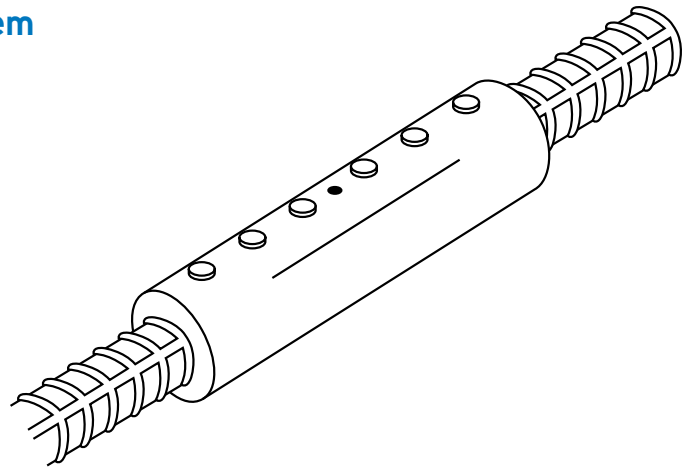


Dayton Superior Bar Lock® Coupler System

ICC Evaluation Report No. 2495

The Dayton Superior Bar Lock Coupler System provides a simple, quick, cost effective method for splicing rebar in tension and/or compression applications. Bar Lock Couplers may be used with plain or epoxy coated rebars in sizes #4 through #18.

Bar Lock Couplers utilize lock-shear bolts and special grip rails to mechanically splice the rebar. The serrated grip rails cradle the rebar and are embedded in the rebar as the lock-shear bolts are tightened. The heads of the lock-shear bolts are designed to shear off at a prescribed torque in order to accomplish proper installation.



Typical Bar Lock Coupler System Splice
U.S. Patent No. 4,666,326 and 5,046,878

System Advantages:

- Quick and easy to install – saves time and money.
- Eliminates bar threading and/or special bar end treatment.
- No special installation equipment required.
- High strength in tension, compression and seismic applications.
- Available in standard, transition and weldable end anchor versions in #4 through #18 sizes.
- Ideal for new construction and rehab projects.

System Compliance

Bar Lock Couplers are test-certified to exceed the requirements of, are pre-qualified and approved, or recognized by the following building approval agencies:

- State Departments of Transportation
- International Code Council (ICC)
- International Building Code (IBC)
- Southern Building Code Congress International (SBCCI)
- American Concrete Institute (ACI)
- Concrete Reinforcing Steel Institute (CRSI)
- City of Los Angeles Department of Building and Safety

Bar Lock Coupler source material is fabricated under ISO9000 quality standards. Bar Lock couplers are tested by independent, certified testing laboratories in four modes of testing: tension, compression, fatigue and cyclic. All tests are done to the requirements of ICC and/or Caltrans requirements utilizing ASTM A615 and A706 grade 60, 75, and 80.

Typical Specification

Specific:

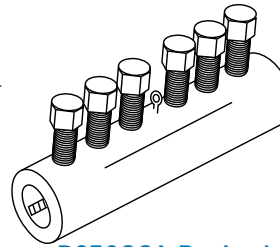
- Mechanical connections shall be Bar Lock® lockshear bolt couplers as manufactured by Dayton Superior Corporation.

Generic:

- The mechanical connection shall meet building code requirements of developing in tension and compression as required by _____ (insert name here). The mechanical connection shall be the positive butt splices utilizing lock shear bolts and internal serrated grip rails within the coupling sleeve manufactured from high quality steel. All couplers shall be installed per the manufacturer's approved procedures.

D250SCA Bar Lock® S/CA-Series Couplers

The D250SCA Bar Lock S/CA-Series Couplers are designed for use in most tension and compression applications. They are available in rebar sizes #4 through #18 and exceed Type 1 performance. S/CA couplers are an approved Caltrans "Service" splice and are recognized by ICC, ACI and most State departments of Transportation. S/CA couplers are available in transition sizes, weldable half couplers.



D250SCA Bar Lock S/CA-Series Coupler

To Order:
Specify: (1) quantity, (2) name, (3) coupler designation.

Example:
300, D250SCA Bar Lock® S/CA-Series Couplers, 8S/CA.

