

Dowel Bar Splicer System*

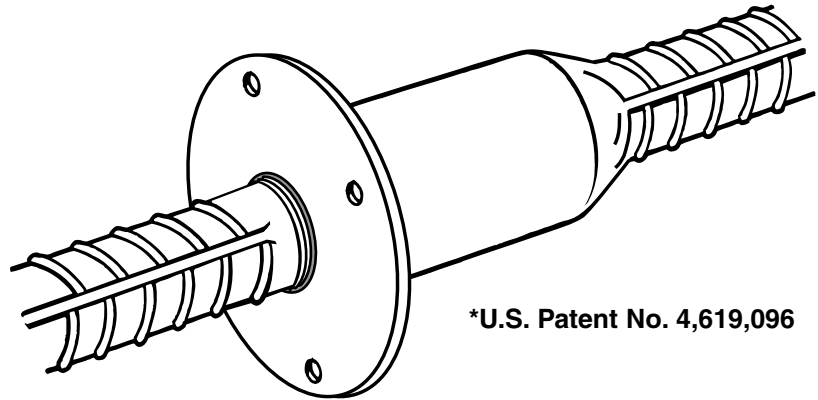
ICC Evaluation Report No. 4028

The Dayton Superior Dowel Bar Splicer System is a two-piece, standard mechanical splicing technique (splicing bars of equal size) that eliminates protruding dowels. Typical applications include splicing reinforcement bars in monolithic structures, rebar anchorages, future expansion, and dowel bar substitution at construction joints.

The components of the system, the Splicer and Dowel-In, are manufactured from standard grade 60 rebar material. Basic fabrication consists of forging and threading operations. No welding or machining is required and the threading operation does not reduce the nominal cross-sectional area of the bar. The completed splice (joined Splicer and Dowel-In) obtains ultimate bar strengths and meets or exceeds all existing code requirements including 160% f_y or 95% of bar actual tensile requirements as identified by ICC acceptance criteria AC 133.

System Advantages

The patented Dowel Bar Splicer System has been engineered, tested and proven to meet or exceed all field standards and design/engineering practices. The System is easy to use and readily identified as rebar material. The easy installation requires no special tools or machinery and simplifies the forming operations. There are no "extras," such as wedges, nuts, collars or couplers required and routine cutting, bending, etc., can be easily handled in the field, if required.



The Dayton Superior Dowel Bar Splicer System Advantages:

- Strong
- Safe
- Easy to Use
- Eliminates Protruding Dowels
- Improves Forming Costs
- Reduces Forming and Stripping Hassles
- Saves Forms By Eliminating Drilling Holes
- No Forming Required

System Compliance

The Dowel Bar Splicer System complies with the following standards/specifications:

- International Conference of Building Officials (ICC Report #4028).
- City of Los Angeles Research Report RR 24518.
- American Concrete Institute (ACI Standard 318).
- State Departments of Transportation.
- Corps of Engineers (Specification CW03210).

Typical Splicing Specification

The Dayton Superior Dowel Bar Splicer System, consisting of the Dowel Bar Splicer and Dowel-In, shall be used in splicing of rebar. The Dowel Bar Splicer shall be forged from ASTM A-615 grade 60 deformed rebar material, free of external welding and machining. It shall be furnished with an integral nailing flange and threaded with UNC or UN thread to a depth equal to the nominal thread diameter. The Dowel-In shall be fabricated from ASTM A-615 grade 60 deformed rebar material with thread corresponding to the Splicer. The completed splice shall meet 160% f_y exceeding tensile requirements of American Concrete Institute Specification 318, *Building Code Requirements for Reinforced Concrete* and the Corps of Engineers Specification CW03210, *Civil Works Construction Guide Specification for Steel Bars, Welded Steel Wire Fabric and Accessories for Concrete Reinforcement*.

Specific:

- Mechanical connections shall be Dowel Bar Splice System (DB/DI) parallel threaded 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 forged and parallel threaded type coupler manufactured from high quality steel. All couplers shall be installed per the manufacturer's approved procedures.

