

ET-3G™ Epoxy Adhesive

ET-3G is an epoxy-based, 1:1 ratio, two-component system ideal for general anchoring of threaded rod and rebar into concrete (cracked and uncracked) and masonry (cracked and uncracked).

Features

- Suitable for use under static and seismic loading conditions in cracked and uncracked concrete and masonry
- Ideal for general doweling and threaded rod applications
- Two-year shelf life for unopened cartridges stored between 45°F (7°C) and 90°F (32°C)

Product Information

Mix Ratio/Type	1:1 epoxy
Mixed Color	Teal
Base Materials	Concrete and masonry — cracked and uncracked
Base Material Conditions	Dry, water-saturated
Anchor Type	Threaded rod or rebar
Substrate Installation Temperature	50°F (4°C) to 110°F (43°C)
In-Service Temperature Range	-40°F (-40°C) to 150°F (65°C)
Storage Temperature	45°F (7°C) and 90°F (32°C)
Shelf Life	24 months
Volatile Organic Compound (VOC)	3 g/L
Chemical Resistance	See pp. 242–243
Manufactured in the US using global materials	

Test Criteria

ET-3G has been tested in accordance with ICC-ES AC308, AC58, ACI 355.4 and applicable ASTM test methods.

Code Reports, Standards and Compliance

Concrete — ICC-ES ESR pending (including post-installed rebar connections, City of LA and Florida Building Code); FL15730.
 Masonry — ICC-ES ESR pending.
 ASTM C881 and AASHTO M235 — Types I/IV and II/IV, Grade 3, Class C.
 UL Certification — CDPH Standard Method v1.2.
 NSF/ANSI/CAN 61 (216 in.² / 1,000 gal.)

Installation Instructions

Installation instructions are located at the following locations: pp. 48–51; product packaging; or strongtie.com/et3g.

- Hole cleaning brushes are located on p. 52.

ET-3G Cartridge System

Model No.	Capacity (ounces)	Cartridge Type	Carton Quantity	Dispensing Tool(s)	Mixing Nozzle ³
ET3G10 ⁴	8.5	Single	12	CDT10S	EMN221
ET3G22-N ⁴	22	Side-by-Side	10	EDT22S, EDTA22P, EDTA22CKT	
ET3G56	56	Side-by-Side	6	EDTA56P	

1. Cartridge estimation guidelines are available at strongtie.com/softwareandwebapplications/category.
2. Detailed information on dispensing tools, mixing nozzles and other adhesive accessories is available at strongtie.com.
3. Use only Simpson Strong-Tie mixing nozzles in accordance with Simpson Strong-Tie instructions. Modification or improper use of mixing nozzle may impair ET-3G adhesive performance.
4. One EMN221 mixing nozzle and one nozzle extension are supplied with each cartridge.
5. Use of rodless pneumatic tools to dispense single-tube, coaxial adhesive cartridges is prohibited.



ET-3G Adhesive

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ET-3G Cure Schedule

Base Material Temperature		Gel Time (minutes)	Cure Time (hr.)
°F	°C		
50	10	100	72
60	16	75	48
70	21	50	24
90	32	30	24
110	43	18	24

For water-saturated concrete, the cure times must be doubled.

ET-3G Typical Properties

Property		Class C	Test Method
		(> 60°F)	
Consistency		Non-sag	ASTM C881
Bond Strength, Slant Shear	Hardened to Hardened Concrete, 2-Day Cure ¹	2,600 psi	ASTM C882
	Hardened to Hardened Concrete, 14-Day Cure ¹	2,900 psi	
	Fresh to Hardened Concrete, 14-Day Cure ²	2,000 psi	
Compressive Yield Strength, 7-Day Cure ¹		13,000 psi	ASTM D695
Compressive Modulus, 7-Day Cure ¹		580,000 psi	ASTM D695
Heat Deflection Temperature, 7-Day Cure ²		132°F (56°C)	ASTM D648
Glass Transition Temperature, 7-Day Cure ²		124°F (51°C)	ASTM E1356
Decomposition Temperature, 24-Hour Cure ²		500°F (260°C)	ASTM E2550
Water Absorption, 24-Hours, 7-Day Cure ²		0.15%	ASTM D570
Shore D Hardness, 24-Hour Cure ²		84	ASTM D2240
Linear Coefficient of Shrinkage, 7-Day Cure ²		0.002 in./in.	ASTM D2566
Coefficient of Thermal Expansion ²		2.4 x 10 ⁻⁵ in./in.°F	ASTM C531