Product Code		Coupler Designation	Bar Size Designation			Barrel Stamp Identification	Product Specifications			Bolt Specifications			Meets or Exceeds		
Black	Epoxy		US	Metric (mm)	CN (M)		Outside Diameter (in.)	Length (in.)	Weight (lbs.)	Bolt Qty.	Head Size (in.)	Nominal Shear Torque*	Min % Fy**	CAL TRANS Service	ICC Type 1
400200	400210	3 S/CA	#3	[10]	—	3S...CA	1.3	3.9	1.24	4	0.5	40	135	YES	YES
400200	400210	4 S/CA	#4	[13]	[10]	4S...CA	1.3	3.9	1.24	4	0.5	40	135	YES	YES
400201	400211	5 S/CA	#5	[16]	[15]	5S...CA	1.7	4.5	2.11	4	0.5	80	135	YES	YES
400202	400212	6 S/CA	#6	[19]	[20]	6S...CA	1.9	6.3	3.57	6	0.5	80	135	YES	YES
400203	400213	7 S/CA	#7	[22]	—	7S...CA	1.9	8.0	4.30	8	0.5	80	135	YES	YES
400204	400214	8 S/CA	#8	[25]	[25]	8S...CA	2.4	10.2	6.10	8	0.625	180	135	YES	YES
400205	400215	9 S/CA	#9	[29]	[30]	9S...CA	2.9	9.0	11.88	6	0.75	350	135	YES	YES
400206	400216	10 S/CA	#10	[32]	—	10S...CA	2.9	11.5	15.17	8	0.75	415	135	YES	YES
400207	400217	11 S/CA	#11	[36]	[35]	11S...CA	3.1	14.0	20.50	10	0.75	415	135	YES	YES
400208	400218	14 S/CA	#14	[43]	[45]	14S...CA	3.5	16.5	27.57	12	0.75	475	135	YES	YES
400209	400219	18 S/CA	#18	[57]	[55]	18S...CA	4.3	27.2	62.00	20	0.75	475	135	YES	YES

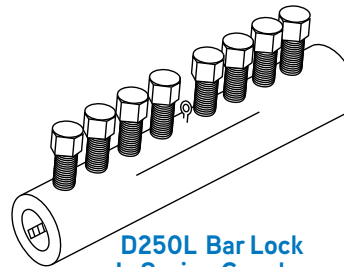
Note in place of the "...", each Bar Lock Coupler is marked with a tracking code used for full manufacturing traceability.

* Foot pounds.

** When used in conjunction with epoxy-coated Grade 60 rebar, 125% Fy strength is developed.

D250L Bar Lock® L-Series Coupler

The D250L Bar Lock L-Series Coupler is similar to the Standard Coupler but is designed for higher loads, such as extreme tension/compression application and/or seismic loading conditions. L-Series couplers are available in rebar sizes #4 through #18 and exceed Type 2 performance. L-Series couplers are approved for use by most state DOTs, are recognized as an ICC Type 2 seismic splice, and meet ACI specifications.



D250L Bar Lock L-Series Coupler

To Order:
Specify: (1) quantity, (2) name, (3) coupler designation, (4) if epoxy coating is required.

Example:
100, D250L Bar Lock® L-Series Couplers, 8L, epoxy coated.

Product Code		Coupler Designation	Bar Size Designation			Barrel Stamp Identification	Product Specifications			Bolt Specifications			Meets or Exceeds			
Black	Epoxy		US	Metric (mm)	CN (M)		Outside Diameter (in.)	Length (in.)	Weight (lbs.)	Bolt Qty.	Head Size (in.)	Nominal Shear Torque*	Min % Fy**	CAL TRANS Service	ICC Type 1	ICC Type 2
400327	144988	3 L	#3	[10]	—	3L...	1.3	4.0	1.67	4	0.5	40	160	YES	YES	YES
400226	400235	4 L	#4	[13]	[10]	4L...	1.3	5.5	1.67	6	0.5	40	160	YES	YES	YES
400227	400236	5 L	#5	[16]	[15]	5L...	1.7	6.3	2.90	6	0.5	80	160	YES	YES	YES
400228	400237	6 L	#6	[19]	[20]	6L...	1.9	8.0	4.44	8	0.5	80	160	YES	YES	YES
400229	400238	7 L	#7	[22]	—	7L...	1.9	9.8	5.10	10	0.5	80	160	YES	YES	YES
400230	400239	8 L	#8	[25]	[25]	8L...	2.4	12.3	8.94	10	0.625	180	160	YES	YES	YES
400231	400240	9 L	#9	[29]	[30]	9L...	2.9	11.5	15.07	8	0.75	350	160	YES	YES	YES
400232	400241	10 L	#10	[32]	—	10L...	2.9	14.0	18.50	10	0.75	415	160	YES	YES	YES
400233	400242	11 L	#11	[36]	[35]	11L...	3.1	16.5	23.75	12	0.75	415	160	YES	YES	YES
145831	145832	14 L	#14	[43]	[45]	14L...	3.5	26.6	39.00	20	0.75	475	160	YES	YES	YES
142996	142996	18 L	#18	[57]	[55]	18L...	4.3	32.2	97.80	24	0.75	475	160	YES	YES	YES

