



ARDEX GS-4TM

Self-Leveling Repair Underlayment for Distressed Gypsum and Wood Subfloors

A blend of high strength gypsum and Portland cements

Use above grade to repair existing gypsum and wood substrates prior to the installation of new floor covering

**Install up to 2" (5 cm) neat or 5" (13 cm) with aggregate.
Can be tapered to 1/16" (1.5 mm)**

Easy to mix and apply

Hardens and dries faster than other gypsum products - install floor covering in as little as 3 days

Needs no special curing

Suitable for use with in-floor hydronic and electric radiant heating systems

For interior floors only

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ARDEX GS-4™

Self-Leveling Repair Underlayment for Distressed Gypsum and Wood Subfloors

Description And Usage

ARDEX GS-4™ is a self-leveling underlayment used for repairing and finishing above grade gypsum and wood substrates prior to the installation of new floor covering. Pourable or pumpable when mixed with water, it seeks its own level and produces a smooth, flat, hard surface.

ARDEX GS-4 can be installed up to 2" (5 cm) neat, or 5" (13 cm) with aggregate, to achieve the desired flatness tolerance, and hardens and dries quickly without shrinking, cracking or spalling. It can be walked on after 3 hours, and floor covering can be installed as soon as the underlayment has dried sufficiently for the floor covering selected. The drying time is a function of temperature, humidity and the thickness at which the material is applied. ARDEX GS-4 can also be used over gypsum and wood floors that employ the use of hydronic or low-voltage electrical in-floor heating systems.

Substrate Preparation

All existing substrates must be solid, thoroughly clean and free of oil, wax, grease, asphalt, latex compounds, curing and sealing compounds, and any contaminant that might act as a bond breaker. Mechanically clean the floor down to a sound, solid surface by shot blasting, scarifying or similar. Acid etching, adhesive removers, solvents and sweeping compounds are not acceptable means of cleaning the substrate. The use of sanding equipment is only effective to remove sealers on wood substrates. For small areas of replacement down to cement with adhesive residue, prepare non-water-soluble adhesives down to a thin, well-bonded residue by wet scraping. Water-soluble adhesives must be mechanically removed. Gypsum and wood surfaces must be dry and properly primed for a successful installation. Substrate and air temperatures must be a minimum of 50°F (10°C) for the installation of ARDEX products. For further information, please refer to the ARDEX Substrate Preparation Brochure.

Wood subfloors must either be solid hardwood flooring, a minimum of ¾" (18 mm) tongue-and-groove, APA-rated Type 1, exterior exposure plywood, or an approved OSB equivalent. The wood subfloor must be constructed according to prevailing building codes, and must be solid and securely fixed to provide a rigid base free of undue flex. Any boards exhibiting movement must be re-nailed. The surface of the wood must be clean and free of oil, grease, wax, dirt, varnish, shellac and any contaminant that might act as a bond breaker. If necessary, sand down to bare wood. A commercial drum sander can be used to sand large areas. Do not use solvents, strippers or cleaners. Vacuum all dust and debris. Open joints should be filled with ARDEX FEATHER FINISH® SELF-DRYING, CEMENT-BASED FINISHING UNDERLAYMENT. It is the responsibility of the installation contractor to ensure that the wood subfloor is thoroughly clean and properly anchored prior to the installation of any ARDEX material.

There are also jobsite conditions that may require that only a section of the gypsum be removed, completely exposing the original substrate. In such cases, installation of ARDEX GS-4 should be performed in a manner consistent with the original installation, i.e. if the gypsum was originally installed over wood, concrete, ceramic tile or extruded polystyrene insulation, follow the installation instructions for ARDEX GS-4 under these conditions.

Recommended Tools

ARDEX T-1 Mixing Paddle, ARDEX T-10 Mixing Drum, ARDEX T-4 Spreader, ARDEX T-5 Smoother, ARDEX MB-4.0 Measuring Bucket (4 quarts [3.8 liters] for 50 lb. [22.7 kg] bag), and a ½" heavy-duty drill (12 mm - min. 650 rpm).

