BUILDING TRUST

PRODUCT DATA SHEET

Sikaflex® HY 100

(formerly MasterSeal® NP 100)

HIGH-PERFORMANCE HYBRID SEALANT

PRODUCT DESCRIPTION

Sikaflex® HY 100 is formulated with unique Sika polymers that allow for versatile adhesion to a variety of substrates while accommodating high movement and providing long-term durability.

Sikaflex® HY 100 is a high-performance, low-modulus, high movement, non-sag, fastcuring, ready-to-use hybrid sealant. It combines the best qualities of organic and silicone sealants to keep moving joints weathertight.

Sikaflex® HY 100 Tint Base is a one-component, tintable, non-sag, hybrid sealant. It can be tinted to multiple colors to meet aesthetic needs.

USES

- Vertical or horizontal
- Exterior or interior
- Above grade
- For sealing a variety of building joints against water and air intrusion
- Joints with extreme movement
- Storefront systems
- Expansion joints
- Panel walls
- Precast units
- Aluminum, vinyl, and wood window frames
- Fascia
- Parapets
- Sanitary applications
- Roofing

Substrates

- PVDF Coatings
- EIFS
- Stucco
- Aluminum
- Concrete
- Masonry
- Wood
- Stone
- Metal
- Vinyl
- Fiber cement siding

CHARACTERISTICS / ADVANTAGES

- Superior adhesion to a variety of substrates resulting in a long-term bond
- Low-modulus, formulated for joint movement of ±50%
- Resists chalking, cracking, and fading to maintain long-lasting weathertight seals
- Compatible with elastomeric coatings and can be painted soon after installation
- Easy to gun and tool, which speeds up application and makes neater joints
- Fast curing helps to speed up job site production
- Wide temperature application range
- Non-staining formula for use on stone and other sensitive substrates
- Meets all State and Federal VOC regulations
- Low-emitting material suitable for use in classrooms, health care facilities, private offices, and single-family homes
- Sikaflex® HY 100 Tint Base is available to meet a wide variety of color requirements
- Sikaflex® HY 100 Tint Base is packaged in an easy to open and seal plastic pail for job site convenience

- Sikaflex®-906 accelerator can be added to Sikaflex® HY 100 Tint Base to speed cure times
- Can adhere to green concrete up to 72 hours after pour

APPROVALS / STANDARDS

- ASTM C 920, Type S, Grade NS, Class 50, Use T and NT, M, A, and O**
- ASTM C 1382 for use with EIFS wall systems at 100% extension
- Federal Specification TT-S-001543A, Type II, Class A, Type Nonsag
- Federal Specification TT-S-00230C, Type II, Class A
- Corps of Engineers CRD-C-541, Type II, Class A
- CDPH/EHLB/Standard Method Version 1.1, 2010, compliance as a low emitting material for use in classrooms, private offices, and single-family residences

PRODUCT INFORMATION

Chemical Base	Sikaflex® HY 100 is a formulation based on hybrid technology.
Packaging	Sikaflex® HY 100 ▪ 300 ml (10.1 fl oz) cartridges, 30 per carton ▪ 590 ml (20 fl oz) ProPaks, 20 per carton Sikaflex® HY 100 Tint Base ▪ 1.5-gallon plastic pail (5.7L) units ▪ Sikaflex®-906 accelerator available in 8g tubes, 10 per carton
Shelf Life	1 year when properly stored
Storage Conditions	Store in original, unopened containers in a cool, dry area. Protect unopened containers from heat and direct sunshine. Storing at elevated temperatures will reduce shelf life.
Color	Sikaflex® HY 100 White, Stone, Limestone, Black, Medium Bronze, Aluminum Gray, Tan, Off White, Special Bronze, Redwood Tan, and Anodized Aluminum Sikaflex® HY 100 Tint Base 40 standard stocked colors are available (Color Pack Sikaflex 900) . Refer to the Sika Color portfolio for additional colors.

TECHNICAL INFORMATION

Shore A Hardness	17–23		(ASTM C 661)
Tensile Strength	160-200 psi (1.1-1.38 MPa)		(ASTM D 412)
Tensile Modulus of Elasticity	25–50 psi (0.24–0.34 MPa)		(ASTM D 412)
Movement Capability	± 50%		(ASTM C 719)
	Bond durability under cyclic movement Passes, pli on glass, aluminum, and concrete, ± 50% movement		(ASTM C 719)
Adhesion in peel	Aluminum	20.32 pli (5.71 kg/cm)	(ASTM C 794)
	Glass	21.33 pli (5.89 kg/cm)	
	Concrete	16.21 pli (3.75 kg/cm)	
Tear Strength	22 lb/in (3.90 kg/cm)		(ASTM D 1004)

