



**1. Product Name**

Dramatic Surface Products™

- DSP™ 500 Primer
- DSP™ 510 Standard Self-Leveling Underlayment
- DSP™ 520 Premium Self-Leveling Underlayment
- DSP™ 530 Ultra Wear Surface/Underlayment
- DSP™ 540 Extreme Fiber Reinforced Underlayment

**2. Manufacturer**

Specialty Construction Brands, Inc.  
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 Aurora, IL 60504-6451  
 (800) 323-7407  
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 www.DramaticSurfaceProducts.com

**3. Product Description**

**BASIC USE**

**DSP 500 Primer**

DSP 500 Primer is a multipurpose, acrylic-based primer designed to improve the adhesion and bond strength of underlayment to substrate. DSP 500 is recommended for underlayment products manufactured by Dramatic Surface Products and can be used for the following substrates:

- Concrete cementitious backer units (CBU or cement board)
- Exterior grade plywood
- Oriented strand board (OSB)
- Adhesive residue (except tacky or pressure sensitive adhesive)
- Cold-rolled steel
- Existing ceramic tile
- VCT or noncushioned vinyl sheet goods, when bonded to a substrate approved for tile

**DSP 510**

DSP 510 Standard Self-Leveling Underlayment is a cement based, free-flowing product for interior dry area substrates. DSP 510 seeks its own level and provides a smooth finished surface ideal for the installation of carpet, ceramic or natural stone, resilient flooring, laminate, wood and other floor coverings. It can be used for the following substrates:

- Concrete
- Ceramic or quarry tile
- Pavers



- Cement terrazzo
- Cement backer board

**DSP 520**

DSP 520 Premium Self-Leveling Underlayment is a fast curing, free-flowing, cement based underlayment designed for interior dry area substrates. Particularly suited for large surfaces, DSP 520 can be installed by pouring or pumping and can be used with any of the following substrates:

- Concrete
- Ceramic or quarry tile
- Pavers
- Cement terrazzo
- Cement backer board
- Epoxy terrazzo
- VCT or full glued down, noncushioned vinyl sheet goods
- Exterior grade plywood with reinforcement mesh
- Oriented Strand Board (OSB) with reinforcement mesh

**DSP 530**

DSP 530 Ultra Wear Surface/Underlayment is a cement based product that can be used as a strong interior wear surface or as a high-performing self-leveling underlayment (SLU). As an interior wear surface, DSP 530 provides a smooth finish to accept topical colorants/coatings; as an interior self-leveler, it provides a surface ideal for all types of floor coverings, including carpet, ceramic or natural stone tile, resilient, laminate and wood flooring. Suitable substrates include:

- Concrete
- Ceramic, porcelain or quarry tile



- Pavers
- Cement terrazzo
- Cement backer board
- Epoxy terrazzo
- VCT or full glue-down, non-cushioned vinyl sheet goods
- Exterior grade plywood with reinforcement mesh
- Existing wood flooring with reinforcement mesh

**DSP 540**

DSP 540 Extreme Fiber Reinforced Underlayment is a high performance, self-leveling underlayment. Highly crack resistant with low shrinkage, it provides a smooth finish ideal for all types of floor covering, including carpet, ceramic or natural stone tile, resilient, laminate flooring and wood flooring. Suitable substrates include:

- Concrete
- Ceramic, porcelain or quarry tile
- Pavers
- Cement terrazzo
- Cement backer board
- Epoxy terrazzo
- VCT or full glue-down, noncushioned vinyl sheet goods
- Exterior grade plywood without reinforcement mesh
- Existing wood flooring without reinforcement mesh
- Can be used with radiant heating systems

**COMPOSITION & MATERIALS**

DSP 500 is an acrylic latex based primer. DSP 510, DSP 520, DSP 530 and DSP 540 are calcium aluminate based cement products with crystalline silica, chemicals and inorganic materials.