1. Material and curing conditions: 60° ± 2°F.

2. Material and curing conditions: 73° ± 2°F.

ET-3G Installation Information and Additional Data for Threaded Rod and Rebar¹



Characteristic	Symbol	Units	Nominal Anchor Diameter (in.) / Rebar Size							
			3/8 / #3	1/2 / #4	5/8 / #5	3/4 / #6	7/8 / #7	1 / #8	1 1/4 / #10	
Installation Information										
Drill Bit Diameter	d_{hole}	in.	1/2	5/8	3/4	7/8	1	1 1/8	1 3/8	
Maximum Tightening Torque	T_{inst}	ft.-lb.	10	20	30	45	60	80	125	
Permitted Embedment Depth Range	Minimum	h_{ef}	in.	2 3/8	2 3/4	3 1/8	3 1/2	3 3/4	4	5
	Maximum	h_{ef}	in.	7 1/2	10	12 1/2	15	17 1/2	20	25
Minimum Concrete Thickness	h_{min}	in.	$h_{ef} + 5d_{hole}$							
Critical Edge Distance ²	c_{ac}	in.	See footnote 2							
Minimum Edge Distance	c_{min}	in.	1 3/4						2 3/4	
Minimum Anchor Spacing	s_{min}	in.	3						6	

1. The information presented in this table is to be used in conjunction with the design criteria of ACI 318-19, ACI 318-14 and ACI 318-11.

2. $c_{ac} = h_{ef} (\tau_{k,uncr}/1,160)^{0.4} \times [3.1 - 0.7(h/h_{ef})]$, where:

$$[h/h_{ef}] \leq 2.4$$

$\tau_{k,uncr}$ = the characteristic bond strength in uncracked concrete, given in the tables that follow $\leq k_{uncr} ((h_{ef} \times f'_c)^{0.5}/(\pi \times d_{hole}))$

h = the member thickness (inches)

h_{ef} = the embedment depth (inches)

*See p. 14 for an explanation of the load table icons.

