

Ultra4100®

SELF-LEVELING UNDERLAYMENTS

Division 3

03 54 00 Cast Underlayment

03 54 16 Hydraulic Cement Underlayment

Suitable Substrates

(well bonded, clean, dry, sound & stable)

- Concrete, Concrete Plank
- Existing Patching & Leveling Materials
- Sound Gypsum
- Steel Pan
- Cement or Epoxy Terrazzo
- Well Bonded Existing Flooring such as: VCT, Ceramic Tile
- Qualified Adhesive Residue (Non Soluble, Non PSA)

LEED®

Ultra4100 May Contribute To Leed® Certification Of Projects As Follows:

Indoor Environmental Quality EQ 4.2

Low Emitting Materials
VOC Content 0g/l (Calculated)

Compliance Tested To California Department Of Public Health (CDPH/EHLB/ Standard Method) v1.2 - 2017

Building Reuse - Maintain

MR 1.1 , MR 1.2
Provides New, Pristine Sub-floor

Materials And Resources

MR 4.1 - 4.2, 5.1, 5.2
Regional Manufactured
Cleveland, OH
Regional Materials >50%



Ultra4100® is an innovative self-leveling underlayment that is engineered and powered by Synthecem™ Technology utilizing proprietary blends of hydraulic cements and chemical admixtures that are designed to produce very flat floors and hold slopes. Utilizing these state-of-the-art technologies will help optimize successful installations for today's most demanding substrates resulting in finished floors with exceptional surface durability and high-strength.

Ultra4100® typically requires no mechanical preparation of concrete substrates for pedestrian and light commercial traffic applications. Dependant on interior environment variables, finished floors can typically be exposed to foot traffic in 3-4 hours and commercial-trade traffic in 16 hours after placement.

Ultra4100® is compatible with a wide variety of well-bonded adhesives, and suitable for all kinds of finished flooring goods such as vinyl, LVT, carpet, engineered wood, ceramic, gypsum, and, corrugated steel deck. Optimized for installation from 1/4" to 2+" NEAT in a single lift and offers compressive strengths exceeding 4100 psi.



FEATURES

- Hydraulic Cement Underlayment Powered by Portland Cement based Synthecem™ Technology
 - Typically Requires No Mechanical Preparation of Concrete Substrates for Pedestrian Traffic & Light Commercial Applications*
 - Optimized for Installation from 1/4" to 2+" NEAT in a Single Lift
 - May Typically be Exposed to Foot Traffic in 3 - 4 Hours after Placement & Trade Traffic 16 Hours after Placement. Cool Temperatures will Slow Strength Development
 - Suitable for Installation Prior to Interior Build-Outs
 - Smooth, Hard Surface is Compatible with a Wide Variety Of Flooring Adhesives & Suitable for All Kinds of Finished Flooring such as Vinyl, LVT, Carpet, Engineered Wood, Ceramic & More
 - Will Not Support Mold Growth
 - Suitable for Under Floor Heating Systems, Electrical & Hydronic
 - Suitable for Installation Over a Wide Variety Of Substrates
- *Contact Technical services to verify requirements for your commercial application*

TECHNICAL PROPERTIES (tested @ 73°F)

Compressive (ASTM C109)	24 Hours	>1200 psi
	7 Days	>2500 psi
	28 Days	>4100 psi
Placement Time	15 Minutes	
Time to Foot Traffic	3 - 4 Hours	
Time to Flooring	Breathable Flooring	<1" Depth wait 16 Hours*
	Non-Breathable Flooring	<1/2" Depth wait 24 Hours*
		<i>*For Greater Depths-See Tables in Section: "Drying Time" 50°F - 90°F</i>
Temperature for Application (material & ambient)	Adjust Temperature of Material by Using Warm or Cold Water	
Density	120 - 130 lbs. /cu.ft.	
Flammability	Flame Spread: 0 - Fuel Contribution: 0 - Smoke Development: 0	
Yield	50 lbs.	0.44 ft ³ (low water) - 0.46 ft ³ (high water)
Coverage	50 lbs.	Approx. 19 - 22 ft² @ 1/4"
Water / 50 lb. Unit	4 - 4.75 US qts. / 50 lbs.	3.75 - 4.5 L / 22.7 kg.
Package	50 lbs. (22.7 kg.)	
Shelf Life	12 Months Unopened in Original Container. Consult SDS.	
Color	Light Grey	

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General Guidelines

- For interior use only
- Install between 50° F – 90° F
- For installation in enclosed, climate controlled buildings
- Keep dry and above 50° F for 72 hours after installation
- Avoid exposure to regular trade traffic for 24 hours after application
- Not for use as a permanent wear surface.
- Installation must conform to applicable local, state and federal building codes.

