
Article 1 - Preparing Concrete for Bonded ARDEX Applications

Minimum Requirements for Concrete Substrates

Unless otherwise advised by the ARDEX Technical Service Department, concrete to receive ARDEX materials must be at least 28 days old, and moisture vapor emissions must be addressed as needed.

Concrete substrates must be **solid and structurally sound**. If necessary, contact a structural engineer for further advisement.

Minimum Values

Compressive strength (ASTM C39): 3,000 psi

Tensile strength (ASTM C1583): 200 psi

Density (ASTM C803): 100 pcf

In all cases, **the substrate surface must be dry** (free of standing water) during installation and cure of the product. Verify concrete surface dryness by mat testing in conformance with ASTM D4263.

Unless otherwise noted in the technical data sheet, the minimum recommended substrate surface and ambient temperature during installation is **50°F (10°C)**. Where a temporary heat source will be used, please note that the heat source must not use fossil fuels. Use propane or natural gas type heaters that are properly vented to prevent an oily residue from developing on the surface of the substrate.

Furthermore, the surface temperature of the concrete must be at least 5°F (3°C) higher than the dew point for the given temperature and relative humidity in the space and rising. For example, if the dew point temperature in the space is 60°F (16°C), the slab temperature must be 65°F (19°C) or higher and rising.

Substrate Preparation (Proper Prep™)

Mechanically remove overwatered, frozen, or otherwise loose or weak concrete surfaces.

Mechanically remove all unsuitable materials and bond-breaking contaminants, including, but not necessarily limited to, the following: laitance, oil, wax, grease, asphalt, paint, salts and sealers.

Contaminants must be removed down to their penetrated depths. For penetrating contaminants, such as oil, grease and chemicals, it may be necessary to determine the depth of penetration via core testing. Your local ARDEX Sales Professional can recommend an independent testing facility in your area.

Ensure the patching / leveling compounds are sound and solid. Compounds to receive ARDEX underlayments must exhibit a minimum compressive strength of 3,000 psi, a minimum density of 100 pcf and minimum tensile and bond strengths of 200 psi.

Use mechanical preparation methods to completely remove overwatered, frozen or otherwise weak patching and leveling compounds.

Recommended Mechanical Preparation Methods

Note that the preparation method selected **must be sufficiently aggressive to remove all bond-inhibiting contaminants from the substrate and to obtain the minimum profile specified.**

Also note that the resulting porosity of the substrate may dictate the required priming method. Please see the technical data sheet for the ARDEX underlayment being installed to verify priming recommendations.

Prohibited Methods

Acid etching, adhesive removers^A, solvents and sweeping compounds are bond breakers and must not be used.

Sanding equipment will not remove contaminants from the pores of the concrete.

Asbestos Warning

If any asbestos-containing materials are being removed, consult prevailing federal, state and local regulations to determine the required substrate preparation method. Asbestos-containing floor coverings and adhesives must be handled and disposed of in accordance with applicable federal, state and local regulations.

^A Please be advised that ARDEX, along with flooring manufacturers in general and in accordance with the requirements of ASTM F710, does not recommend the installation of any product over a concrete substrate that has been treated with chemicals to remove an existing adhesive. This will confirm that all concrete contaminated with chemicals must be completely, mechanically removed down to sound, solid and completely uncontaminated concrete before any ARDEX products can be installed. We recommend contacting the abatement chemical manufacturer to determine the means by which the concrete can be deemed contaminant free.

Methods Based on Minimum Preparation

When substrates must be clean and profiled to a CSP 3

For these applications, remove bond-inhibiting contaminants and achieve a minimum concrete surface profile of 3 (CSP 3) by **shot blasting** or similar. Concrete surface profiles are defined by the International Concrete Repair Institute (ICRI). More information can be found at www.icri.org.

When substrate must be clean and absorbent

For these applications, remove bond-inhibiting contaminants and render the concrete absorbent (ASTM F3191) by **shot blasting** or similar.

When no absorbency or profile is required

For these applications, surfaces that are sound, solid and uncontaminated may be bonded to without mechanical profiling. Where necessary, however, **substrate preparation must be by mechanical means, such as shot blasting** or similar.

When preparing suitable adhesive residue

For adhesive residue on concrete, use the tools specified by the Resilient Floor Covering Institute for the **wet-scraping technique**.

Final Step: Vacuum

Once preparation is complete, thoroughly vacuum to remove all loose material. The resulting concrete surface must be deemed **clean, sound and solid** prior to the installation of the ARDEX underlayment.

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