Shrinkage	None
Service Temperature	-40 to 185 °F (-40 to 85 °C)
Thermal Resistance	**Weight loss after heat aging** ≤ 1% (ASTM C 1246)
Resistance to Weathering	No Cracking, Xenon arc, 2,000 hrs (ASTM G 155)
Color	**Stain and color change** Passes (no visible stain) (ASTM C 510)

Joint width

Joint Width and Sealant Depth

Joint Width in (mm)	Sealant Depth at midpoint, in (mm)
1/4 – 1/2 in (6–13 mm)	1/4 in (6 mm)
1/2 – 3/4 in (13–19 mm)	1/4 – 3/8 in (6–10 mm)
3/4 –1 in (19–25 mm)	3/8 – 1/2 in (10–13 mm)
1–11/2 in (25–38 mm)	1/2 in (13 mm)

Extrusion rate	48.10 mL/min (ASTM C 1183)

APPLICATION INFORMATION

Coverage

Linear feet per gallon*

Joint Width	Joint Depth (Inches)		
(inches)	1/4	3/8	1/2
1/4	308		
3/8	205		
1/2	154		
5/8	122	82	
3/4		68	51
7/8		58	44
1		51	38

* One gallon equals approximately 12 cartridges.

Meters per Liter*

Joint Width	Joint Depth (mm)		
(mm)	6	10	13
6	24.8		
10	16.5		
13	12.4		
16	9.8	6.6	
19		5.5	4.1
22		4.7	3.5
25		4.7	3.0

* One liter equals approximately 3.33 cartridges.

Sagging	**Rheological**, (sag in vertical displacement), at 120 °F (49 °C) No sag (ASTM C 639)
Pot Life	**Working Time, hours**

	Standard Conditions 73 °F (23 °C) & 50% RH	Colder Temperature 40 °F (4 °C)
No accelerator	6–7	72–96
1 accelerator	1–2	3–5
2 accelerators	< 1	1.5–2.5

Cure Time

The cure of Sikaflex® HY 100 varies with temperature and humidity.

The following times assume 75 °F (24 °C), 50% relative humidity, and a joint 1⁄2" (13 mm) in width by 1⁄4" (6 mm) in depth.
- Skins: within 1 hour
- Full cure: approximately 1 week
- Full adhesion development: 10–14 days

Sikaflex® HY 100 Tint Base has the same cure time as Sikaflex® HY 100. However, Sikaflex®-906 accelerator can help improve the Sikaflex® HY 100 Tint Base cure time.

Accelerated Curing for Sikaflex® HY 100 Tint Base

Skins: approximately 35 minutes with 1 tube of Sikaflex®-906 accelerator, 25 minutes with 2 tubes of Sikaflex®-906 accelerator Full adhesion development: approximately 10 days with 1 tube of Sikaflex®-906 accelerator, 6 days with 2 tubes of Sikaflex®-906 accelerator

NOTE: Sikaflex®-906 affects pot life and working time. Accelerated material cannot be resealed for future use. Refer to curing rate table.

Accelerator Recommendation

	Standard Conditions 73 °F (23 °C) & 50% RH	Higher Temperature 100 °F (38 °C) & 95% RH	Colder Temperature 35 °F (2 °C)
No accelerator	15 Days	3 Days	2.5 - 3 Months
1 accelerator	10 Days	3 Days	5 - 7 Weeks
2 accelerators	6 Days	1 Day	8 Days
3 accelerators		1 Day	6 Days

Tack Free Time

Pass 3–6 hrs (ASTM C 679)

Tack free time by touch
50-70 min

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

APPLICATION INSTRUCTIONS

NOTES ON INSTALLATION

- In cold weather, store the container at room temperature for at least 24 hours before using.
- Do not allow uncured Sikaflex® HY 100 to come into contact with alcohol-based materials or solvents.
- Sikaflex® HY 100 should not be applied adjacent to