Recommended Dowel Bar Splicer and Dowel-In Sizes

Bar Size	Specified or Required Dowel Bar			Recommended Dowel Bar Splicer and Dowel-In						
	Grade 60 Rebar Loads (lbs.)			System Thread Size*	DB-SAE Bar Size	Dowel-In Bar Size	System Stress Area (min.)	Completed Splice (lbs.)		
	P _y	1.25 P _y	P _{ult}					P _y	1.25 P _y	Minimum P _{ult} Range = 95% F _u Actual or 160% F _y Specified**
#4 [#13]	12,000	15,000	18,000	5/8"-11	#4	#4	.20	12,000	15,000	19,200
#5 [#16]	18,600	23,250	27,900	3/4"-10	#5	#5	.31	18,600	23,250	29,760
#6 [#19]	26,400	33,000	39,600	7/8"-9	#6	#6	.44	26,400	33,000	42,400
#7 [#22]	36,000	45,000	54,000	1"-8	#7	#7	.60	36,000	45,000	57,600
#8 [#25]	47,400	59,250	71,100	1-1/8"-8	#8	#8	.79	47,400	59,250	75,840
#9 [#29]	60,000	75,000	90,000	1-1/4"-8	#9	#9	1.00	60,000	75,000	96,000
#10 [#32]	76,200	95,250	114,000	1-7/16"-8	#10	#10	1.27	76,200	95,250	121,920
#11 [#36]	93,600	117,000	140,400	1-9/16"-8	#11	#11	1.56	93,600	117,000	149,760

P_y=Minimum Yield Strength of bar.

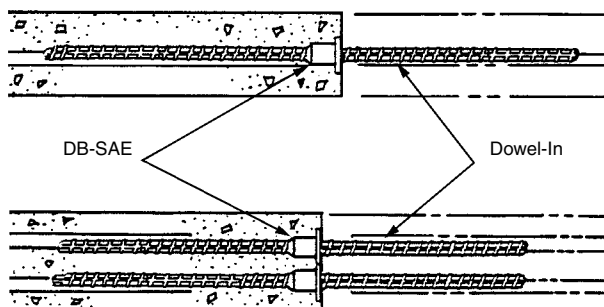
*5/8", 3/4", 7/8" and 1" sizes have UNC Threads. 1-1/8" and larger sizes are equipped with UN Threads.

**Loads shown based on 160% f_y specified.

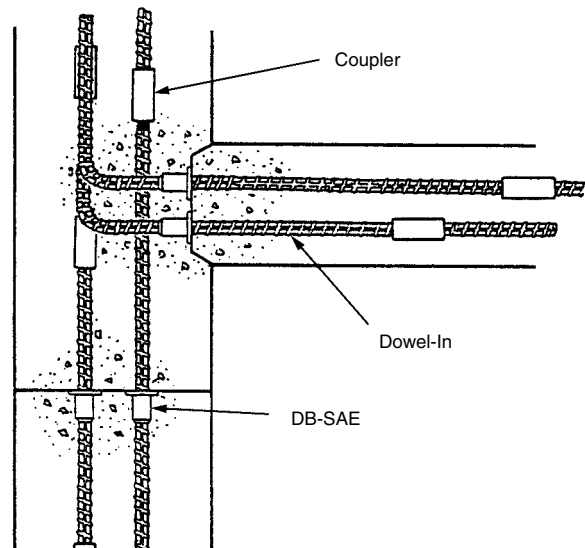
Required Development and Lap Lengths for Grade 60, Uncoated Bottom Reinforcement in Normal Weight Concrete

Application	f'c psi	#6 and Smaller Bars	#7 and Larger Bars
Clear spacing of bars being developed or spliced not less than d _b , clear cover not less than d _b , and beam stirrups or column ties throughout l _d not less than the code minimum or Clear spacing of bars being developed or spliced not less than 2d _b and clear cover not less than d _b	3,000	44d _b	55d _b
	4,000	38d _b	47d _b
	5,000	34d _b	42d _b
	6,000	31d _b	39d _b
	8,000	27d _b	34d _b
	10,000	24d _b	30d _b
Other cases	3,000	66d _b	82d _b
	4,000	57d _b	71d _b
	5,000	51d _b	64d _b
	6,000	46d _b	58d _b
	8,000	40d _b	50d _b
	10,000	36d _b	45d _b

Typical Threaded Splicing Applications



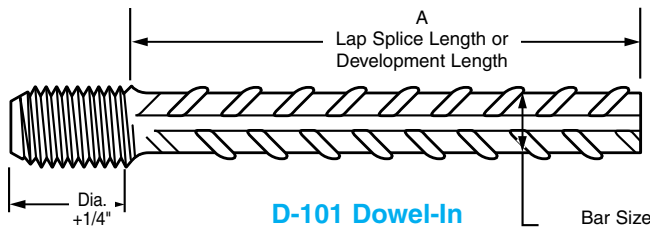
Typical Dowel Bar Splicer/Dowel-In Applications



Dowel Bar Splicer System

D-101 Dowel-in, D-102 90° Hooked Dowel-in, D-103 180° Hooked Dowel-in, D-104 Double-Ended Dowel-in

The Dayton Superior Dowel-In is available Straight (D-101), 90° and 180° Hooked (D-102 and D-103) and Double-Ended (D-104). Each is manufactured from grade 60 deformed rebar material and is available in rebar sizes #4 through #11 in plain or epoxy coated finish. The threaded end of the Dowel-In is enlarged by forging, before threading, to ensure that the cross-sectional area of the bar is not reduced by the threading operation. This design feature assures full ultimate strength of the rebar. Dowel-ins are configured to facilitate easy installation and can be easily assembled by hand. On larger projects, such as highway paving, a centrifugal chuck on an electric or air-powered drill motor can be employed to speed installation. See the D-49 Magna Jaw on Page 65.



