

Product Data Sheet
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SikaWrap Hex 107G

SikaWrap® Hex 107G

Glass fiber fabric for structural strengthening

Description	SikaWrap Hex 107G is a unidirectional E-glass fiber fabric designed for strengthening concrete, timber and masonry. SikaWrap Hex 107G is reinforced in the weft direction with aramid fibers. SikaWrap Hex 107G is field laminated and bonded to the structure using Sikadur 300, Sikadur Hex 300 or Sikadur Hex 306 epoxy to form a glass fiber reinforced polymer (GFRP) used to strengthen structural elements. SikaWrap Hex 107G is pre-qualified for use on California Department of Transportation (Caltrans) projects.
Where to Use	<p>Load increases</p> <p>Seismic strengthening of:</p> <ul style="list-style-type: none"> ■ Columns ■ Masonry walls <p>Damage to structural parts</p> <p>Temporary strengthening</p> <p>Change in structural system</p> <p>Design or construction defects</p>
Advantages	<ul style="list-style-type: none"> ■ Approved by ICBO/ICC ER-5558. ■ Pre-qualified for use on specific Caltrans projects. ■ Used for shear, confinement or flexural strengthening. ■ Flexible, can be wrapped around complex shapes. ■ Light weight. ■ Non-corrosive. ■ Acid resistant. ■ Low aesthetic impact. ■ Economical.
Possible Applications	<ul style="list-style-type: none"> ■ Bridges ■ Parking Structures ■ Buildings ■ Marine Structures ■ Civil/Environmental Facilities
Packaging	Rolls: 50 in. x 150 ft.
How to Use	<p>Surface Preparation</p> <p>Surface must be clean and sound. It may be dry or damp, but free of standing water and frost. Remove dust, laitance, grease, curing compounds, impregnations, waxes, foreign particles, disintegrated materials and other bond inhibiting materials from the surface. Consult Sikadur 300, Sikadur Hex 300/306 and Sikadur 330 technical data sheets for additional information on surface preparation.</p> <p>Existing uneven surfaces must be filled with an appropriate repair mortar. The adhesive strength of the concrete must be verified following surface preparation by random pull-off testing (ACI 503R) at the discretion of the engineer. Minimum tensile strength, 200 psi (1.4 MPa) with concrete substrate failure.</p> <p>Surface Levelness/Irregularities: Maximum allowable deviation in 3 ft. (1 m) shall be limited to 1/4" (6 mm) but no greater than 1/8" (3 mm) per foot. Any sharp edges (i.e. fins, form-marks, etc.) must be ground smooth and flush.</p>

Typical Data

Storage Conditions	Store dry at 40°-95°F (4°-35°C)
Color	White (yellow weft fibers)
Primary Fiber Direction	0° (unidirectional)
Weight per Square Yard	27 oz. (913g/m ²)
Fiber Properties	
Tensile Strength	3.3 x 10 ⁵ (2,276 MPa)
Tensile Modulus	10.5 x 10 ⁶ psi (72,413 MPa)
Elongation	4%
Density	0.092 lbs./in. ³ (2.54 g/cc)



Cured Laminate Properties with Sikadur Hex 300 Epoxy Properties after standard cure followed by standard post cure [70° -75° F (21° -24° C) - 5 days, 48 hours at 140° F (60° C)]

Property	Average Value ¹		Average Value ²		ASTM Test Method
	US Units psi	SI Units MPa	US Units psi	SI Units MPa	
Tensile Strength*	94,000	648	86,600	597	D-3039
Tensile Modulus*	3,794,100	26,141	3,567,500	24,580	D-3039
Tensile % Elongation*	2.57	2.57	2.33	2.33	D-3039
140F - Tensile Strength	87,500	603	83,300	574	D-3039
140F - Tensile Modulus	3,661,900	25,230	3,496,900	24,094	D-3039
140F - % Elongation	2.55	2.55	2.43	2.43	D-3039
Compressive Strength	83,000	572	71,800	495	D-695
Compressive Modulus	4,281,400	29,499	3,224,600	22,217	D-695
90 deg Tensile Strength	7,200	50	4,600	32	D-3039
90 deg Tensile Modulus	1,245,000	8,578	977,400	6,734	D-3039
90 deg % Tensile Elongation	1.20	1.20	1.08	1.08	D-3039
Shear Strength +/-45 in. Plane	6,500	45	6,300	43	D-3518
Shear Modulus +/-45 in. Plane	345,400	2,380	160,800	1,108	D-3518
Ply Thickness (inch/mm)	0.04	1.016	---	---	---