**SIZES**

DSP 500 Primer is available in 1 gallon (3.78 L) jugs and 5 gallon (18.92 L) pails. DSP 510 Standard Self-Leveling Underlayment, DSP 520 Premium Self-Leveling Underlayment and DSP 530 Ultra Wear Surface/Underlayment are offered in 50 lb (22.67 kg) moisture resistant bags.

**BENEFITS**

**DSP 500 Primer**

- Excellent bond to a wide variety of substrates
- Tolerates a wide variety of surface conditions
- No slurry coat needed over non-porous substrates
- Solvent free
- Does not contain volatile organic compounds (VOC)

**DSP 510 & DSP 520**

- Calcium aluminate technology for rapid strength development
- Superior flow properties
- Can be applied over wet concrete (RH 95% or lower)
- DSP 510 - 1/16" (1.6 mm) to 1.5" (38.1 mm) in a single pour or to 5" (127 mm) with use of aggregates
- DSP 520 - Featheredge to 1.5" (38.1 mm) in a single pour or to 5" (127 mm) with use of aggregates
- Cures to a smooth, consistent finish
- Extremely low shrinkage and crack resistant
- DSP 510 - Finished floor goods can be applied as soon as 48 hours
- DSP 520 - Finished floor goods can be applied as soon as 16 hours

**DSP 530**

- Dual-purpose; for use as an interior wear surface or as a self-leveling underlayment
- Pumpable or pourable for application directly over new or moist concrete (RH 95% or lower)
- Accepts topical or integral colorants
- Thickness ranges from 1/16" - 1 1/2" (1.6 - 38 mm) depth in a single pour
- Walkable in 2 - 4 hours; finished floor goods can be applied as soon as 6 hours
- Cures to a smooth, consistent finish
- Extremely low shrinkage; crack resistant
- Available in gray or white

**DSP 540**

- Calcium aluminate technology for rapid strength development
- Pumpable or pourable for application directly over new or moist concrete (RH 95%)
- Can be used with radiant heating systems
- Walkable in 2 - 4 hours, finished floor goods can be applied as soon as 6 hours

TABLE 1 TECHNICAL PROPERTIES				
Test & Method	DSP 510	DSP 520	DSP 530	DSP 540
ASTM C109, 28 day Compressive strength	4000 psi (27.6 MPa)	5000 psi (34.5 MPa)	6000 psi (41.3 MPa)	6000 psi (41.3 MPa)
ASTM C580, 28 day Flexural strength	900 psi (6.2 MPa)	1100 psi (7.58 MPa)	1200 psi (8.27 MPa)	1200 psi (8.27 MPa)
ASTM D3931 Bond strength (concrete)	325 - 375 psi (2.24 - 2.58 MPa)	350 - 400 psi (2.41 - 2.75 MPa)	350 - 400 psi (2.4 - 2.75 MPa)	350 - 400 psi (2.4 - 2.75 MPa)
ASTM C531, 28 day Shrinkage	0.025% - 0.045%	0.025 - 0.045%	0.025 - 0.045%	0.025 - 0.045%
Walkable hardness	2 - 4 hours	2 - 4 hours	2 - 4 hours	2 - 4 hours
Working time	15 - 20 minutes	15 - 20 minutes	15 - 20 minutes	15 - 20 minutes
Flooring installation <sup>1</sup>	48 - 72 hours	12 - 16 hours	6 hours (permeable) 12 - 24 (nonpermeable)	6 hours (permeable) 12 - 24 (nonpermeable)
Ideal slump range <sup>2</sup>	11" - 12" (28 - 30 cm)	11.5" - 12.5" (29 - 32 cm)	10.5" - 11.5" (27 - 29 cm)	10.5" - 11.5" (27 - 29 cm)

<sup>1</sup> Flooring installation after application is dependent on thickness, drying conditions and type of flooring.  
<sup>2</sup> Ideal slump range is based on a plastic/metal pipe 2" (51 mm) diameter x 4" (102 mm) high.