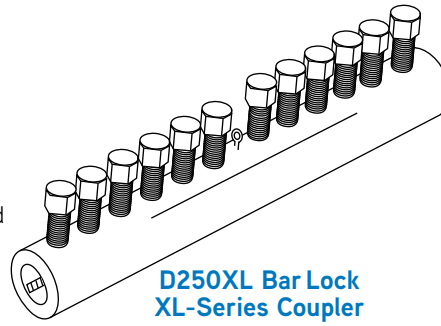
Note in place of the "...", each Bar Lock Coupler is marked with a tracking code used for full manufacturing traceability.

* Foot pounds.

** When used in conjunction with epoxy-coated Grade 60 rebar, 135% Fy strength is developed.

D250XL Bar Lock® XL-Series Coupler

The D250XL Bar Lock XL-Series Coupler is similar to the L-Series Coupler but is designed for higher loads and higher strength rebar. XL-Series couplers are available in rebar sizes #4 through #18 and exceed Type 2 performance. XL-Series Couplers are approved for use by most DOTs, are recognized as an ICC Type 2 seismic splice, and meet ACI specifications.



D250XL Bar Lock XL-Series Coupler

To Order:

Specify: (1) quantity, (2) name, (3) coupler designation, (4) if epoxy coating is required.

Example:

100, D250XL Bar Lock® XL-Series Couplers, 8XL, epoxy coated.

Product Code			Coupler Designation	Bar Size Designation			Barrel Stamp Identification	Product Specifications			Bolt Specifications			Meets or Exceeds			
Black	Epoxy	Galvanized		US	Metric (mm)	CN (M)		Outside Diameter (in.)	Length (in.)	Weight (lbs.)	Bolt Qty.	Head Size (in.)	Nominal Shear Torque*	Min % Fu**	CAL TRANS Service	ICC Type 1	ICC Type 2
145314	145324	145147	4 XL	#4	[13]	[10]	4XL....	1.3	10.2	3.10	12	0.5	40	100	YES	YES	YES
145315	145325	145148	5 XL	#5	[16]	[15]	5XL....	1.7	11.5	5.29	12	0.5	80	100	YES	YES	YES
145316	145326	145149	6 XL	#6	[19]	[20]	6XL....	1.9	13.2	7.33	14	0.5	80	100	YES	YES	YES
145317	145327	145150	7 XL	#7	[22]	—	7XL....	1.9	15.0	7.81	16	0.5	80	100	YES	YES	YES
145318	145328	145151	8 XL	#8	[25]	[25]	8XL....	2.4	18.7	13.59	16	0.625	180	100	YES	YES	YES
145319	145329	145152	9 XL	#9	[29]	[30]	9XL....	2.9	19.1	25.03	14	0.75	350	100	YES	YES	YES
145320	145330	145153	10 XL	#10	[32]	—	10XL....	2.9	21.6	28.54	16	0.75	415	100	YES	YES	YES
145321	145331	145154	11 XL	#11	[36]	[35]	11XL....	3.1	24.1	34.69	18	0.75	415	100	YES	YES	YES
145322	145332	145155	14 XL	#14	[43]	[45]	14XL....	3.5	29.1	48.14	22	0.75	475	100	YES	YES	YES
145323	145333	145156	18 XL	#18	[57]	[55]	18XL....	4.3	44.8	136.06	34	0.75	475	100	YES	YES	YES

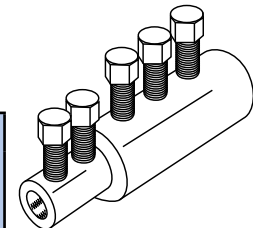
Note in place of the "...", each Bar Lock Coupler is marked with a tracking code used for full manufacturing traceability.