Priming

Existing gypsum substrates or small areas of replacement over standard absorbent concrete require two applications of ARDEX P 51™ PRIMER. Make an initial application of ARDEX P 51 mixed with 3 parts water by volume. Apply evenly with a soft push broom. Do not use paint rollers, mops or spray equipment. Do not leave any bare spots. Brush off puddles and excess primer. Let dry thoroughly (1 to 3 hours) and install a second application of ARDEX P 51 mixed 1:1 with water as stated above. Allow primer to dry to a clear, thin film (min. 3 hours, max. 24 hours).

Wood subfloors require priming with ARDEX P 51 at full strength (do not dilute). Apply directly to the prepared wood with a short-nap or sponge paint roller, leaving a thin coat of primer. Do not leave any bare spots. Brush off puddles and excess primer. Allow primer to dry to a clear, thin film (min. 3 hours, max. 24 hours).

Replacement of small areas down to an original non-porous substrate, including burnished concrete, terrazzo, quarry and ceramic tile, non-water-soluble adhesive residue on concrete and extruded polystyrene insulation, must be primed with ARDEX P 82™ ULTRA PRIME. Follow the mixing instructions on the container and apply with a short-nap or sponge paint roller, leaving a thin coat of primer. Do not leave any bare spots. Brush off puddles and excess primer. Allow primer to dry to a thin, slightly tacky film (min. 3 hours, max. 24 hours). In addition, the edges of the existing gypsum must be double-primed using ARDEX P 51 as outlined previously.

Mixing And Application – Manually

ARDEX GS-4 is mixed 2 bags at a time. Mix each 50 lb (22.7 kg) bag with 4 quarts (3.8 liters) of clean water. Pour the water in the mixing drum first, then add each bag of ARDEX GS-4 while mixing with an ARDEX T-1 Paddle and a ½" heavy-duty drill (12 mm, min. 650 rpm). Mix thoroughly for approximately 3 to 4 minutes to obtain a lump-free mix. **Do not overwater!** Settling of the sand aggregate while placing indicates overwatering.

ARDEX GS-4 has a flow time of 10 minutes at 70°F (21°C). Pour the liquid mix onto the floor and spread with the ARDEX T-4 Spreader. Immediately smooth the material with the ARDEX T-5 Smoother. Wear baseball or soccer shoes with non-metallic cleats to avoid leaving marks in the liquid ARDEX GS-4. Do not install below 50°F (10°C) surface and air temperatures.

Mixing And Application – Pumping

ARDEX GS-4 can be pumped using the ARDEX Levelcraft™ Automatic Mixing Pump. The Levelcraft Pump provides high productivity and a smooth, consistent installation. The pump may be rented from an authorized ARDEX Distributor and is supported by the ARDEX Technical Service Department.

Start the pump at a water setting of 130 gallons per hour, and then adjust to the minimum water reading that allows self-leveling properties. **Do not overwater!** Check the consistency of the product on the floor to ensure a uniform distribution of the sand aggregate at both the top surface and bottom of the pour. Conditions during the installation, such as variations in water, powder, substrate and ambient temperature, require that the water setting be adjusted during installation to avoid overwatering.

ARDEX GS-4 has a flow time of 10 minutes at 70°F (21°C). Pump the liquid mix onto the floor and spread with the ARDEX T-4 Spreader. Immediately smooth the material with the ARDEX T-5 Smoother. Wear baseball or soccer shoes with non-metallic cleats to avoid leaving marks in the liquid ARDEX GS-4. Do not install below 50°F (10°C) surface and air temperatures. Contact the ARDEX Technical Service Department for complete pump installation instructions.

Thickness Of Application

ARDEX GS-4 must be installed at a minimum thickness of ⅛" (3 mm) over the highest point in the floor, which typically results in an average thickness of ¼" (6 mm) over the entire floor. ARDEX GS-4 can be installed up to 2" (5 cm) over large areas in one pour, and up to 5" (13 cm) with the addition of proper aggregate. ARDEX GS-4 can also be tapered to meet existing elevations.

For areas with a thickness greater than 2" (5 cm), mix ARDEX GS-4 with washed and well-graded ⅛" to ¼" (3 to 6 mm) pea gravel. Mix the ARDEX GS-4 with water first, and then add 1 part aggregate by volume, mixing until the aggregate is completely coated. Do not use sand. If the aggregate is wet, reduce the amount of water to avoid overwatering.

