



The Chemical Company

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Technical Data Guide

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Joint
Sealants

MasterSeal® SL 2™

Multi-component self-leveling polyurethane sealant

FORMERLY SONOLASTIC® SL 2™

PACKAGING

MASTERSEAL SL 2

- 1.5 gallon units (5.67 L) containing Part A and Part B
- 3 gallon units (11.34 L) containing Part A and Part B

MASTERSEAL P 173

1 pint (473 ml) cans,
12 pints per carton

YIELD

See page 3 for charts

STORAGE

Store in unopened containers in cool, clean, dry area out of direct sunlight. Elevated temperatures will shorten shelf life.

SHELF LIFE

PARTS A AND B

1 year when properly stored

MASTERSEAL 900 COLOR PACKS

5.5 years

MIXED VOC CONTENT

When mixed, product contains less than 64.4 g/L less water and exempt solvents

DESCRIPTION

MasterSeal SL 2 is a multi-component, self-leveling, elastomeric polyurethane sealant that is mixed and poured in place. When cured, it forms a tough, resilient joint seal that resists penetration and abrasion and remains flexible when exposed to weather and aging.

PRODUCT HIGHLIGHTS

- Abrasion resistant to help handle pedestrian and vehicular traffic
- Joint movement capability $\pm 25\%$ provides excellent flexibility for keeping moving joints weathertight
- Weather resistant, producing long-lasting weathertight seals
- Easy to gun and tool, speeding up application and making neater joints
- MasterSeal 905 accelerator available for use in cold climate applications to help speed initial cure
- No primer required for most construction materials, lowering installation costs
- Wide temperature-application range makes MasterSeal SL 2 suitable for all climates
- UL listed; Passes 4-hour, 4-inch, fire and hose stream test when used with Ultra Block or mineral wool
- Suitable for water immersion with documented performance in wet areas
- Chemical cure allows for faster turnaround time
- Bulk packaging results in less waste
- Long pot life offers extended working time
- Formulated to withstand pedestrian and vehicular traffic

SUBSTRATES

- Concrete
- Metal

COLOR

40 standard, stocked colors are available. Refer to the Popular Palette for Sealants and Waterproofing.

463 standard (nonstocked) colors are also available, and custom matching can be done upon request. Refer to the Color Portfolio.

Available in pre-tinted colors:
precast gray and limestone

- 1.5 gallon (5.67 L) units
 - 3 gallon (11.34 L) units
 - 4.5 gallon (17.03 L) units
- Minimum order is 100 pails in 4.5 gallon units.

APPLICATIONS

- Horizontal
- Interior and exterior
- Expansion joints
- Control joints
- Pavers
- Plaza decks
- Industrial floors
- Driveways/garages
- Sidewalks
- Decks
- Parking structures
- Pitch pans

Technical Data

Composition

MasterSeal SL 2 is a multi-component polyurethane that cures by chemical reaction after proper mixing.

Compliances

- ASTM C 920, Type M, Grade P, Class 25, Use T, NT, M, A, O* and I
 - Federal Specification TT-S-00227E, Type I, Class A
 - Corps of Engineers CRD-C-506, Type I, Class A
 - Canadian Specification CAN/CGSB 19.24-M90, Classification MCG-1-40-B-L, No. 81031
 - CFI accepted
 - USDA compliant for use in areas that handle meat and poultry
- * Refer to substrates in Where to Use.