DSP 500	
Physical state	Acrylic emulsion
Open time	Varies with temperature and humidity
Color	White; dries clear
Odor	Nil
Viscosity	Thin, liquid
Weight per pound/	8.8 lb ± 0.1 lb
Weight per liter	1.06 kg ± 0.01 kg

**LIMITATIONS**

**DSP 500 Primer**

- Not for use as a sealer
- Do not apply over wet areas
- Do not use in areas subject to hydrostatic pressure
- Do not use as a wear surface

**DSP 510, DSP 520, DSP 530, DSP 540**

- Use for dry area interior applications only
- Do not apply when the temperature is below 50 degrees F (10 degrees C)
- Not for use in conditions of hydrostatic pressure or excessive moisture
- Do not use DSP 510, DSP 520 or DSP 540 as a wear surface
- Do not use DSP 510 or DSP 520 over wood substrates or vinyl

**4. Technical Data**

**APPLICABLE STANDARDS**

**ASTM International (ASTM)**

- ASTM C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in or (50-mm) Cube Specimens)

- ASTM C531 Standard Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
- ASTM C580 Standard Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes
- ASTM D3931 Standard Test Method for Determining Strength of Gap-Filling Adhesive Bonds in Shear by Compression Loading
- ASTM F1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
- ASTM F2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

**TECHNICAL PROPERTIES**

See Table 1.

**ENVIRONMENTAL CONSIDERATIONS**

DSP 500 Primer, DSP 510 Standard Self-Leveling Underlayment, DSP 520 Premium Self-Leveling Underlayment, DSP 530 Ultra Wear Surface/Underlayment and DSP 540 Extreme Fiber-



Reinforced Underlayment contribute toward LEED certification.

**5. Installation**

**PREPARATORY WORK**

Store materials to protect from exposure to harmful environmental conditions in a cool dry area away from direct sunlight and at temperature and humidity conditions recommended by the manufacturer. Keep DSP 500 from freezing.

**DSP 500 Primer**

Refer to surface preparation instructions on the product package.

**DSP 510, DSP 520, DSP 530 & DSP 540**

Surfaces must be structurally sound, dry and free from elements that would prevent a good bond, including oil, grease, dust, loose or peeling paint, sealers, floor finishes, curing compounds or contaminants. All concrete and cementitious substrates must be fully cured and free of hydrostatic pressure. Ensure moisture content of substrates is acceptable for underlayment installation. Test moisture vapor to ASTM F1869. Relative humidity must not exceed 95% when tested to ASTM F2170.

Do not cover existing building expansion or control joints and provide control joints where specified. To accommodate typical building movement, such as thermal expansion and contraction, create a minimum 1/8" - 1/4" (3 - 6 mm) wide gap where underlayment abuts walls, columns and fixtures.

Surfaces must be primed prior to installation of the self-leveling underlayment. Use DSP 500 Primer according to instructions provided on the primer label. Allow the primer to dry to a clear film, and then install DSP 510 Standard Self-Leveling Underlayment, DSP 520 Premium Self-Leveling Underlayment, DSP 530 Ultra Wear Surface/Underlayment or DSP 540 Extreme Fiber-Reinforced Self-Leveling Underlayment.

Wood subflooring must be securely fastened with screw type or ring shank nails and adhesive. Installation of exterior grade plywood or OSB (APA-rated Sturd-I-Floor OSB, Exposure 1 or better) requires a 3/4" (19 mm) single layer minimum thickness on bridged floor joists up to 24" (60 cm) on center. Allow a gap of 1/8" to 1/4" (3 - 6 mm) between sheets of plywood or OSB. Long edges of the subfloor must be tongue and groove or must be supported by bridging between floor joists.