To Order:

Specify: (1) quantity, (2) name, (3) bar size (should be equivalent to the rebar being substituted for on the structural drawings), (4) dimensions required (see below).

Example:

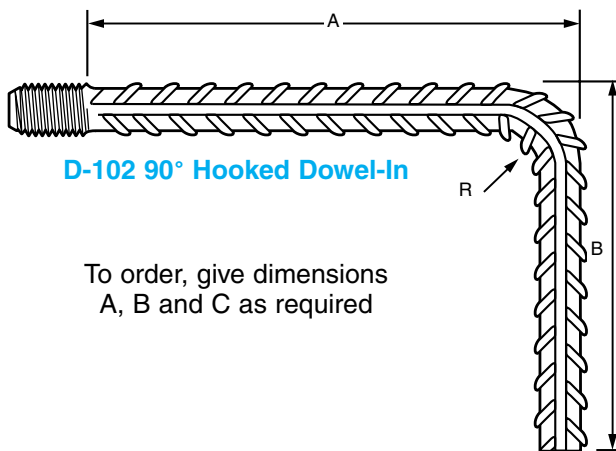
600, D-102 90° Hooked Dowel-Ins, #5 rebar, A=14", B=8"

Specified or Required Dowel Bar	Recommended Dowel Bar Splicer and Dowel-In									
	Grade 60 Rebar Loads (lbs.)			System Thread Size*	DB-SAE Bar Size	Dowel-In Bar Size	System Stress Area (min.)	Completed Splice (lbs.)		
Bar Size	P _y	1.25 P _y	P _{ult}					P _y	1.25 P _y	Minimum P _{ult} Stress Range = 95% F _u Actual or 160% F _y Specified**
#4 [#13]	12,000	15,000	18,000	5/8"-11	#4	#4	.20	12,000	15,000	19,200
#5 [#16]	18,600	23,250	27,900	3/4"-10	#5	#5	.31	18,600	23,250	29,760
#6 [#19]	26,400	33,000	39,600	7/8"-9	#6	#6	.44	26,400	33,000	42,400
#7 [#22]	36,000	45,000	54,000	1"-8	#7	#7	.60	36,000	45,000	57,600
#8 [#25]	47,400	59,250	71,100	1-1/8"-8	#8	#8	.79	47,400	59,250	75,840
#9 [#29]	60,000	75,000	90,000	1-1/4"-8	#9	#9	1.00	60,000	75,000	96,000
#10 [#32]	76,200	95,250	114,000	1-7/16"-8	#10	#10	1.27	76,200	95,250	121,920
#11 [#36]	93,600	117,000	140,400	1-9/16"-8	#11	#11	1.56	93,600	117,000	149,760

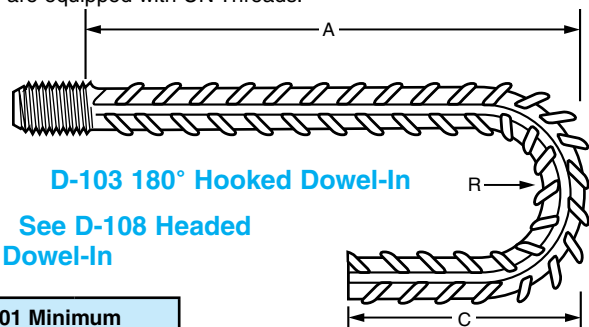
P_y=Minimum Yield Strength of bar.

*5/8", 3/4", 7/8" and 1" sizes have UNC Threads. 1-1/8" and larger sizes are equipped with UN Threads.

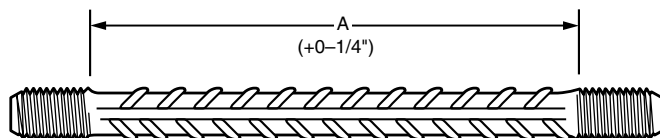
**Loads shown based on 160% f_y specified.