Test Data

PROPERTY	RESULTS SL 2	RESULTS SL 2 SLOPE GRADE	TEST METHOD
Movement capability, %	±25	±25	ASTM C 719
Tensile strength, psi (MPa)	125 (0.9)	145 (1.0)	ASTM D 412
Elongation, %	240	225	ASTM D 412
Shrinkage	Nil	Nil	
Low-temperature flexibility, -15° F (-26° C)	Passes	Passes	ASTM C 793
Service temperature range, -40 to 180° F (-40 to 82° C)	Passes	Passes	
Stain and color change	None (no visible stain)	None (no visible stain)	ASTM C 510
Extrusion rate and application life	Passes	Passes	ASTM C 603
Rheological (flow), at 40° F (4° C)	Self-leveling	—	ASTM C 639
Hardness, Shore A			ASTM C 661
At standard conditions	30	30	
After heat aging (max Shore A: 50)	40	20	
Tack-free time, hrs, (Maximum 72 hrs)	< 24	< 24	ASTM C 679
Bond durability, on concrete, ±25% movement	Passes*	Passes*	ASTM C 719
Weight loss, after heat aging, %	5	5	ASTM C 792
Cracking and chalking, after heat aging	None	None	ASTM C 792
Artificial weathering, Xenon arc, 250 hours	Passes*	Passes*	ASTM C 793
Artificial weathering, Xenon arc, 2,000 hours	No surface cracking	No surface cracking	ASTM G 26
Adhesion in peel, on concrete	Passes*	Passes*	ASTM C 794
Water immersion, 122° F (50° C)	Passes 10 weeks with movement cycling	Passes 10 weeks with movement cycling	ASTM C 1247

*Primed for water immersion dictated by ASTM C 920.

Test results are typical values obtained under laboratory conditions. Reasonable variations can be expected.

TABLE 1

Joint Width and Sealant Depth

JOINT WIDTH, IN (MM)	SEALANT DEPTH AT MIDPOINT, IN (MM)
¼–½ (6–13)	¼ (6)
½–¾ (13–19)	¼–⅜ (6–10)
¾–1 (19–25)	⅜–½ (10–13)
1–3 (25–75)	½ (13)

TABLE 2

Working Times

	STANDARD CONDITIONS 73° F (23° C)	COLDER TEMPERATURES 40° F (4° C)
No accelerator	1½ – 2 hrs	4½ – 5½ hrs
1–2 accelerators	30 – 45 min	1½ – 2 hrs
3 accelerators	—	45 min – 1 hr

Yield

LINEAR FEET PER GALLON*

JOINT DEPTH, (INCHES)	JOINT WIDTH (INCHES)									
	¼	⅜	½	⅝	¾	⅞	1	1½	2	3
¼	308	205	154	122	—	—	—	—	—	—
⅜	—	—	—	82	68	58	51	—	—	—
½	—	—	—	—	51	44	38	26	19	12

METERS PER LITER

JOINT DEPTH, (MM)	JOINT WIDTH (MM)									
	6	10	13	16	19	22	25	38	50	75
6	24.8	16.5	12.4	9.8	—	—	—	—	—	—
10	—	—	—	6.6	5.5	4.7	4.1	—	—	—
13	—	—	—	—	4.1	3.5	3.0	2.2	1.5	0.7

HOW TO APPLY

JOINT PREPARATION

1. The product may be used in sealant joints designed in accordance with SWR Institute's Sealants - The Professional's Guide.
2. In optimal conditions, the depth of the sealant should be ½ the width of the joint. The sealant joint depth (measured at the center) should always fall between the maximum depth of ½" and the minimum depth of ¼". Refer to Table 1.
3. In deep joints, the sealant depth must be controlled by closed cell backer rod or soft backer rod. Where the joint depth does not permit the use of backer rod, a bond breaker (polyethylene strip) must be used to prevent three-point bonding.
4. To maintain the recommended sealant depth, install backer rod by compressing and rolling it into the joint channel without stretching it lengthwise. Closed cell backer rod should be about ¼" (3 mm) larger in diameter than the width of the joint to allow for compression. Soft backer rod should be approximately 25% larger in diameter than the joint width. The sealant does not adhere to it, and no separate bond breaker is required. Do not prime or puncture the backer rod.

SURFACE PREPARATION

It is essential that joints be clean and dry. Joint surfaces must be structurally sound, fully cured, and free of all loose aggregate, paint, oil, grease, asphalt, wax, mastic compounds, waterproofing compounds, form-release materials, curing compounds or any other contaminants.

NEW CONCRETE

Remove all loose material from joints by wire brushing. Sandblast surfaces in contact with form-release agents. Fresh concrete must be fully cured. Laitance must be removed by abrading.

OLD CONCRETE

For previously sealed joints, remove all old material by mechanical means. If joint surfaces have absorbed oils, remove sufficient concrete to ensure a clean surface.