* 24 sample coupons per test series; all other values based on 6 coupon test series

¹ Average value of test series

² Average value minus 2 standard deviations

Cured Laminate Properties with Sikadur Hex 300 Epoxy Properties after standard cure followed by standard post cure [70° -75° F (21° -24° C) - 5 days, 48 hours at 140° F (60° C)]

Property	Average Value ¹		Average Value ²		ASTM Test Method
	US Units psi	SI Units MPa	US Units psi	SI Units MPa	
Tensile Strength*	87,600	604	79,000	544	D-3039
Tensile Modulus*	3,706,900	25,541	3,476,900	23,956	D-3039
Tensile % Elongation*	2.43	2.43	2.18	2.18	D-3039
140F - Tensile Strength	72,700	501	67,100	462	D-3039
140F - Tensile Modulus	3,327,700	22,928	3,134,500	21,597	D-3039
140F - % Elongation	2.34	2.34	2.12	2.12	D-3039
Compressive Strength	72,000	496	59,400	409	D-695
Compressive Modulus	4,075,300	28,079	3,576,100	24,639	D-695
90 deg Tensile Strength	6,800	47	3,400	23	D-3039
90 deg Tensile Modulus	1,045,400	7,203	985,200	6,788	D-3039
90 deg % Tensile Elongation	0.78	0.78	0.60	0.60	D-3039
Shear Strength +/-45 in. Plane	9,300	64	8,500	59	D-3518
Shear Modulus +/-45 in. Plane	334,400	2,304	316,600	2,181	D-3518
Ply Thickness (inch/mm)	0.04	1.016	---	---	---

* 24 sample coupons per test series; all other values based on 6 coupon test series

¹ Average value of test series

² Average value minus 2 standard deviations

Preparation Work: Concrete - Blast clean, shotblast or use other approved mechanical means to provide an open roughened texture. Corners of structural elements to be wrapped must be rounded to a minimum radius of 1/2" (13 mm).

In certain applications and at the engineer's discretion, the intimate contact between the substrate and the fabric may be determined to be non-critical. In these cases, a thorough cleaning of the substrate using low pressure sand or water blasting is sufficient.

Mixing	Consult either Sikadur 300 or Sikadur Hex 300/306 technical data sheets for information on epoxy resins.
Application	<p>Prior to placing the fabric, the concrete surface is sealed using either Sikadur 300 or Sikadur Hex 300 epoxy. Material may be applied by spray, brush or roller. SikaWrap Hex 107G can be impregnated using either the Sikadur 300, Sikadur Hex 300 or Sikadur Hex 306 epoxy. For best results on larger projects, the impregnation process should be accomplished using a mechanically driven fabric saturator. In special cases where the size of the project does not justify the use of a saturator, the fabric may be saturated by hand using a roller prior to placement. In either case, installation of this system should be performed only by a specially trained, approved contractor.</p> <p>For overhead or vertical applications, prime concrete with Sikadur 30 or Sikadur 330 to improve tack. Saturate fabric with Sikadur 300, Sikadur Hex 300 or Sikadur Hex 306.</p>
Cutting SikaWrap	Fabric can be cut to appropriate length by using a commercial quality heavy duty scissor. Since dull or worn cutting implements can damage, weaken or fray the fiber their use should be avoided. Consult MSDS for proper handling procedures.
Limitations	<ul style="list-style-type: none"> Design calculations must be made and certified by an independent licensed professional engineer. System is a vapor barrier. Concrete should not be encapsulated in areas of freeze/thaw.
Caution	<p>SikaWrap fabric is non-reactive. However, caution must be used when handling since a fine "glass dust" may be present on the surface. Gloves must therefore be worn to protect against skin irritation.</p> <p>Caution must also be used when cutting SikaWrap fabric to protect against airborne glass dust generated by the cutting procedure. Use of an appropriate, properly fitted NIOSH approved respirator is recommended.</p>

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