ET-3G™ Design Information — Concrete

ET-3G Tension Strength Design Data for Threaded Rod^{1,11}



Characteristic		Symbol	Units	Nominal Anchor Diameter (in.)						
				3/8	1/2	5/8	3/4	7/8	1	1 1/4
Steel Strength in Tension										
Threaded Rod	Minimum Tensile Stress Area	A_{se}	in ²	0.078	0.142	0.226	0.334	0.462	0.606	0.969
	Tension Resistance of Steel — ASTM F1554, Grade 36	N_{sa}	lb.	4,525	8,235	13,110	19,370	26,795	35,150	56,200
	Tension Resistance of Steel — ASTM A193, Grade B7			9,750	17,750	28,250	41,750	57,750	75,750	121,125
	Tension Resistance of Steel — Type 410 Stainless (ASTM A193, Grade B6)			8,580	15,620	24,860	36,740	50,820	66,660	106,590
	Tension Resistance of Steel — Types 304 and 316 Stainless (ASTM A193, Grade B8 and B8M)			4,445	8,095	12,880	19,040	26,335	34,540	55,235
	Strength Reduction Factor — Steel Failure			ϕ	—	0.75 ⁷				
Concrete Breakout Strength in Tension (2,500 psi ≤ f_c ≤ 8,000 psi)¹⁰										
Effectiveness Factor — Uncracked Concrete		k_{uncr}	—	24						
Effectiveness Factor — Cracked Concrete		k_{cr}	—	17						
Strength Reduction Factor — Breakout Failure		ϕ	—	0.65 ⁷						
Bond Strength in Tension (2,500 psi ≤ f_c ≤ 8,000 psi)¹⁰										
Uncracked Concrete ^{2,3,4}	Characteristic Bond Strength ⁵	$\tau_{k,uncr}$	psi	See strongtie.com for values						
	Permitted Embedment Depth Range	Minimum	h_{ef}	in.	2 3/8	2 3/4	3 1/8	3 1/2	3 3/4	4
Maximum		h_{ef}	in.	7 1/2	10	12 1/2	15	17 1/2	20	25
Cracked Concrete ^{2,3,4}	Characteristic Bond Strength ^{5,8,9}	$\tau_{k,cr}$	psi	See strongtie.com for values						
	Permitted Embedment Depth Range	Minimum	h_{ef}	in.	3	4	5	6	7	8
Maximum		h_{ef}	in.	7 1/2	10	12 1/2	15	17 1/2	20	25
Bond Strength in Tension — Bond Strength Reduction Factors for Continuous Special Inspection										
Strength Reduction Factor — Dry Concrete		$\phi_{dry,ci}$	—	0.65 ⁷						
Strength Reduction Factor — Water-Saturated Concrete — $h_{ef} \leq 12d_a$		$\phi_{sat,ci}$	—	0.55 ⁷			0.45 ⁷			
Additional Factor for Water-Saturated Concrete — $h_{ef} \leq 12d_a$		$K_{sat,ci}$ ⁶	—	1					0.84	
Strength Reduction Factor — Water-Saturated Concrete — $h_{ef} > 12d_a$		$\phi_{sat,ci}$	—	0.45 ⁷						
Additional Factor for Water-Saturated Concrete — $h_{ef} > 12d_a$		$K_{sat,ci}$ ⁶	—	0.57						
Bond Strength in Tension — Bond Strength Reduction Factors for Periodic Special Inspection										
Strength Reduction Factor — Dry Concrete		$\phi_{dry,pi}$	—	0.55 ⁷						
Strength Reduction Factor — Water-Saturated Concrete — $h_{ef} \leq 12d_a$		$\phi_{sat,pi}$	—	0.45 ⁷						
Additional Factor for Water-Saturated Concrete — $h_{ef} \leq 12d_a$		$K_{sat,pi}$ ⁶	—	1		0.93			0.71	
Strength Reduction Factor — Water-Saturated Concrete — $h_{ef} > 12d_a$		$\phi_{sat,pi}$	—	0.45 ⁷						
Additional Factor for Water-Saturated Concrete — $h_{ef} > 12d_a$		$K_{sat,pi}$ ⁶	—	0.48						

- The information presented in this table is to be used in conjunction with the design criteria of ACI 318-19, ACI 318-14 and ACI 318-11.
- Temperature Range: Maximum short-term temperature = 150°F, Maximum long-term temperature = 110°F.
- Short-term concrete temperatures are those that occur over short intervals (diurnal cycling).
- Long-term temperatures are roughly constant over significant periods of time.
- For anchors that only resist wind or seismic loads, bond strengths may be increased by 72%.
- In water-saturated concrete, multiply $\tau_{k,uncr}$ and $\tau_{k,cr}$ by K_{sat} .
- The tabulated value of ϕ applies when the load combinations from the IBC or ACI 318 are used and the requirements of ACI 318-19 17.5.3, ACI 318-14 17.3.3 or ACI 318-11 D.4.3, as applicable, are met. If the load combinations of ACI 318-11 Appendix C are used, refer to ACI 318-11 D.4.4 to determine the appropriate value of ϕ .
- For anchors installed in regions assigned to Seismic Design Category C, D, E or F, the bond strength values for 7/8" anchors must be multiplied by $\alpha_{N,seis} = 0.80$.
- For anchors installed in regions assigned to Seismic Design Category C, D, E or F, the bond strength values for 1" anchors must be multiplied by $\alpha_{N,seis} = 0.92$.
- The values of f'_c used for calculation purposes must not exceed 8,000 psi (55.1 MPa) for uncracked concrete. The value of f'_c used for calculation purposes must not exceed 2,500 psi (17.2 MPa) for tension resistance in cracked concrete.
- For lightweight concrete, the modification factor for bond strength shall be as given in ACI 318-19 17.2.4, ACI 318-14 17.2.6 or ACI 318-11 D.3.6, as applicable, where applicable.