To order, give dimensions A, B and C as required



D-103 180° Hooked Dowel-In
See D-108 Headed Dowel-In



D-104 Double-Ended Dowel-In

D-101 Minimum MFG. Length DI DOWEL INS	
#4 (#13)	9"
#5 (#16)	9"
#6 (#19)	9 1/4"
#7 (#22)	9 1/4"
#8 (#25)	15 1/2"
#9 (#29)	15 1/2"
#10 (#32)	15 3/4"
#11 (#36)	16"
#14 (#43)	24"
#18 (#57)	24"

NOTE: To be manufactured as Single End

Bending DB or DI 90° only Minimum "A" Dimension	
#4 (#13)	4" *
#5 (#16)	5" *
#6 (#19)	6" *
#7 (#22)	7" *
#8 (#25)	8" *
#9 (#29)	9" *
#10 (#32)	10" *
#11 (#36)	11" *

* Tolerance on Bending Plus 0 / Minus 1" on "A" Dimension

D-104 Minimum Length Double End Dowel Ins.	
#4 (#13)	8" **
#5 (#16)	8" **
#6 (#19)	8" **
#7 (#22)	8" **
#8 (#25)	14" **
#9 (#29)	14" **
#10 (#32)	14" **
#11 (#36)	14" **

**Plus thread each end.

Dowel Bar Splicer System

D-101-A Straight Dowel Bar Splicer DB-SAE, D-102-A 90° Hooked Dowel Bar Splicer, D-103-A 180° Hooked Dowel Bar Splicer, D-104-A Double-Ended Dowel Bar Splicer

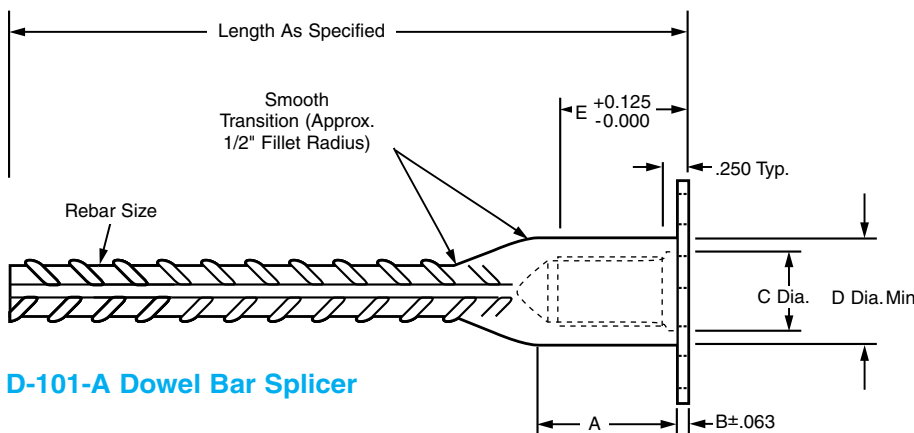
The Dayton Superior Dowel Bar Splicer is a one-piece unit, integrally forged from ASTM A615 grade 60 deformed rebar material. The splicers are available in #4 through #11 rebar sizes to be used in conjunction with the corresponding size dowel- in to accomplish a mechanical splice designed to achieve 160% of specified yield (full mechanical ultimate).

The splicer can be furnished straight (D-101-A) cut to length, 90° and 180° hooked (D-102-A and D-103-A) and double- ended (D-104-A) in plain or epoxy coated finish. The splicer can also be special-ordered with a reduced diameter washer flange or with the washer flange clipped (in more than one direction, if required) to provide adequate concrete cover, or to avoid interference.

The D-104-A Double-Ended Dowel Bar Splicer is used to establish a direct load path through a concrete section, thus avoiding multiple hooked rebar and eliminating rebar congestion. The double-ended unit can be configured in a "U" shape for special applications.

Bar Size	Thread Size	A	B	C	D	E	Flange Diameter	Minimum P _{ult} Range = 95% F _U Actual or 160% F _y Specified*
#4 [#13]	5/8"-11 UNC	1-1/8"	1/8"	11/16"	55/64"	1"	1-7/8"	19,200 lbs.
#5 [#16]	3/4"-10 UNC	1-9/16"	1/8"	13/16"	1-3/64"	1-1/8"	2-1/16"	29,760 lbs.
#6 [#19]	7/8"-9 UNC	1-11/16"	1/8"	15/16"	1-15/64"	1-1/4"	2-1/4"	42,400 lbs.
#7 [#22]	1"-8 UNC	1-27/32"	1/8"	1-1/16"	1-27/64"	1-3/8"	2-7/16"	57,600 lbs.
#8 [#25]	1-1/8"-8 UN	2-1/16"	1/8"	1-3/16"	1-19/32"	1-1/2"	2-5/8"	75,840 lbs.
#9 [#29]	1-1/4"-8 UN	2-3/16"	1/8"	1-5/16"	1-25/32"	1-5/8"	2-13/16"	96,000 lbs.
#10 [#32]	1-7/16"-8 UN	2-7/16"	1/8"	1-1/2"	2"	1-13/16"	3"	121,920 lbs.
#11 [#36]	1-9/16"-8 UN	2-9/16"	1/8"	1-5/8"	2-7/32"	1-15/16"	3-1/4"	149,760 lbs.