* Foot pounds.

** When used in conjunction with epoxy-coated, galvanized Grade 75/80 rebar, 135% Fy strength is developed.

D220 Bar Lock® Transition Couplers

Bar Lock Transition Couplers are used to splice two rebar of different diameters. Transition Couplers are available in S/CA Series, L-Series, and XL-Series. Transition Couplers can be made any size combination.



D220 Bar Lock Transition Coupler

Bar Size Designation			Side A (small side)				Side B (large side)				Total Length
US	Metric (mm)	CN (M)	Barrel Size	Length (in.)	Bolt Qty.	Head Size (In.)	Barrel Size	Length (in.)	Bolt Qty.	Head Size (In.)	
#4	[13]	[10]	#4	2.22	2	0.5	#5	2.53	8	0.5	4.75
#5	[16]	[15]	#6	3.15	2	0.5	#6	3.15	3	0.5	6.30
#6	[19]	[20]	#7	5.08	4	0.5	#8	5.08	4	0.625	10.16
#7	[22]	—	#8	5.33	4	0.625	#10	6.00	4	0.75	11.33
#8	[25]	[25]	#9	5.75	3	0.75	#10	5.75	4	0.75	11.50
#9	[29]	[30]	#11	7.01	3	0.75	#11	7.01	5	0.75	14.02
#10	[32]	—	#10	6.00	4	0.75	#14	8.52	6	0.75	14.52
#11	[36]	[35]	#11	7.26	5	0.75	#14	8.52	6	0.75	15.75
#14	[43]	[45]	#14	8.52	6	0.75	#18	13.83	10	0.75	22.35

This table lists commonly ordered transition sizes. Other sizes available. Transition Couplers are available in S/CA-Series (shown above) sizes #4-#18, L-Series in sizes #4-#18, and XL-Series in sizes #4-#18.

To Order:

Specify: (1) quantity, (2) name, (3) transition size, (4) if epoxy coating is required.

Example:

100, D250 Bar Lock® Series Transition Couplers, #7-#8, epoxy coated.

Lockshear Bolt System

D251L Bar Lock® L-Series End Anchor

DESCRIPTION

The D251L Bar Lock End Anchor is a rebar end anchor used to provide anchorage. It consists of a thick walled tube, specially designed lock shear bolts, serrated grip rails, and a welded, headed disc. The D251L is made from USA melted and rolled steel.

APPLICATION

The D251L Bar Lock End Anchor is used to provide embedment anchorage.

PRODUCT SPECIFICATION

- Rebar sizes #4 (13mm) through #18 (57mm)
- Available in plain, epoxy coated, or galvanized finish
- Performs to Class A standards with Grade 60 rebar

FEATURES

- Quick and easy installation
- No bar end preparation
- Installation at the job site
- Gross bearing area of 5x diameter of rebar

BENEFITS

- Saves time and money
- No fabrication required
- One product for all applications

HOW TO SPECIFY

Specific:

Mechanical connections shall be Bar Lock® Rebar Splices as manufactured by Dayton Superior Corp.

Generic:

The mechanical connection shall meet building code requirements of developing in tension and compression as required by _____ (insert name here). The mechanical connection shall be made from lock shear bolt couplers with serrated gripping rails manufactured from high quality steel. All couplers shall be installed per the manufacturer's approved procedures.

TECHNICAL DATA

APPROVALS / COMPLIANCE

- ACI 318-II Type 2 (ASTM Gr.60) and ICC AC-133
- Army Corps of Engineers CW 03210
- State Departments of Transportation
- AASHTO and International Building Code (IBC)

Size	Outside Dia. (barrel) in.	Outside Dia. (anchor) in.	Length (in.)	Bolt Qty.
#4 - 13MM	1.315	1.750	3.585	3
#5 - 16MM	1.661	2.000	4.025	3
#6 - 19MM	1.902	2.375	4.954	4
#7 - 22MM	1.900	2.875	5.882	5
#8 - 25MM	2.244	3.250	7.392	5
#9 - 29MM	2.898	3.625	7.188	4
#10 - 32MM	2.898	4.050	8.510	5
#11 - 36MM	3.118	4.500	9.830	6
#14 - 43MM	3.500	5.375	11.528	7
#18 - 57MM	4.290	7.250	17.875	12



To Order:

Specify: (1) quantity, (2) name, (3) bar size, (4) finish.