Storage

Store in cool and dry conditions, out of direct sunlight with pallets wrapped in original shrink wrap.

Clean-Up & Disposal

Wash hands and tools with water before the material hardens, or within 10 minutes of material contact to ensure easiest removal. Cured material must be removed mechanically. Dispose waste or excess material in accordance with all local, state and federal regulations. Hardened material is generally considered construction waste.

References

ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Sub-floor Using Anhydrous Calcium Chloride

ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

ASTM F-710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

ASTM C1708 Standard Test Methods for Self-leveling Mortars Containing Hydraulic Cements

APPLICATION PROCEDURES

Reference the floor covering and adhesive manufacturers documentation to verify suitability of Ultra4100[®] as a sub-floor for the flooring system (any adhesive used for concrete is generally suitable for Ultra4100[®]). Follow the directions of the flooring and adhesive manufacturer to determine the maximum allowable moisture content (RH) or transmission of the substrate. If the moisture content (ASTM F-2170) or moisture vapor transmission rate (ASTM F-1869) of the substrate exceeds the requirements of the flooring system, utilize UltraRH 100 Epoxy Moisture Mitigation System prior to installation of the Ultra4100[®].

Honor all moving joints. Complete crack and substrate repairs prior to installation. Consult an engineer for required joints and crack repairs prior to installation. Contact Technical Services for required surface preparation on installations that will be exposed to high rolling loads or high point loads.

Maintain a minimum of 50° F during the pour and for 72 hours after the pour. Acclimate the material to a minimum of 55° F prior to mixing. To maximize flowability and working time, utilize cool water when temperatures exceed 85° F.

For installation over hydronic heating systems utilize a minimum of 1.5" of material, with ¾" of material above the hydronic system. Ultra4100[®] is compatible with and accepts the direct application of urethane, moisture cure, and other typical floor covering adhesives.

Ultra4100[®] can be applied in two lifts to a maximum depth of 2" NEAT monolithically and up to 3" NEAT in isolated areas. It is recommended to use clean, washed, and dried 1/4 - 3/8" pea gravel if utilized in areas deeper than 2". Applications deeper than 3" must be extended with aggregate. Extend Ultra4100[®] up 50% (by weight - 25 lbs pea gravel per 50 lbs Ultra4100[®]). Ensure pea gravel is thoroughly mixed in (encapsulated) by the Ultra4100[®].

SURFACE PREPARATION

All substrates must be sound, clean, dry and free of contaminants (oil, dirt, laitance, etc.) that may interfere with adhesion. Areas of the floor that do not exhibit a tensile pull strength greater than 100 psi are not suitable and must be mechanically removed to a sound, stable base and subsequently repaired prior to application of Ultra4100[®]. Do not use solvents, acids, chemical adhesive removers to prepare the substrate. All bond breaking substances (cure residues, excess salts from silicates etc.) must be removed prior to priming. Completely vacuum all dust and debris from the substrate prior to priming with UltraPRIME[®] Primer.

Gypsum substrates must exhibit a sound surface, be free from dust and surface weakness prior to application of the primer.

Non-soluble adhesives must be scraped to a well bonded residue. Water soluble and pressure sensitive adhesives must be removed mechanically to the substrate (Contact Technical Services for details). Verify type of adhesive prior to mechanical removal to ensure adhesive containing asbestos is not introduced into the environment. Follow all local, state and federal laws for removal and disposal of adhesive or flooring materials containing asbestos. Ultra4100[®] is not for use as a suitable means to encapsulate residue of hazardous materials.

Wood floors must satisfy local building codes, utilize exterior grade plywood, suitable OSB or other resistant to water, and be free from deflection. The wood must be free of contaminants (oils, wax, dirt etc.) that could function as bond breaker prior to application of the primer. Wood floors that exhibit deflection greater than L/360 require the use of reinforcing lath, contact Technical Support for details.

SUBSTRATE PRIMING

Prime properly prepared substrate with UltraPRIME[®] Primer prior to the application of Ultra4100[®], prime properly prepared porous (concrete) and non-porous substrates (adhesive residue, epoxy terrazzo, ceramic tile etc.) with UltraPRIME[®] by soft tipped broom (porous) or 3/8" nap roller (non-porous). Carefully read UltraPRIME[®] Data Sheet to ENSURE UltraPRIME[®] is utilized diluted (porous substrates) or undiluted (non-porous substrates) per given substrate.