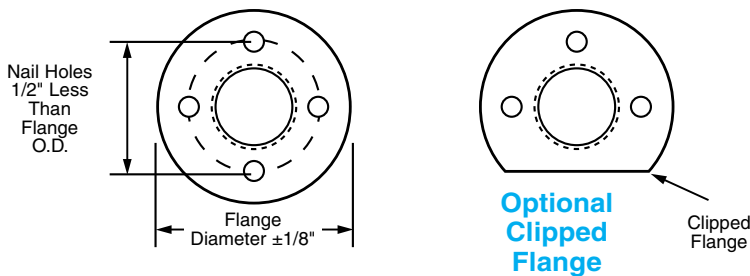
*Loads shown based on 160% f_y specified



D-101-A Dowel Bar Splicer

D-101-A Minimum MFG. Length DB-SAE	
#4 (#13)	12"
#5 (#16)	14"
#6 (#19)	16"
#7 (#22)	16"
#8 (#25)	16"
#9 (#29)	16"
#10 (#32)	16"
#11 (#36)	16"

NOTE: To be manufactured as Single End



Note: No. 4, 5 and 6 splicers, 18", 24" and 36" long will usually have a stamped metal plug to protect threads; all other sizes will have a plastic cap plug.

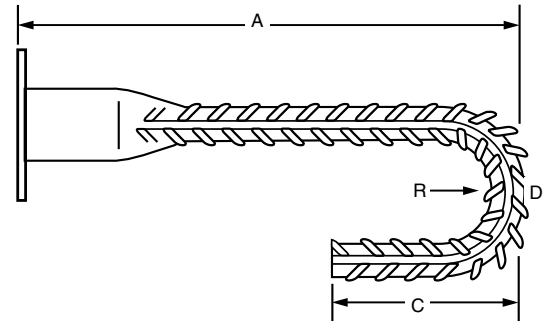
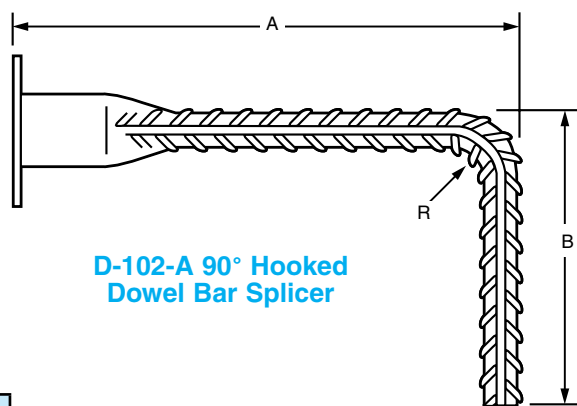
Dowel Bar Splicer System

Bar Size	Specified or Required Dowel Bar			Recommended Dowel Bar Splicer and Dowel-In						
	Grade 60 Rebar Loads (lbs.)			System Thread Size*	DB-SAE Bar Size	Dowel-In Bar Size	System Stress Area (min.)	Completed Splice (lbs.)		
	P _y	1.25 P _y	P _{ult}					P _y	1.25 P _y	Minimum P _{ult} Range = 95% F _u Actual or 160% F _y Specified**
#4 [#13]	12,000	15,000	18,000	5/8"-11	#4	#4	.20	12,000	15,000	19,200
#5 [#16]	18,600	23,250	27,900	3/4"-10	#5	#5	.31	18,600	23,250	29,760
#6 [#19]	26,400	33,000	39,600	7/8"-9	#6	#6	.44	26,400	33,000	42,400
#7 [#22]	36,000	45,000	54,000	1"-8	#7	#7	.60	36,000	45,000	57,600
#8 [#25]	47,400	59,250	71,100	1-1/8"-8	#8	#8	.79	47,400	59,250	75,840
#9 [#29]	60,000	75,000	90,000	1-1/4"-8	#9	#9	1.00	60,000	75,000	96,000
#10 [#32]	76,200	95,250	114,000	1-7/16"-8	#10	#10	1.27	76,200	95,250	121,920
#11 [#36]	93,600	117,000	140,400	1-9/16"-8	#11	#11	1.56	93,600	117,000	149,760

P_y=Minimum Yield Strength of bar.