Example:

500, D251L Bar Lock® End Anchors, #18, Galvanized.

INSTALLATION

1. Insert the end of the rebar halfway into the coupler until it bottoms against face of anchor.
2. Holding the rebar in place, tighten all the bolts until they are hand tight against the rebar.
3. In a random, alternating pattern, tighten all bolts to approximately 50%.
4. In a random, alternating pattern, tighten all bolts to approximately 75%.
5. In a random, alternating pattern, tighten all bolts until all the heads of the bolts shear off.

Note:

- A. Prior to bolt tightening, the serrated rails MUST remain aligned in the same position as they were manufactured. If they are damaged or knocked out of alignment while positioning, installation MUST cease and a new coupler used.
- B. Bolt tightening MUST be done in a random alternating pattern similar to tightening the lug nuts on an automobile wheel.
- C. A high-quality, 1" - pneumatic drive, impact wrench with at least 100 psig air flow and 185 CFM of delivered air through a no less than 0.75" hose MUST be used for installation.

RELATED PRODUCTS

- D250SCA Bar Lock® Couplers
- D250L Bar Lock® Couplers

ORDERING INFORMATION

BLACK (MADE IN USA)

Product Code	Description	Weight
400440	#4 - 13MM	2 LB
400441	#5 - 16MM	2.2 LB
400442	#6 - 19MM	3.4 LB
400443	#7 - 22MM	4.9 LB
400444	#8 - 25MM	7.4 LB
400445	#9 - 29MM	10.5 LB
400446	#10 - 32MM	13.5 LB
400447	#11 - 36MM	16.75 LB
400448	#14 - 43MM	27 LB
400449	#18 - 57MM	57 LB

D252L Bar Lock® L-Series End Anchor

DESCRIPTION

The D252L Bar Lock End Anchor is a rebar end anchor used to provide anchorage. It consists of a thick walled tube, specially designed lock shear bolts, serrated grip rails, and a welded, headed disc. The D252L is made from USA melted and rolled steel.

APPLICATION

The D252L Bar Lock End Anchor is used to provide embedment anchorage.

PRODUCT SPECIFICATION

- Rebar sizes #4 (13mm) through #18 (57mm)
- Available in plain, epoxy coated, or galvanized finish
- Performs to Class A standards with Grade 60 rebar

FEATURES

- Quick and easy installation
- No bar end preparation
- Installation at the job site
- Gross bearing area of 10x of bar diameter with disk installed towards rebar
- Gross bearing area of 5x diameter of rebar tube with disk installed away from rebar

BENEFITS

- Anchor Disc through-hole permits offset installation in high congestion application
- Saves time and money
- No fabrication required
- One product for all applications

HOW TO SPECIFY

Specific:

Mechanical connections shall be Bar Lock® Rebar Splices as manufactured by Dayton Superior Corp.

Generic:

The mechanical connection shall meet building code requirements of developing in tension and compression as required by _____ (insert name here). The mechanical connection shall be made from lock shear bolt couplers with serrated gripping rails manufactured from high quality steel. All couplers shall be installed per the manufacturer's approved procedures.

TECHNICAL DATA

APPROVALS / COMPLIANCE

- ACI 318-II Type 2 (ASTM Gr.60) and ICC AC-133
- Army Corps of Engineers CW 03210
- State Departments of Transportation
- AASHTO and International Building Code (IBC)

Size	Outside Dia. (barrel) in.	Outside Dia. (anchor) in.	Length (in.)	Bolt Qty.
#4 - 13MM	1.315	3.000	4.318	3
#5 - 16MM	1.661	3.750	4.838	3
#6 - 19MM	1.902	4.250	5.829	4
#7 - 22MM	1.900	4.250	6.882	5
#8 - 25MM	2.244	5.250	8.205	5
#9 - 29MM	2.898	6.500	7.936	4
#10 - 32MM	2.898	6.500	9.383	5
#11 - 36MM	3.118	7.000	10.768	6
#14 - 43MM	3.500	8.000	12.341	7
#18 - 57MM	4.290	10.000	19.479	12



To Order:

Specify: (1) quantity, (2) name, (3) bar size, (4) finish.