The addition of aggregate will diminish the workability of the product and may make it necessary to install a neat coat to obtain a smooth surface. Allow the initial application to dry for 12 to 16 hours, and then prime this layer with ARDEX P 51 mixed 1:1 with water as stated above. Allow the primer to dry (min. 3 hours, max. 24 hours) before installing the neat coat of ARDEX GS-4.

Wear Surface

ARDEX GS-4 is not to be used as a permanent wear surface, even if coated or sealed. ARDEX GS-4 must be covered by a suitable floor covering material such as carpet, vinyl flooring, ceramic tile, etc.

Installation of Flooring

ARDEX GS-4 can be walked on approximately 3 hours after installation. Floor covering material can be installed after the underlayment has dried thoroughly. Drying time will be a function of jobsite temperature and humidity conditions, as well as the installation thickness. While a 1/4" (6 mm) thick installation may be dry enough for some types of floor covering after only a few days, additional drying time may be necessary for deeper installations, or for the installation of more moisture-sensitive flooring. Provide continuous ventilation and adequate electrical or natural gas heat to remove moisture from the ARDEX GS-4.

Allow a minimum of 48 hours drying time after placement, and then test the ARDEX GS-4 for dryness by placing a piece of heavy plastic or a smooth rubber mat down over a 2' x 2' (0.6 x 0.6 m) area. After 24 hours, lift the barrier material and inspect for surface darkening. A darkened area indicates excessive moisture is still present, and further drying time is required. Repeat the above test at regular time intervals until no darkening is observed. Once the installation is deemed dry, prime the entire area with ARDEX P 51 mixed with 3 parts water by volume as stated previously. Allow drying to a clear, thin film (min. 3 hours, max. 24 hours) before applying the adhesive and floor covering. The use of ARDEX P 51 will help ensure that the adhesive has sufficient open time prior to placing the floor covering.

Notes

This product is intended for interior use over dry substrates only. Do not use in areas of constant water exposure or in areas exposed to permanent or intermittent substrate moisture, as this may jeopardize the performance of the underlayment and floor covering.

Always install an adequate number of properly located test areas, including the finish flooring, to determine the suitability of the products for the intended use. As floor coverings vary, always contact and rely upon the floor covering manufacturer for specific directives such as adhesive selection and intended end use of the product.

ARDEX primers may require longer drying time with low surface temperatures and/or high ambient humidity. Do not install ARDEX GS-4 before the primer has dried thoroughly.

Never mix with cement or additives other than ARDEX approved products. Observe the basic rules of concrete work. Do not install below 50°F (10°C) surface and air temperatures. Install quickly if substrate is warm, and follow warm weather instructions available from the ARDEX Technical Service Department.

Precautions

ARDEX GS-4 contains Portland cement, gypsum and sand aggregate. Avoid eye and skin contact. Mix in a well-ventilated area and avoid breathing powder or dust. KEEP OUT OF REACH OF CHILDREN. Carefully read and follow all cautions and warnings on product label. For complete safety information, please refer to the Material Safety Data Sheet or visit our website at www.ardex.com.

Technical Data According To ARDEX Quality Standards

All data based on a mixing ratio of 4 parts powder to 1 part water by volume at 70°F (21°C)

Mixing Ratio:	4 quarts (3.8 L) of water per one 50 lb (22.7 kg) bag
Coverage:	22 sq. ft. per bag at 1/4" (2 m ² at 6 mm) 11 sq. ft. per bag at 1/2" (1 m ² at 12 mm)
Flow Time:	10 minutes
Initial Set (ASTM C191):	Approx. 30 minutes
Final Set (ASTM C191):	Approx. 60 minutes
Compressive Strength (ASTM C109/mod – Air cure only):	4000 psi (281 kg/cm ²) at 28 days
Flexural Strength (ASTM C348):	1500 psi (105 kg/cm ²) at 28 days
Walkable:	3 hours
Install Floor Covering:	Minimum 3 days at 70°F (21°C)/50% RH
VOC:	0 g/L, calculated, SCAQMD 1168
Packaging:	50 lb/22.7 kg net weight bags
Storage:	Store in a cool dry area. Do not leave bags exposed to sun.
Shelf Life:	One year if unopened
Warranty:	ARDEX Engineered Cements Standard Limited Warranty applies.

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