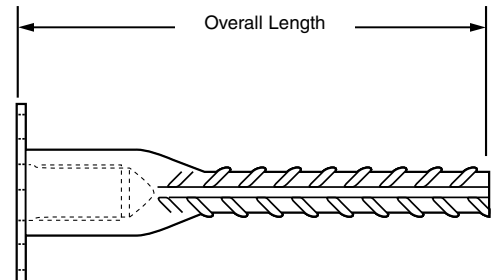
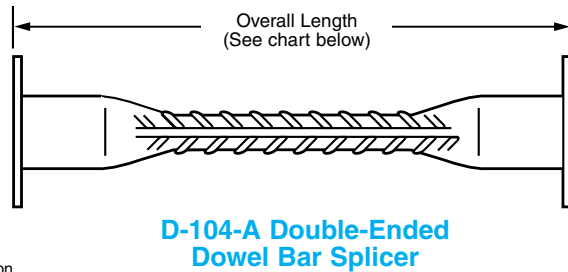
*5/8", 3/4", 7/8" and 1" sizes have UNC Threads. 1-1/8" and larger sizes are equipped with UN Threads.

**Loads shown based on 160% f_y specified.



Bending DB or DI 90° only Minimum "A" Dimension	
#4 [#13]	4" *
#5 [#16]	5" *
#6 [#19]	6" *
#7 [#22]	7" *
#8 [#25]	8" *
#9 [#29]	9" *
#10 [#32]	10" *
#11 [#36]	11" *

* Tolerance on Bending Plus 0 / Minus 1" on "A" Dimension



D-104-A Double-Ended Min. Lengths		Tolerance Overall Length
#4 [#13]	12" O.A.	+0 - 3/8"
#5 [#16]	12" O.A.	+0 - 3/8"
#6 [#19]	14" O.A.	+0 - 1/2"
#7 [#22]	16" O.A.	+0 - 5/8"
#8 [#25]	16" O.A.	+0 - 3/4"
#9 [#29]	16" O.A.	+0 - 1"
#10 [#32]	16" O.A.	+0 - 1"
#11 [#36]	16" O.A.	+0 - 1"

See D-108 Headed Dowel Bar Splicer

To Order:

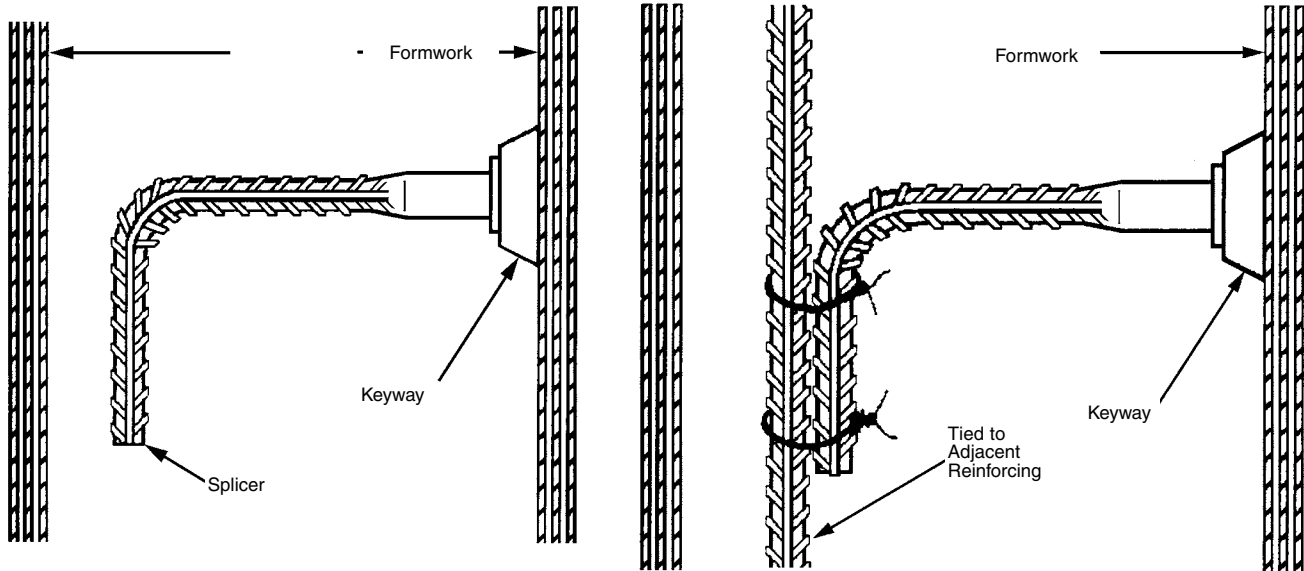
Specify: (1) quantity, (2) name, (3) bar size (should be equivalent to the rebar being substituted for on the structural drawings), (4) dimensions required.

Example:

600, D-101-A Dowel Bar Splicers, #5 rebar, 36" long.