Example:

500, D252L Bar Lock® End Anchors, #18, Galvanized.

INSTALLATION

1. Insert the end of the rebar through the coupler until it is flush with or protruding past the end of the anchor disk.
2. Holding the rebar in place, tighten all the bolts until they are hand tight against the rebar.
3. In a random, alternating pattern, tighten all bolts to approximately 50%.
4. In a random, alternating pattern, tighten all bolts to approximately 75%.
5. In a random, alternating pattern, tighten all bolts until all the heads of the bolts shear off.

Note:

- A. Prior to bolt tightening, the serrated rails MUST remain aligned in the same position as they were manufactured. If they are damaged or knocked out of alignment while positioning, installation MUST cease and a new coupler used.
- B. Bolt tightening MUST be done in a random alternating pattern similar to tightening the lug nuts on an automobile wheel.
- C. A high-quality, 1" - pneumatic drive, impact wrench with at least 100 psig air flow and 185 CFM of delivered air through a no less than 0.75" hose MUST be used for installation.

RELATED PRODUCTS

- D250SCA Bar Lock® Couplers
- D250L Bar Lock® Couplers

ORDERING INFORMATION

BLACK (MADE IN USA)

Product Code	Description	Weight
145790	#4 - 13MM	2.068 LB
145791	#5 - 16MM	3.755 LB
145792	#6 - 19MM	5.65 LB
145793	#7 - 22MM	6.714 LB
145794	#8 - 25MM	11.636 LB
145795	#9 - 29MM	19.091 LB
145796	#10 - 32MM	22.125 LB
145797	#11 - 36MM	27.927 LB
145798	#14 - 43MM	40.461 LB
145799	#18 - 57MM	86.451 LB

D630 Bar Lock® Compression Only Coupler

The Dayton Superior D630 Compression Coupler is an easy-to-install rebar coupler, perfect for applications requiring a compression-only connection. The D630 couplers are available in sizes #4 [13mm, 10M] through #18 [57mm, 55M] rebar sizes and develop the full ACI Type 2 requirement in compression.



To Order:

Specify: (1) quantity, (2) name, (3) bar size.

Example:

1000 D630 Compression Couplers, #18 [57mm, 55M].

FEATURES

- Available in #4 [13mm, 10M] - #18 [57mm, 55M] rebar
- Can be installed on first bar prior to second bar
- Uses readily available ratchets for assembly
- Wide inspection holes at bar end location
- Removable and reusable
- Small profile for tight applications
- Can be used at hoop and stirrup locations

APPROVALS / COMPLIANCE

- ACI 318, Type 2 (Compression Only)
- ICC AC133, Type 2 (Compression Only)
- State Departments of Transportation (Compression Only)
- AASHTO (Compression Only)
- International Building Codes (IBC), Type 2 (Compression Only)

INSTALLATION

1. Insert first bar into coupler until the end of the bar is visible through the inspection hole
2. Tighten nuts until hand-tight (20 ft-lbs)
3. Insert second bar into coupler until the end of the bar is visible through the inspection hole and in contact with the first bar
4. Tighten nuts until hand-tight (20 ft-lbs)

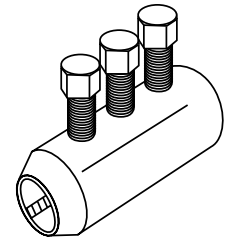
ORDERING INFORMATION

BLACK (MADE IN USA)

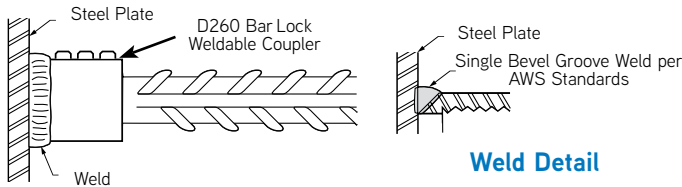
Product Code	Description	Weight
144842	#4 - 13MM	0.58 LB
144843	#5 - 16MM	0.66 LB
144844	#6 - 19MM	0.79 LB
144845	#7 - 22MM	0.87 LB
144846	#8 - 25MM	1.35 LB
144847	#9 - 29MM	1.68 LB
144848	#10 - 32MM	1.93 LB
144849	#11 - 36MM	1.99 LB
144850	#14 - 43MM	3.03 LB
144851	#18 - 57MM	3.86 LB

D260 Bar Lock® Weldable Couplers

Bar Lock Structural Steel Connectors (weldable half couplers) are designed to provide welded connections to structural steel members such as piles, weld plates, beams, columns, etc. Structural Steel Connectors are fabricated with a 45° chamfer to facilitate the welding operation. They are available in rebar sizes #4 through #18 in the S/CA-Series, L-Series, and XL-Series. Structural Steel Connectors are available in black and epoxy coated.



