



ARDEX GS-4TM

Self-Leveling Repair Underlayment for Distressed Gypsum and Wood Subfloors

A blend of high strength gypsum and Portland cements

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

Hardens and dries faster than other gypsum products

Needs no special curing

Easy to mix and apply

Install up to 2" neat or 5" with aggregate. Can be tapered to meet existing elevations

Recommended for use over structurally sound plywood, OSB and strip wood flooring

Install floor covering in 2-3 days

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

Use 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 repair 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" neat, or 5" 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 has been formulated as a repair material for distressed gypsum floors under specific conditions where the decision not to remove and completely replace the gypsum with a Portland cement-based underlayment has been made. ARDEX GS-4 can also be used to smooth building-code approved, structurally sound plywood, OSB and strip wood flooring. Finally, ARDEX GS-4 can be used over gypsum and wood floors that employ the use of hydronic or low-voltage electrical in-floor heating systems. For further information and installation instructions, please contact the ARDEX Technical Service Department.

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.

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. Where applicable, 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 3/4" 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.

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 (4.0 qts. for 50 lb. bag), and a 1/2" heavy-duty drill (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 by volume of water. 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 the original substrate, including non-porous substrates, 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. The edges of the existing gypsum must also be primed. Follow mixing instructions on 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).

Mixing And Application – Manually

ARDEX GS-4 is mixed in 2-bag batches at one time. Mix each 50 lb bag with 4.0 quarts (3.8 liters) of water. Put 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 (min. 650 rpm). Mix thoroughly for approximately 3 to 4 minutes to obtain a lump-free mix. Do not overwater! Yellowish foam while mixing, or 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 temperature.

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 temperature. 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" over the highest point in the floor, which typically results in an average thickness of ¼" over the entire floor. ARDEX GS-4 can be installed up to 2" over large areas in one pour, and up to 5" 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", mix ARDEX GS-4 with washed and well-graded ⅛"-¼" pea gravel. Mix ARDEX GS-4 with water first, and then add 1 part by volume of aggregate, mixing until the aggregate is completely coated. Do not use sand. If aggregate is wet, reduce the amount of water to avoid overwatering.

The addition of aggregate will diminish the workability of the product and make it necessary to install a finish coat to obtain a smooth surface. Allow the initial application to dry for 12-16 hours. 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 finish coat.

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

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" 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.

After allowing a minimum of 48 hours drying time after placement, 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' 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 intervals until no darkening is observed. Once the installation is deemed dry, prime the entire area with ARDEX P 51 mixed with 3 parts by volume of water as stated above. Allow drying to a clear, thin film (min. 3 hours, max. 24 hours) before applying the adhesive and the 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 the floor covering.

Always install an adequate number of properly located test areas, including the finish flooring, to determine the suitability of the product 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.

Low substrate temperatures and/or high ambient humidity require longer drying times for ARDEX primers. Do not install ARDEX GS-4 before primer has dried thoroughly. Do not install ARDEX GS-4 below 50°F (10°C) surface and air temperature.

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.

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 temperature. Install quickly if substrate is warm, and follow hot weather instructions available from the ARDEX Technical Service Department.

Technical Data According To Ardex Quality Standards

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

Mixing Ratio:	4 quarts of water per one 50 lb bag
Coverage:	22 sq. ft. per bag at ¼" 11 sq. ft. per bag at ½"
Flow Time:	10 minutes at 70°F (21°C)
Initial Set (ASTM C191):	Approx. 30 minutes at 70°F (21°C)
Final Set (ASTM C191):	Approx. 60 minutes at 70°F (21°C)
Compressive Strength (ASTM C109/mod – Air cure only):	4000 psi at 28 days
Flexural Strength (ASTM C348):	1500 psi at 28 days
Flammability (ASTM E84):	Flame Spread -0- Fuel Contribution -0- Smoke Development -0-
Walkable:	3 hours at 70°F (21°C)
Install Floor Covering:	Minimum 2-3 days at 70°F (21°C)/50% RH
Packaging:	50 lb/22.7 kg net weight in paper bags
Storage:	Store in a cool dry area. Do not expose bags to sun.
Shelf Life:	One year
Warranty:	Ardex Engineered Cements Standard Limited Warranty applies.

Limited Warranty

Ardex, L.P. warrants that if this product proves to have manufacturing defects and ARDEX is notified of such within six months from the date ARDEX shipped the product, ARDEX will replace the defective product f.o.b. factory. Such product replacement shall constitute the sole and exclusive remedy for any claim under this warranty. ARDEX does not authorize anyone, including ARDEX Representatives, to make any statements that supersede, modify or supplement the information provided on its printed literature or package labels without written confirmation from the ARDEX Technical Service Department. Any installations proceeding without this confirmation, or misinstallations of the product, will void this warranty. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED, IMPLIED OR STATUTORY, AND IS STRICTLY LIMITED TO ITS TERMS. ARDEX MAKES NO WARRANTY OF MERCHANTABILITY OR SUITABILITY OF ITS PRODUCTS FOR ANY PARTICULAR PURPOSE. All product demonstrations are placed for illustrative purposes only and do not constitute a warranty of any kind. ARDEX SELLS ITS PRODUCTS UPON THE CONDITION THAT CUSTOMERS SHALL CONDUCT THEIR OWN TESTS TO DETERMINE THE SUITABILITY OF THE PRODUCTS FOR THE CUSTOMERS' INTENDED PURPOSES. UNDER NO CIRCUMSTANCES WILL ARDEX BE LIABLE FOR ECONOMIC, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES OF ANY KIND WHATSOEVER ARISING OUT OF OR OCCASIONED BY THE SELECTION, USE, INSTALLATION OR REPLACEMENT OF THESE PRODUCTS.

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