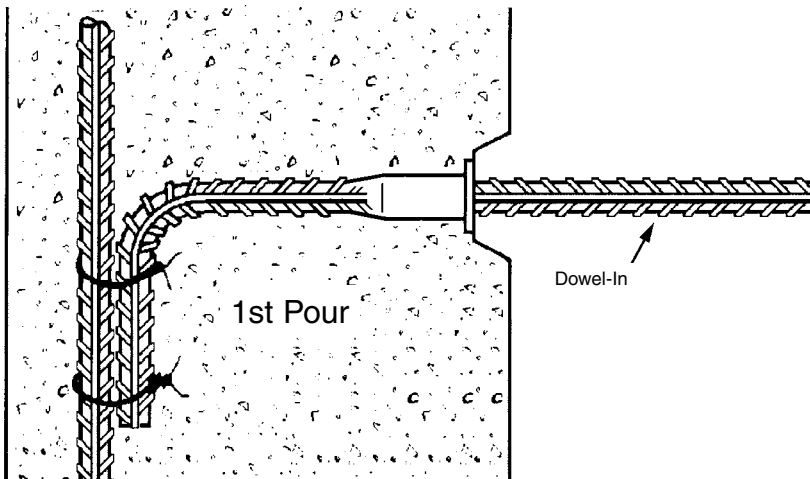
** Based on barrels forged on each end. For lengths less than minimum - please check with Tremont - we may supply forged DB one end, DI with Coupler & nailer washer other end.

Typical Dowel Bar Splicer System Installation

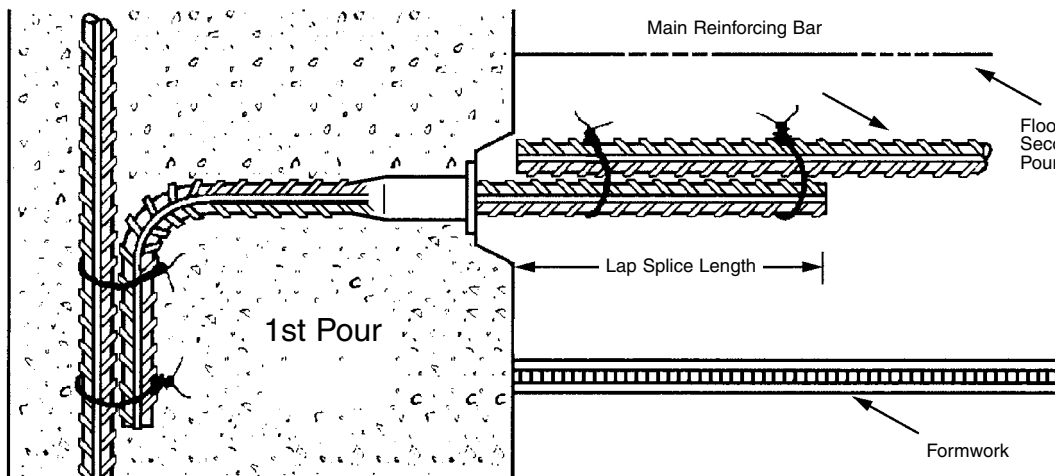


1. Set forms, and nail or screw Splicer to form key.

2. Place required reinforcing steel.



3. After first pour has properly set, remove the formwork and screw Dowel-Ins into the exposed splicers.

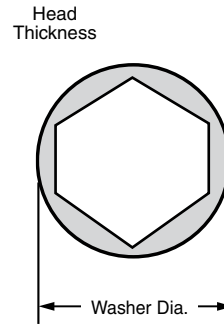
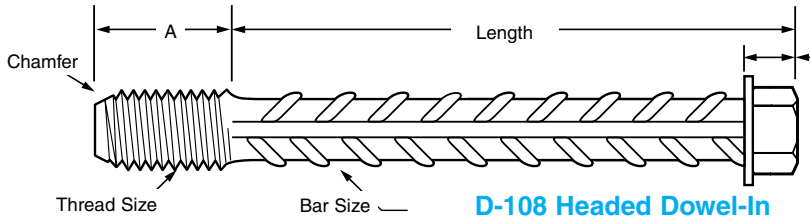


4. Place second pour formwork and reinforcing steel.

Dowel Bar Splicer System

D-108 Headed Dowel-In

The Dayton Superior D-108 Headed Dowel-In is a length of grade 60 deformed rebar with one end enlarged by forging and then threaded, and the other end forged into a bolt head configuration. The D-108 Headed Dowel-In is designed for use in congested areas where hooked dowel-ins cannot be utilized. D-108 Dowel-In is available in plain or epoxy coated finish. Standard length of D-108 is 12 times the bar diameter. Other lengths available on request.