Plug all floor openings, gaps and cracks and install termination dams to prevent seepage. Prime the floor and allow the primer to dry to a

TABLE 2 INSTALLATION METHODS - COVERAGE				
DSP 510, DSP 520, DSP 530, DSP 540 Underlayments				
Thickness	DSP 510	DSP 520	DSP 530	DSP 540
1/8" (3 mm)	42 - 48 ft <sup>2</sup> (3.9 - 4.5 m <sup>2</sup> )	44 - 50 ft <sup>2</sup> (4.1 - 4.6 m <sup>2</sup> )	44 - 50 ft <sup>2</sup> (4.1 - 4.6 m <sup>2</sup> )	44 - 50 ft <sup>2</sup> (4.1 - 4.6 m <sup>2</sup> )
1/4" (6 mm)	21 - 25 ft <sup>2</sup> (1.9 - 2.3 m <sup>2</sup> )	22 - 27 ft <sup>2</sup> (2.0 - 2.5 m <sup>2</sup> )	22 - 27 ft <sup>2</sup> (2.0 - 2.5 m <sup>2</sup> )	22 - 27 ft <sup>2</sup> (2.0 - 2.5 m <sup>2</sup> )
1/2" (12 mm)	10 - 12 ft <sup>2</sup> (0.9 - 1.1 m <sup>2</sup> )	11 - 13 ft <sup>2</sup> (1.0 - 1.2 m <sup>2</sup> )	11 - 13 ft <sup>2</sup> (1.0 - 1.2 m <sup>2</sup> )	11 - 13 ft <sup>2</sup> (1.0 - 1.2 m <sup>2</sup> )
1" (25.4 mm)	5 - 6 ft <sup>2</sup> (0.46 - 0.55 m <sup>2</sup> )	5 - 6 ft <sup>2</sup> (0.46 - 0.55 m <sup>2</sup> )	5 - 6 ft <sup>2</sup> (0.46 - 0.55 m <sup>2</sup> )	5 - 6 ft <sup>2</sup> (0.46 - 0.55 m <sup>2</sup> )
DSP 500 Primer				
Substrate	Primer to Water Ratio		Coverage per Gallon	
Concrete (may require 2 coats for porous substrates), CBU	1:3		410 ft <sup>2</sup> (38.09 m <sup>2</sup> )	
Wood, vinyl	3:1		250 ft <sup>2</sup> (23.22 m <sup>2</sup> )	
Tile, linoleum, steel	Full Strength		140 ft <sup>2</sup> (13.0 m <sup>2</sup> )	

clear film. Staple 1/4" (6 mm) galvanized diamond metal or plastic lath to the floor, overlapping at the seams. Then install the underlayment according to the joist spacing:

- Joist spacing to 16" (40 cm) - Apply 3/8" (9 mm) thickness
- Joist spacing 16" - 20" (40 - 50 cm) - Apply 1/2" (12 mm) thickness
- Joist spacing 20" - 24" (50 - 60 cm) - Apply 5/8" (15 mm) thickness

For installation over asphalt-based cutback adhesive, remove adhesive by scraping until all that remains is a thin transparent layer of adhesive residue.

**METHODS**

**DSP 500 Primer**

Room and product should be maintained at 50 - 70 degrees F (10 - 21 degrees C) for 24 hours before, during and 48 hours after installation. Mix DSP 500 Primer in the ratios listed in the coverage chart. See Table 2.

DSP 500 Primer can be applied with a paintbrush, short nap paint roller or soft bristled push broom. Apply a thin, even, continuous coat and allow the product to dry to a clear, slightly tacky film. Do not allow the primer to puddle.

DSP 500 Primer dries to a clear film in approximately 1 - 3 hours. Colder temperatures and high humidity will increase drying time. While the primer is still wet, use warm, soapy water to clean primer from tools.

**DSP 510, DSP 520, DSP 530, DSP 540**

All surfaces must be primed with Dramatic Surface Products DSP 500 Primer before installing DSP 510 Standard Self-Leveling Underlayment, DSP 520 Premium Self-Leveling Underlayment, DSP 530 Ultra Wear Surface/Underlayment, and DSP 540 Extreme Fiber-Reinforced Underlayment.