D260 Bar Lock Weldable Coupler



To Order:

Specify: (1) quantity, (2) name, (3) size.

Example:

300, D250 Bar Lock® Structural Steel Connectors, #7-SCA.

Bar Size Designation			S/CA-Series			S/CA-Series Bolt Specifications			L-Series			L-Series Bolt Specifications		
US	Metric (mm)	CN (M)	Structural Steel Connector Designation	Finished Length with Chamfer (in.)	Coupler Outside Diameter (in.)	Bolt Qty.	Head Size (in.)	Nominal Shear Torque*	Structural Steel Connector Designation	Finished Length with Chamfer (in.)	Coupler Outside Diameter (in.)	Bolt Qty.	Head Size (in.)	Nominal Shear Torque*
#4	[13]	[10]	#4-SCA	2.7	1.3	2	0.5	40	#4-L	3.5	1.3	3	0.5	40
#5	[16]	[15]	#5-SCA	3.0	1.4	2	0.5	80	#5-L	3.9	1.4	3	0.5	80
#6	[19]	[20]	#6-SCA	3.9	1.6	3	0.5	80	#6-L	4.75	1.6	4	0.5	80
#7	[22]	—	#7-SCA	4.75	1.6	4	0.5	80	#7-L	5.65	1.6	5	0.5	80
#8	[25]	[25]	#8-SCA	5.85	2.2	4	0.625	180	#8-L	6.85	2.2	5	0.625	180
#9	[29]	[30]	#9-SCA	5.25	2.6	3	0.75	350	#9-L	6.5	2.6	4	0.75	350
#10	[32]	—	#10-SCA	6.5	2.6	4	0.75	350	#10-L	7.75	2.6	5	0.75	415
#11	[36]	[35]	#11-SCA	7.75	3.1	5	0.75	415	#11-L	9.0	3.1	6	0.75	415
#14	[43]	[45]	#14-SCA	9.0	3.5	6	0.75	475	#14-L	10.3	3.5	7	0.75	475
#18	[57]	[55]	#18-SCA	14.3	4.3	10	0.75	475	#18-L	16.3	4.3	12	0.75	475

Ultimate strength depends on the strength of the field weld and the material to which the coupler is welded.

Bar Size Designation			XL-Series			XL-Series Bolt Specifications		
US	Metric (mm)	CN (M)	Structural Steel Connector Designation	Finished Length with Chamfer (in.)	Coupler Outside Diameter (in.)	Bolt Qty.	Head Size (in.)	Nominal Shear Torque*
#4	[13]	[10]	#4-XL	5.9	1.3	6	0.5	40
#5	[16]	[15]	#5-XL	6.5	1.4	6	0.5	80
#6	[19]	[20]	#6-XL	7.4	1.6	7	0.5	80
#7	[22]	—	#7-XL	8.25	1.6	8	0.5	80
#8	[25]	[25]	#8-XL	10.1	2.2	8	0.625	180
#9	[29]	[30]	#9-XL	10.3	2.6	7	0.75	350
#10	[32]	—	#10-XL	11.6	2.6	8	0.75	415
#11	[36]	[35]	#11-XL	12.8	3.1	9	0.75	415
#14	[43]	[45]	#14-XL	15.3	3.5	11	0.75	475
#18	[57]	[55]	#18-XL	23.2	4.3	17	0.75	475

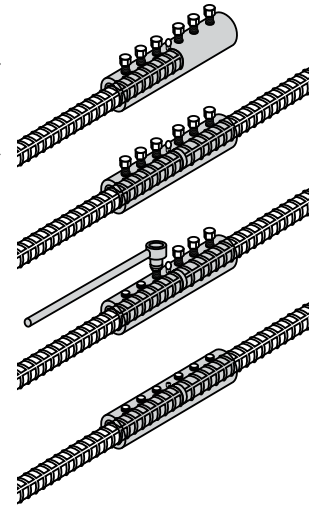
Ultimate strength depends on the strength of the field weld and the material to which the coupler is welded.