*See p. 14 for an explanation of the load table icons.

ET-3G™ Design Information — Concrete

ET-3G Tension Strength Design Data for Rebar^{1,9}



Characteristic		Symbol	Units	Rebar Size							
				#3	#4	#5	#6	#7	#8	#10	
Steel Strength in Tension											
Rebar	Minimum Tensile Stress Area	A_{se}	in ²	0.11	0.2	0.31	0.44	0.6	0.79	1.23	
	Tension Resistance of Steel — Rebar (ASTM A615 Grade 60)	N_{sa}	lb.	9,900	18,000	27,900	39,600	54,000	71,100	110,700	
	Strength Reduction Factor — Steel Failure	ϕ	—	0.65 ⁷							
Concrete Breakout Strength in Tension (2,500 psi ≤ f_c ≤ 8,000 psi)⁸											
Effectiveness Factor — Uncracked Concrete		k_{uncr}	—	24							
Effectiveness Factor — Cracked Concrete		k_{cr}	—	17							
Strength Reduction Factor — Breakout Failure		ϕ	—	0.65 ⁷							
Bond Strength in Tension (2,500 psi ≤ f_c ≤ 8,000 psi)⁸											
Uncracked Concrete ^{2,3,4}	Characteristic Bond Strength ⁵	$\tau_{k,uncr}$	psi	See strongtie.com for values							
	Permitted Embedment Depth Range	Minimum	h_{ef}	in.	2 $\frac{3}{8}$	2 $\frac{3}{4}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	4	5
		Maximum	h_{ef}	in.	7 $\frac{1}{2}$	10	12 $\frac{1}{2}$	15	17 $\frac{1}{2}$	20	25
Cracked Concrete ^{2,3,4}	Characteristic Bond Strength ⁵	$\tau_{k,cr}$	psi	See strongtie.com for values							
	Permitted Embedment Depth Range	Minimum	h_{ef}	in.	3	4	5	6	7	8	10
		Maximum	h_{ef}	in.	7 $\frac{1}{2}$	10	12 $\frac{1}{2}$	15	17 $\frac{1}{2}$	20	25
Bond Strength in Tension — Bond Strength Reduction Factors for Continuous Special Inspection											
Strength Reduction Factor — Dry Concrete		$\phi_{dry,ci}$	—	0.65 ⁷							
Strength Reduction Factor — Water-Saturated Concrete – $h_{ef} \leq 12d_a$		$\phi_{sat,ci}$	—	0.55 ⁷			0.45 ⁷				
Additional Factor for Water-Saturated Concrete – $h_{ef} \leq 12d_a$		$K_{sat,ci}$ ⁶	—	1					0.84		
Strength Reduction Factor — Water-Saturated Concrete – $h_{ef} > 12d_a$		$\phi_{sat,ci}$	—	0.45 ⁷							
Additional Factor for Water-Saturated Concrete – $h_{ef} > 12d_a$		$K_{sat,ci}$ ⁶	—	0.57							
Bond Strength in Tension — Bond Strength Reduction Factors for Periodic Special Inspection											
Strength Reduction Factor — Dry Concrete		$\phi_{dry,pi}$	—	0.55 ⁷							
Strength Reduction Factor — Water-Saturated Concrete – $h_{ef} \leq 12d_a$		$\phi_{sat,pi}$	—	0.45 ⁷							
Additional Factor for Water-Saturated Concrete – $h_{ef} \leq 12d_a$		$K_{sat,pi}$ ⁶	—	1		0.93			0.71		
Strength Reduction Factor — Water-Saturated Concrete – $h_{ef} > 12d_a$		$\phi_{sat,pi}$	—	0.45 ⁷							
Additional Factor for Water-Saturated Concrete – $h_{ef} > 12d_a$		$K_{sat,pi}$ ⁶	—	0.48							