**Mixing**

For DSP 510 Standard Self-Leveling Underlayment, slowly add the underlayment to 4.5 - 5 quarts (4.3 - 4.7 L) of clean, cool water and mix with a high power drill (650 RPM).

For DSP 520 Premium Self-Leveling Underlayment, slowly add the underlayment to 4.75 - 5.25 quarts (4.5 - 5.0 L) of clean, cool water and mix with a high power drill (650 RPM).

For DSP 530 and DSP 540, slowly add the underlayment to 5 - 5.25 qt (4.7 - 5.0 L) of clean, cool water. Mix thoroughly for 2 - 3 minutes with a high power drill (650 rpm).

After mixing thoroughly, scrape the sides of the container and remix to ensure a smooth, lump-free consistency.

**Application**

Immediately after mixing, pour or pump the underlayment onto the primed flooring surface. Spread into place with a long-handled, gauged spreader or smoother, covering all high spots on the floor.

Working time is approximately 15 - 20 minutes, depending on temperature and humidity. High temperatures will shorten working time.

Thicknesses up to 5" (127 mm) can be poured with an aggregate, which must be well-graded, washed, dry pea gravel that is 1/8" (3 mm) or larger. Do not use sand.

DSP 510, DSP 520, DSP 530 and DSP 540 dry to walkable hardness in 2 - 4 hours. Floor covering installation varies by underlayment applied, from as little as 6 hours to 48 hours after application, at 70 degrees F (21 degrees C) and 50% percent relative humidity.

In hot, dry or drafty conditions protect the installation to avoid fast water loss while curing.



**Surface Finishes**

When used as a wear surface, DSP 530 Ultra Wear Surface/Underlayment requires a topical sealer to help protect the material from potential staining, to resist dirt and grime buildup and to make the surface easier to clean. Toppings can be applied 16 hours after curing. Most commercial toppings, including acrylic, polyurethane and epoxy-based systems, can be applied directly to DSP 530 Ultra Wear Surface/Underlayment. For best results, always test performance suitability and compatibility prior to application and consult toppings manufacturer for specific guidelines and procedures. For specific recommendations, contact Dramatic Surface Products representative.

**BUILDING CODES**

Installation must comply with the requirements of all applicable local, state and federal code jurisdictions.

**6. Availability & Cost**

**AVAILABILITY**

Products are available from certified distributors. Contact the manufacturer for information on local availability.

**COST**

Cost information can be obtained from a distributor in your area. To locate a local distributor, please visit the manufacturer's website: [www.DramaticSurfaceProducts.com](http://www.DramaticSurfaceProducts.com).

**7. Warranty**

Specialty Construction Brands, Inc., (SCB) offers a limited warranty to the original owner that the Dramatic Surface Products ("DSP Products") listed below will be free from manufacturing defects and will not break down or deteriorate under normal use for the period of time stated below (effective from the date of installation).

- DSP 510 Standard Self-Leveling Underlayment - 3 Years
- DSP 520 Premium Self-Leveling Underlayment - 5 Years
- DSP 530 - Ultra Wear Surface/Underlayment - 5 Years
- DSP 540 - Extreme Fiber-Reinforced Underlayment - 5 years

Complete warranty terms and conditions are available from the manufacturer. For details, consult Specialty Construction Brands, Inc. or visit the [www.DramaticSurfaceProducts.com](http://www.DramaticSurfaceProducts.com) website.

**8. Maintenance**

No special maintenance is required for properly installed product.

**9. Technical Services**

Technical assistance, including more detailed information, product literature, test results, project lists, assistance in preparing project specifications and arrangements for application supervision, is available by contacting Specialty Construction Brands, Inc.

**10. Filing Systems**

- MANU-SPEC®
- Additional product information is available from the manufacturer upon request.