Typical Bar Lock® Coupler Installation

Bar Lock couplers are easy to install and normally do not require any special training or rebar preparation. A typical installation procedure is as follows:

A. Procedure:

1. Insert end of the first bar halfway into the coupler to the center pin. Hold bar in place and hand-tighten all bolts.
2. Insert end of the second bar halfway into the coupler to the center pin. Hold bar in place and hand-tighten all bolts.
3. In a random alternating pattern, tighten all bolts to approximately 50% of the specified bolt torque value.
4. In a random alternating pattern, tighten all bolts to approximately 75% of the specified bolt torque value.
5. Tighten all bolts in a random alternating pattern until all bolt heads shear off.



IMPORTANT NOTES:

- a. Prior to bolt tightening the serrated rails **MUST** remain aligned in the same position as they were manufactured. If damaged or knocked out of alignment while positioning, installation **MUST** cease and a new coupler used to replace damaged coupler.
- b. Bolt tightening **MUST** be done in a random alternating pattern similar to tightening the lug nuts on an automobile wheel (i.e., 2-4 then 1-3).

B. Installation Tools:

A high-quality 1"-drive pneumatic impact wrench is required for sizes #8 thru #18. The requirements for air flow is 100 psig of operating pressure and 185 cfm of delivered air to the impact wrench through a ¾" - 1" air hose. Sizes #4 thru #7 may be installed with smaller impact wrenches.

C. Answers to frequently asked questions:

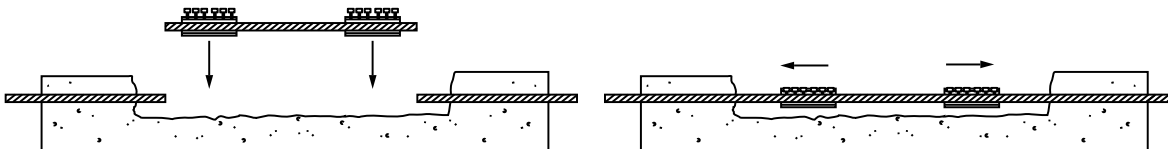
1. Approvals: Bar Lock couplers exceed the requirements of the Uniform Building Code and state DOTs and are recognized by ICC report #ESR-2495.
2. Center-pin: Bar Lock couplers are manufactured with a removable center pin for easy reference to the center of the coupler. As each bar is inserted into the coupler it will butt against the center pin providing the confirmation the the rebar is inserted the proper distance within the coupler. The bar ends might not actually butt against one another.
3. Serrated rails: The internal grip rails are held into place by a simple "positional weld" only. During bolt tightening it is common this position weld may break loose, but this will not affect performance.
4. Shear bolts: The shearing of the bolt-heads simply confirms adequate torque has been achieved.
5. Bar-ends: The rebar may be shear cut, flame cut or sawn and generally require no special bar-end preparation for use with BarLock couplers. Transportation: Assembled coupler samples must be restricted from rotation when transporting to a testing facility. It is recommended that samples be strapped to a skid lined with damping material like packing or egg crate foam.

D. Epoxy-Coated Rebar Applications

Bar Lock Couplers can be used in conjunction with epoxy-coated rebar. When used with epoxy-coated, Grade 60 rebar, Bar Lock L-Series couplers develop 135% Fy strength and Bar Lock S/CA-Series Couplers develop 125% Fy strength. To achieve the standard performance strengths of 160% Fy and 135% Fy, respectively, the epoxy must be completely removed from the rebar in the region where the coupler engages the rebar.

Laboratory test results

Bar Lock couplers are designed to exceed industry requirements for splicing 60-grade rebar of both A615 and A706 designation



Typical replacement of corroded or damaged rebar in existing concrete.

including the specification requirements of the Uniform Building Code (UBC), ACI, ICBO, Caltrans, the City of Los Angeles, and all other state departments of transportation. Bar Lock couplers are test-certified to qualify as:

S/CA-series: ACI/UBC/ICBO - Type 1 splice; Exceed 135% Fy

L-series: ACI/UBC/ICBO - Type 2 splice; Exceed 160% Fy