other uncured sealants and certain petroleum-based products.
- Sikaflex® HY 100 can adhere to other residual sealants in restoration applications. For best results, always clean the joint as advised in the Surface Preparation section of this data guide. A product field adhesion test for Sikaflex® HY 100 within the specific application is always recommended to confirm the adhesion and suitability of the application.
- Sikaflex® HY 100 should not be used for continuous immersion in water. Contact Technical Services for recommendations.
- Do not use Sika® Primer-179 on nonporous surfaces such as aluminum, steel, vinyl, or PVDF based paints. Use Sika® Primer-173 on PVDF coated metals when testing dictates.
- Lower temperatures and humidity will extend curing times.
- Sikaflex® HY 100 can be painted over after a thin film or skin forms on the surface.
- In green concrete applications, sealing joints in concrete prior to 72 hours after concrete placement will impact the ability of the sealant
- to gain adhesion. Use Sika® Primer-173 or Sika® Primer-179 should be used as a primer in all green concrete applications. It is always recommended to conduct a mock up when applying NP 100 to green concrete.
- Pursuant to accepted industry standards and practices, using rigid paints and/or coatings over flexible sealants can result in a loss of adhesion of the applied paint and/or coating, due to the potential movement of the sealant. However, should painting and/or coating be desired it is required that the applicator of the paint and/or coating conduct on-site testing to determine compatibility and adhesion.
- Proper application is the responsibility of the user. Field visits by Sika personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

SUBSTRATE PREPARATION

Substrates must be structurally sound, fully cured, dry, and clean. Substrates should be free of the following: dirt, moisture, loose particles, oil, grease, asphalt, tar, paint, wax, rust, waterproofing or curing and parting compounds, membrane materials, and sealant residue.

Concrete, Stone, And Other Masonry

Clean by grinding, sandblasting, or wire brushing to expose a sound surface free of contamination and laitance.

Metal

1. Remove scale, rust, and loose coatings from metal to expose a bright surface.
2. Test all coatings on metal that cannot be removed to verify the adhesion of sealant or to determine an appropriate primer

Wood

1. New and weathered wood must be clean, dry, and sound.
2. Scrape away loose paint to bare wood.
3. Test all coatings on wood that cannot be removed to verify adhesion of sealant or to determine an appropriate primer.
4. For freshly treated wood; allow six months for weathering.

Joint Preparation

1. Design the number of joints and the joint width for a maximum of ±50% movement.
2. In optimum conditions, the depth of the sealant should be 1/2 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 ¼". Refer to Table 1.
3. In deep joints, control the sealant depth by installing Closed-Cell Backer-Rod or Soft Backer-Rod. Where the joint depth does not permit the use of backer-rod, use a bond breaker (polyethylene strip) to prevent three-sided adhesion.
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 1⁄8" 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. Because the sealant does not adhere to the backer-rod, no separate bond breaker is required. Do not prime or puncture the backer-rod.

MIXING

Sikaflex® HY 100

Sikaflex® HY 100 comes ready to use. Apply using a professional-grade caulking gun. Do not open cartridges or sausages until preparatory work has been completed.

Sikaflex® HY 100 Tint Base

Sikaflex® HY 100 Tint Base needs to be pigmented with

Sikaflex®-900 pigment to be used. Do not open pails until preparatory work has been completed.

To pigment material
- Transfer the entire contents of one Sikaflex®-900 pigment into the Sikaflex® HY 100 Tint Base.
- Add one can of Sikaflex®-900 pigment to one 1.5 gallon pail of Sikaflex® HY 100 Tint Base.
- Use a spatula or knife to remove all the pigment from the container.
- Mix with a slow-speed drill and slotted paddle for 3-4 minutes until the color is uniform.
- During the process, scrape the sides and bottom of the mixing container several times.

APPLICATION

Sikaflex® HY 100 & Sikaflex® HY 100 Tint Base

1. NOTE: Sikaflex® HY 100 is not a structural sealant.
2. Fill joints from the deepest point to the surface by holding an appropriately sized nozzle against the back of the joint.
3. Dry tooling is recommended. Proper tooling results in the correct bead shape, neat joints, and optimal adhesion.
4. Best practices dictate that all caulking and sealing be done when temperatures are above 40 °F (4 °C) to avoid application to moisture laden surfaces. Moisture on substrates will adversely affect adhesion. Application may proceed as low as 20 °F (-6 °C) if there is certainty that substrates are completely dry, free of frost, and clean as described under Surface Preparation.
5. Sikaflex® HY 100 Tint Base needs to be apply using a professional-grade bulk gun. Place the lid securely on the pail when not in use to maximize pot life.

CLEANING OF TOOLS

1. Immediately after use, clean equipment with SikaSwell®-990 or xylene. Use proper precautions when handling solvents.
2. Remove cured sealant by cutting with a sharp-edged tool.
3. Remove thin films by abrading.

LEGAL DISCLAIMER

- **KEEP CONTAINER TIGHTLY CLOSED**
- **KEEP OUT OF REACH OF CHILDREN**
- **NOT FOR INTERNAL CONSUMPTION**
- **FOR INDUSTRIAL USE ONLY**
- **FOR PROFESSIONAL USE ONLY**

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