PRIMING

1. For most applications, priming is not required; joints subject to periodic water immersion, however, must be primed with MasterSeal P 173. On surfaces other than concrete, conduct a test application to verify adhesion.
2. Apply primer in a thin, uniform film. Avoid buildup of excess primer.
3. Avoid applying primer beyond joint faces. To minimize the contamination of adjacent surfaces, apply masking tape before priming and remove before the sealant has begun to thicken and set.

4. Allow approximately 15 – 30 minutes drying time before applying sealant (primer should be tack-free). Priming and sealing must be done on the same day.

MIXING

1. MasterSeal SL 2 is a multi-component system with a configuration of Part A, Part B and sometimes a color pack.
2. Transfer entire contents of Part B to Part A container using a spatula or margin trowel.
3. Part B must be mixed thoroughly with Part A. Before adding pigment, scrape sides of container to ensure complete mixing of Parts A and B. With a slow-speed drill and a sealant mixing paddle, mix 4–6 minutes. Keep the paddle blade below the surface of the sealant to avoid whipping air into the sealant.
4. Transfer the entire contents of one MasterSeal 900 pigment can into the mixed Part A and B. Use a spatula or knife to remove all the pigment from the container. Continue mixing with a slow-speed drill and slotted paddle until color is uniform. During the process, scrape the sides and bottom of the mixing container several times to obtain a complete mix.
5. The pot life of mixed MasterSeal SL2 is influenced by temperature. See Table 2 for specific data. MasterSeal 905 accelerator may be added to adjust the initial cure rate.

APPLICATION

1. All caulking and sealing should be performed when temperatures are above 40° F (4° C); any moisture or frost on surfaces will adversely affect adhesion.
2. Fill joints from the bottom; avoid bridging of the joint, which may form air voids.
3. For large joints, the self-leveling grade may be poured directly from the can.
4. For smaller joints and for all slope-grade applications, fill the joint by flowing the sealant from a bulk-loading gun.
5. Light tooling of the slope-grade sealant is recommended to smooth out ripples. On sloped surfaces, tool from the lowest point to the highest. Do not use soap or solvent.

CURING

Cure time will vary with humidity and temperature. Initial cure is within 24 hours and complete cure takes approximately 7 days. Allow 14 day cure at 70° F (23° C) prior to water immersion. Cure rates are dependent on temperature and humidity. Protect joint from dirt and traffic until cured. See Table 2 for use of MasterSeal 905 accelerator.

CLEANUP

1. Immediately after use and before sealant has cured, clean equipment with MasterSeal 990 or xylene.
2. The cured sealant may be removed by cutting with a sharp-edged tool. Remove thin films by abrading.

FOR BEST PERFORMANCE

- Do not allow MasterSeal SL 2 sealants to come into contact with alcohol-based materials or solvents.
- Do not apply polyurethane sealants in the vicinity of uncured silicone sealants or uncured MasterSeal NP 150.
- When MasterSeal SL 2 is to be used in areas subject to continuous water immersion, cure for 14 days at 70° F (23° C). Allow longer cure time at lower temperatures. Always use MasterSeal P 173.

- Do not use in swimming pools, or other submerged conditions where the sealant will be exposed to strong oxidizers. Avoid submerged conditions where water temperatures will exceed 120° F (58° C).
- For slopes up to 12% use MasterSeal SL 2 Slope Grade. For slopes over 12% use MasterSeal NP 2 sealant.
- Backer rods, joint fillers or bond breakers must be tight to the sides of the joint to prevent loss of sealant through the bottom.
- For joints subject to puncture by high heels or umbrella points, a stiffer or higher density backup material is required. Cork or rigid non-impregnated cane-fiber joint fillers are suitable. Separate materials from the sealant by a non-adhering bond breaker (polyethylene tape).
- Do not use other caulks or sand as a bottom bed in a joint.
- Do not install when rain is expected before the sealant reaches initial cure (about 12 hours).
- Units of MasterSeal SL 2 are premeasured; do not use partial units.
- MasterSeal SL 2 may yellow in the presence of unvented artificial heat; this is a surface phenomenon that does not affect sealant performance.
- Use only MasterSeal 900 color packs intended for use with MasterSeal SL 2.
- Proper application is the responsibility of the user. Field visits by BASF personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

HEALTH, SAFETY AND ENVIRONMENTAL

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