- The information presented in this table is to be used in conjunction with the design criteria of ACI 318-19, ACI 318-14 and ACI 318-11.
- Temperature Range: Maximum short-term temperature = 150°F, Maximum long-term temperature = 110°F.
- Short-term concrete temperatures are those that occur over short intervals (diurnal cycling).
- Long-term temperatures are roughly constant over significant periods of time.
- For anchors that only resist wind or seismic loads, bond strengths may be increased by 72%.
- In water-saturated concrete, multiply $\tau_{k,uncr}$ and $\tau_{k,cr}$ by K_{sat} .
- The tabulated value of ϕ applies when the load combinations from the IBC or ACI 318 are used and the requirements of ACI 318-19 17.5.3, ACI 318-14 17.3.3 or ACI 318-11 D.4.3, as applicable, are met. If the load combinations of ACI 318-11 Appendix C are used, refer to ACI 318-11 D.4.4 to determine the appropriate value of ϕ .
- The values of f_c used for calculation purposes must not exceed 8,000 psi (55.1 MPa) for uncracked concrete. The value of f_c used for calculation purposes must not exceed 2,500 psi (17.2 MPa) for tension resistance in cracked concrete.
- For lightweight concrete, the modification factor for bond strength shall be as given in ACI 318-19 17.2.4, ACI 318-14 17.2.6 or ACI 318-11 D.3.6, as applicable, where applicable.

*See p. 14 for an explanation of the load table icons.

ET-3G™ Design Information — Concrete

ET-3G Shear Strength Design Data for Threaded Rod¹

Characteristic		Symbol	Units	Nominal Anchor Diameter (in.)							
				3/8	1/2	5/8	3/4	7/8	1	1 1/4	
Steel Strength in Shear											
Threaded Rod	Minimum Shear Stress Area	A_{se}	in. ²	0.078	0.142	0.226	0.334	0.462	0.606	0.969	
	Shear Resistance of Steel — ASTM F1554, Grade 36	V_{sa}	lb.	2,260	4,940	7,865	11,625	16,080	21,090	33,720	
	Shear Resistance of Steel — ASTM A193, Grade B7			4,875	10,650	16,950	25,050	34,650	45,450	72,675	
	Shear Resistance of Steel — Type 410 Stainless (ASTM A193, Grade B6)			4,290	9,370	14,910	22,040	30,490	40,000	63,955	
	Shear Resistance of Steel — Types 304 and 316 Stainless (ASTM A193, Grade B8 & B8M)				2,225	4,855	7,730	11,420	15,800	20,725	33,140
	Reduction for Seismic Shear — ASTM F1554, Grade 36	$\alpha_{V,seis}^3$	—	0.87	0.78	0.68				0.65	
	Reduction for Seismic Shear — ASTM A193, Grade B7			0.87	0.78	0.68				0.65	
	Reduction for Seismic Shear — Stainless (ASTM A193, Grade B6)			0.69	0.82	0.75		0.83		0.72	
	Reduction for Seismic Shear — Stainless (ASTM A193, Grade B8 & B8M)			0.69	0.82	0.75		0.83		0.72	
	Strength Reduction Factor — Steel Failure	ϕ	—	0.65 ²							
Concrete Breakout Strength in Shear											
Outside Diameter of Anchor	d_o	in.	0.375	0.5	0.625	0.75	0.875	1	1.25		
Load Bearing Length of Anchor in Shear	ℓ_e	in.	Min. of h_{ef} and 8 times anchor diameter								
Strength Reduction Factor — Breakout Failure	ϕ	—	0.70 ²								
Concrete Pryout Strength in Shear											
Coefficient for Pryout Strength	k_{cp}	—	1.0 for $h_{ef} < 2.50"$; 2.0 for $h_{ef} \geq 2.50"$								
Strength Reduction Factor — Pryout Failure	ϕ	—	0.70 ²								

- The information presented in this table is to be used in conjunction with the design criteria of ACI 318-19, ACI 318-14 and ACI 318-11.
- The tabulated value of ϕ applies when the load combinations from the IBC or ACI 318 are used and the requirements of ACI 318-19 17.5.3, ACI 318-14 17.3.3 or ACI 318-11 D.4.3, as applicable, are met. If the load combinations of ACI 318-11 Appendix C are used, refer to ACI 318-11 D.4.4 to determine the appropriate value of ϕ .
- The values of V_{sa} are applicable for both cracked concrete and uncracked concrete. For anchors installed in regions assigned to Seismic Design Category C, D, E or F, V_{sa} must be multiplied by $\alpha_{V,seis}$ for the corresponding anchor steel type.

