless of the type and manufacturer of the underlayment panel used, any failures in the performance of the underlayment or floor covering due to the underlayment is the responsibility of the underlayment manufacturer, and/or the underlayment installer.

## 4.3 Concrete subfloors

- All new and existing concrete subfloors must meet the requirements outlined in the current edition of ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring, and ACI 302.2R-06, Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials. The concrete subfloor must be flat within 3/16" over 10 feet per ASTM F710.
- For adhesives that require a vapor barrier, all on-grade and below-grade concrete subfloors must have a verified, permanently effective vapor retarder that meets the current ASTM E1745 standard, "The Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs."
- For Altro adhesives and flooring that require testing, moisture tests must be conducted on all concrete slabs, regardless of age or grade level, in compliance with appropriate ASTM's. Results are not to exceed moisture and pH limitations of the particular adhesive and flooring.
- Concrete floors must be smooth, rigid, permanently dry, and clean. Floors must be free of all foreign materials, including dust, sealers, paint, grease, oils, solvents, curing and hardening compounds, asphalt, old adhesive residue, and any other contaminants.
- Spray paints, permanent markers and other indelible ink markers must not be used on the concrete



Notes

- Before any floor covering is installed, the heating system should be commissioned to ensure it is functioning correctly, and to ensure the substrate and screed is dry and in a stable state to receive the flooring. When the subfloor/scree containing the heating system has been laid, cured and dried, prior to installing the flooring, it should be heated very slowly to its operating temperature and maintained for several days before cooling down to room temperature, but not below 60°F (15°C).
- Ensure that the underfloor heating is switched off 48 hours prior to the floor covering installation commencing and remains off for at least 48 hours after the installation is complete.
- The temperature of the heating system should be increased gradually over a number of days, by only a few degrees per day, until the desired room temperature is reached. The temperature at the underside of the floor covering, i.e. the adhesive line, should never exceed the maximum of 80°F (27°C).
- During the period of decommissioning and shutting down of the underfloor heating system, an alternative heating source should be provided, if required, to ensure that the area of installation is kept at a constant temperature between 65°F (18°C) - 80°F (27°C).

## 4.6 Existing flooring and adhesive residue

- Altro recommends removal of all existing flooring whenever possible; however in certain circumstances it may be possible to install over an existing floor. Please consult the following information as well as with your local Altro distributor.
- Altro floor covering may be installed over existing flooring surfaces such as terrazzo, epoxy, ceramic tile, quarry tile, metal floors, and in certain cases resilient floors and VCT, provided they are dry, well bonded, sound, smooth, and free of waxes, polishes and/or any other foreign materials.
- When going over existing flooring, moisture testing must be performed per applicable ASTM standards. Partial removal of the existing flooring may be required to facilitate moisture testing.
- Do not install over cushion-backed, heavily embossed, or multiple layers of flooring. Installations over existing resilient flooring will be more susceptible to indentation, and there is the possibility that the existing flooring will telegraph through.
- The responsibility of determining if the existing floor is a suitable subfloor rests solely with the installer and flooring contractor. If there is any doubt, the existing floor should be removed.
- Caution must always be exercised when removing old flooring or adhesive residues as they may contain asbestos or harbor mold and mildew. Consult with your local authorities regarding to laws pertaining to removal. Also consult RFCI's Recommended Work Practices for the Removal of Resilient Floor Coverings at the Resilient Floor Covering Institute website at: [www.rfci.com](http://www.rfci.com).
- Do not install resilient flooring directly over residual adhesive or paint. All adhesive and paint must be mechanically removed to a thin well-bonded residue.
- In situations where existing flooring adhesive was removed chemically, one of the following conditions now exists. Since there are known concerns with the chemical abatement process, including the following; (1) once the chemical is present in the substrate it cannot recognize the difference between the old adhesive and the new adhesive, (2) it is considered a penetrant and there is no way to know how deep into the substrate it could have penetrated due to porosity, (3) there is no way to tell (in a short term test) if the substrate has been neutralized or rinsed (abatement chemical removed) well enough to accept new adhesive.
- Only use mechanical means to remove old residual adhesive, i.e. bead blasting or scarifying. Solvent/citrus based adhesive removers are unsuitable. Follow The Resilient Floor Covering Institute's (RFCI) "Recommended Work Practice for Removal of Existing Floor Covering and Adhesive", and all applicable local, state, federal and industry regulations and guidelines. When removing asbestos and asbestos containing materials, follow all applicable OSHA standards.