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Technical Support

Contact 667-701-1700

Precautions

Read and follow all precautions and warnings indicated on the product label and on the product Safety Data Sheet (SDS) available at Info@UltraProSystems.com

Limited Warranty

UltraPro Systems, LLC warrants to the initial purchaser only that the goods sold hereunder will be free from defects in material and workmanship and, except as otherwise set forth herein, will conform to the specifications provided. If any failure to meet this warranty appears within one year from the date of shipment of the goods, on the condition that UltraPro Systems, LLC will correct any such failure by either replacing or repairing any defective goods, at UltraPro Systems, LLC's option. The preceding paragraph sets forth the exclusive remedy for all claims based on failure of or defect in the goods sold hereunder, whether such failure or defect arises before or during the warranty period and whether a claim, however instituted, is based on contract, indemnity, warranty, tort (including negligence), strict liability or otherwise. The forgoing warranty is exclusive and is in lieu of all other warranties whether written, oral, implied or statutory.

SUBSTRATE PRIMING Con't

Ultra4100[®] is very flowable and will flow through any exposed voids. To avoid material flow in undesirable areas, seal voids or penetrations with a rapid setting patch or expanding foam. Ultra4100[®] has tremendous bonding properties, place tape or bond breaker on vertical surfaces that will contact the Ultra4100[®]. Provide a barrier between Ultra4100[®] and metallic construction (e.g. heating pipes). When applying Ultra4100[®] on wood substrates double prime with UltraPRIME[®] NEAT and utilize reinforcing lath stapled to the wood floor after priming.

MIXING

Water: 4 - 4.75 US Qts (3.75 - 4.5 L) per 50 lbs (22.7 kg)

Mix Time: 2 minutes with minimum 650 RPM drill or through pump.

Over-watering and/or under mixing (failing to generate adequate shear) will result in lower ultimate compressive strengths. Add designated clean, potable water to a clean mixing barrel, add the powder and mix at the designated speed for 2 minutes. Ensure all material is homogeneous, and no dry lumps or unmixed material is at the bottom of the mix. During mixing, keep the paddle below the surface of the material to reduce introduction of excess air into the mix. Once mixed, pour onto the substrate immediately to maximize material flow and placement time.

PUMPING

Ultra4100[®] may be mixed and/or pumped with most standard batch or inline mixing/pumping equipment. Contact UltraPro Systems[®] Technical Services for pump questions.

MATERIAL APPLICATION

Immediately after mixing is complete pour the mix on the substrate, rake to the required depth and smooth using appropriate tools (smoother or porcupine roller). When placing mixed material, maintain a wet edge, always pouring back into the leading edge of the previous placement.

DRYING TIME

Do not use forced air to assist in drying Ultra4100[®], but do provide for adequate ventilation and circulation of air. Ultra4100[®] generally hardens to accept light foot traffic 3-4 hours after placement. Avoid construction traffic for a minimum of 16-24 hours (temperature dependent).

Ultra4100[®] is self drying, do not wet cure or use curing or sealing compounds. To facilitate drying, ensure rooms where Ultra4100[®] is installed have air circulation. Do not introduce heavy airflow to the surface of Ultra4100[®] until after 16-24 hours of drying. Temperature, humidity and airflow will impact drying time. The use of a moisture meter is recommended to verify readiness for flooring. Multiple areas should be surveyed to ensure dryness throughout. Use of a Delmhorst G-79 and a reading of 5% moisture content or lower, or a GE[®] Protimeter moisture meter such as the Aquant. In the RF (Radio Frequency) mode a reading of 180 or lower indicates suitable dryness for any floor covering. General drying guidelines assuming ambient temps of 70°F with air circulation (Cooler temperatures &/or high humidity will increase drying times);

Breathable Flooring Systems

Depth	Dry Time Required Before Installing Flooring
0 - 1"	16 hours (next day)
1 - 2"	36 hours (1.5 days)
2 - 3"	60 hours (2.5 days)

Non-Breathable / Impervious Flooring Systems

Depth	Dry Time Required Before Installing Flooring
0 - 1/2"	24 hours
1/2 - 1"	48 hours
>1"	48 hours plus 36 hours for each additional 1/2'

When Ultra4100[®] may be subject to water exposure, prime with an acrylic primer, such as UltraPRIME[®] Primer. Follow primer instructions.

Published technical data and instructions are subject to change without notice. Please contact UltraPro Systems, LLC for the most current technical data, safety data and application instructions.