*See p. 14 for an explanation of the load table icons.

ET-3G™ Design Information — Concrete



ET-3G Shear Strength Design Data for Rebar¹

Characteristic	Symbol	Units	Rebar Size							
			#3	#4	#5	#6	#7	#8	#10	
Steel Strength in Shear										
Rebar	Minimum Shear Stress Area	A_{se}	in ²	0.11	0.2	0.31	0.44	0.6	0.79	1.23
	Shear Resistance of Steel — Rebar (ASTM A615 Grade 60)	V_{sa}	lb.	4,950	10,800	16,740	23,760	32,400	42,660	66,420
	Reduction for Seismic Shear — Rebar (ASTM A615 Grade 60)	$\alpha_{V,seis}$ ³	—	0.85	0.88	0.84		0.77		0.59
	Strength Reduction Factor — Steel Failure	ϕ	—	0.60 ²						
Concrete Breakout Strength in Shear										
Outside Diameter of Anchor		d_o	in.	0.375	0.5	0.625	0.75	0.875	1	1.25
Load-Bearing Length of Anchor in Shear		ℓ_e	in.	Min. of h_{ef} and 8 times anchor diameter						
Strength Reduction Factor — Breakout Failure		ϕ	—	0.70 ²						
Concrete Pryout Strength in Shear										
Coefficient for Pryout Strength		k_{cp}	—	1.0 for $h_{ef} < 2.50"$; 2.0 for $h_{ef} \geq 2.50"$						
Strength Reduction Factor — Pryout Failure		ϕ	—	0.70 ²						

- The information presented in this table is to be used in conjunction with the design criteria of ACI 318-19, ACI 318-14 and ACI 318-11.
- The tabulated value of ϕ applies when the load combinations from the IBC or ACI 318 are used and the requirements of ACI 318-19 17.5.3, ACI 318-14 17.3.3 or ACI 318-11 D.4.3, as applicable, are met. If the load combinations of ACI 318-11 Appendix C are used, refer to ACI 318-11 D.4.4 to determine the appropriate value of ϕ .
- The values of V_{sa} are applicable for both cracked concrete and uncracked concrete. For anchors installed in regions assigned to Seismic Design Category C, D, E or F, V_{sa} must be multiplied by $\alpha_{V,seis}$.

For additional load tables, visit strongtie.com/et3g.



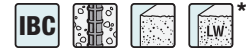
Adhesive Cartridge Estimator

Simpson Strong-Tie® Adhesive Cartridge Estimator software will help you easily estimate how much adhesive you will need for your project, including threaded rod and rebar doweling, and crack injection.

^{*}See p. 14 for an explanation of the load table icons.

ET-3G™ Design Information — Concrete

ET-3G Development Length for Rebar Dowels



Rebar Size	Drill Bit Diameter (in.)	Clear Cover in. (mm)	Development Length, in. (mm)				
			$f'_c = 2,500$ psi (17.2 MPa) Concrete	$f'_c = 3,000$ psi (20.7 MPa) Concrete	$f'_c = 4,000$ psi (27.6 MPa) Concrete	$f'_c = 6,000$ psi (41.4 MPa) Concrete	$f'_c = 8,000$ psi (55.2 MPa) Concrete
#3 (9.5)	1/2	1 1/2 (38)	12 (305)	12 (305)	12 (305)	12 (305)	12 (305)
#4 (12.7)	5/8	1 1/2 (38)	14.4 (366)	14 (356)	12 (305)	12 (305)	12 (305)
#5 (15.9)	3/4	1 1/2 (38)	18 (457)	17 (432)	14.2 (361)	12 (305)	12 (305)
#6 (19.1)	7/8	1 1/2 (38)	21.6 (549)	20 (508)	17.1 (434)	14 (356)	13 (330)
#7 (22.2)	1	3 (76)	31.5 (800)	29 (737)	25 (635)	21 (533)	18 (457)
#8 (25.4)	1 1/8	3 (76)	36 (914)	33 (838)	28.5 (724)	24 (610)	21 (533)
#9 (28.7)	1 3/8	3 (76)	40.5 (1,029)	38 (965)	32 (813)	27 (686)	23 (584)
#10 (32.3)	1 3/8	3 (76)	45 (1,143)	42 (1,067)	35.6 (904)	30 (762)	26 (660)
#11 (35.8)	1 3/4	3 (76)	51 (1,295)	47 (1,194)	41 (1,041)	33 (838)	29 (737)

1. Tabulated development lengths are for static, wind and seismic load cases in Seismic Design Category A and B. Development lengths in SDC C through F must comply with ACI 318-19 and ACI 318-14 Chapter 18 or ACI 318-11 Chapter 12, as applicable. The value of f'_c used to calculate development lengths shall not exceed 2,500 psi in SDC C through F.
2. Rebar is assumed to be ASTM A615 Grade 60 or A706 ($f_y = 60,000$ psi). For rebar with a higher yield strength, multiply tabulated values by $f_y / 60,000$ psi.
3. Concrete is assumed to be normal-weight concrete. For lightweight concrete, multiply tabulated values by 1.33.
4. Tabulated values assume bottom cover of less than 12" cast below rebars ($\Psi_1 = 1.0$).
5. Uncoated rebar must be used.
6. The value of K_{tr} is assumed to be 0. Refer to ACI 318-19 Section 25.4.2.4, ACI 318-14 Section 25.4.2.3 or ACI 318-11 Section 12.2.3.

Rebar Development Length Calculator

Rebar Development Length Calculator is a web application that supports the design of post-installed rebar in concrete applications by calculating the necessary tension and compression development lengths required in accordance with ACI 318-19 / ACI 318-14.

Splice Information

Lap Splice Application:

Splice Class:

Concrete Information

Concrete Type:

Concrete Compressive Strength, f'_c (psi):

Rebar Information

Rebar Coating:

Rebar Spacing (Center-to-Center), S: in

Minimum Clear Cover, C_{min} : in

Seismic Design Category

Seismic Design Category:

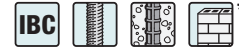
Lap Splice Application

Lap Splice Application

*See p. 14 for an explanation of the load table icons.

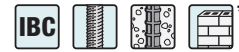
ET-3G™ Design Information — Masonry

ET-3G Epoxy Anchor Installation Information — Fully Grouted CMU Construction — Face of Wall



Installation Information	Symbol	Units	Nominal Rod Diameter / Rebar Size			
			3/8" / #3	1/2" / #4	5/8" / #5	3/4" / #6
Drill Bit Diameter — Threaded Rod	d_o	in.	7/16	9/16	1 1/16	7/8
Drill Bit Diameter — Rebar	d_o	in.	1/2	5/8	3/4	7/8
Minimum Embedment Depth	$h_{ef,min}$	in.	3	3	3	3

ET-3G Epoxy Anchor Installation Information — Fully Grouted CMU Construction — Top of Wall



Installation Information	Symbol	Units	Nominal Rod Diameter / Rebar Size		
			1/2" / #4	5/8" / #5	7/8"
Drill Bit Diameter — Threaded Rod	d_o	in.	9/16	1 1/16	1
Drill Bit Diameter — Rebar	d_o	in.	5/8	3/4	—
Minimum Embedment Depth	$h_{ef,min}$	in.	3	3	3

ET-3G Epoxy Anchor Installation Information — UngROUTED CMU Construction



Installation Information	Symbol	Units	Nominal Rod Diameter		
			3/8"	1/2"	5/8"
Drill Bit Diameter	d_o	in.	9/16	3/4	7/8
Embedment Depth	$h_{ef,min}$	in.	3 1/2	3 1/2	3 1/2

Please see the ET-3G product page at strongtie.com and ICC-ES ESR Report for load data.

*See p. 14 for an explanation of the load table icons.