D-108 Minimum Length Hex Head Dowel In	
#4 (#13)	6" **
#5 (#16)	6" **
#6 (#19)	6" **
#7 (#22)	6" **
#8 (#25)	10" **
#9 (#29)	10" **
#10 (#32)	12" **
#11 (#36)	12" **

** Plus Thread

Bar Size	Thread Size	A	Width Across Flats	Washer Diameter	Head Thickness	Ultimate Strength
#4 [#13]	5/8"-11 UNC	7/8"	—	—	—	18,000 lbs.
#5 [#16]	3/4"-10 UNC	1"	7/8"	1-3/16"	7/16"	27,900 lbs.
#6 [#19]	7/8"-9 UNC	1-1/8"	1-1/16"	1-1/2"	7/16"	39,600 lbs.
#7 [#22]	1"-8 UNC	1-1/4"	1-5/16"	1-3/4"	9/16"	54,000 lbs.
#8 [#25]	1-1/8"-8 UN	1-3/8"	1-5/16"	1-3/4"	9/16"	71,100 lbs.
#9 [#29]	1-1/4"-8 UN	1-1/2"	1-3/4"	2-1/8" – 2-1/4"	3/4"	90,000 lbs.
#10 [#32]	1-7/16"-8 UN	1-11/16"	1-3/4"	2-1/8" – 2-1/4"	3/4"	114,300 lbs.
#11 [#36]	1-9/16"-8 UN	1-13/16"	2-1/16"	2-1/2" – 2-5/8"	7/8"	140,400 lbs.

*Ultimate strength based on 160% f_y specified.

To Order:

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

Example:

500, D-108 Headed Dowel-Ins, #6 rebar x 12" long.

D-108-A Headed Dowel Bar Splicer

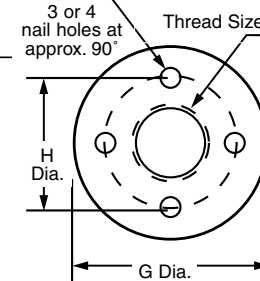
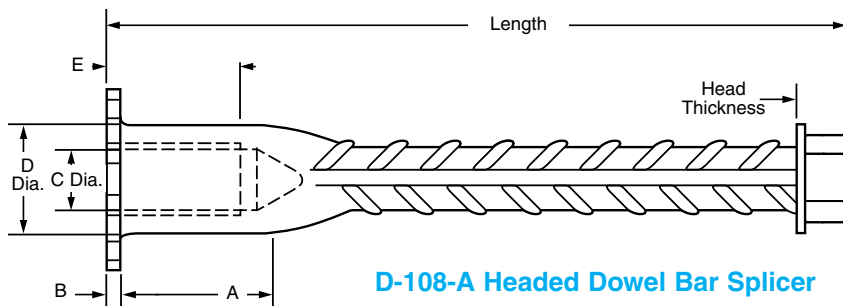
The Dayton Superior D-108-A Headed Dowel Bar Splicer is designed to help ease hooked rebar congestion. It has excellent anchorage capacities and can be used for common structural anchoring, such as one-sided forming, light standard support, signs, posts, etc. The D-108-A Splicers are available in sizes #4 through #11 in plain or epoxy coated finish. Standard lengths for D-108-A is 12 times the bar diameter. Other lengths available on request.

To Order:

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

Example:

500, D-108-A Headed Dowel Bar Splicer, #5 rebar x 9" long.



D-108-A Minimum Length DB-SAE-3	
#4 (#13)	5" O.A.
#5 (#16)	5" O.A.
#6 (#19)	6" O.A.
#7 (#22)	8" O.A.
#8 (#25)	8" O.A.
#9 (#29)	9" O.A.
#10 (#32)	12" O.A.
#11 (#36)	12" O.A.

Bar Size	Thread Size	A	B	C	D	E	Width Across Flats	Washer Diameter	Head Thickness	Ultimate Strength
#4 [#13]	5/8"-11 UNC	1-1/8"	1/8"	11/16"	55/64"	1"	1-1/16"	1-3/8"	1/2"	18,000 lbs.
#5 [#16]	3/4"-10 UNC	1-9/16"	1/8"	13/16"	1-3/64"	1-1/8"	1-5/16"	1-5/8"	1/2"	27,900 lbs.
#6 [#19]	7/8"-9 UNC	1-11/16"	1/8"	15/16"	1-15/64"	1-1/4"	1-5/16"	1-5/8"	5/8"	39,600 lbs.
#7 [#22]	1"-8 UNC	1-27/32"	1/8"	1-1/16"	1-27/64"	1-3/8"	1-3/8"	1-7/8"	5/8"	54,000 lbs.
#8 [#25]	1-1/8"-8 UN	2-1/16"	1/8"	1-3/16"	1-19/32"	1-1/2"	1-3/8"	1-7/8"	5/8"	71,100 lbs.
#9 [#29]	1-1/4"-8 UN	2-3/16"	1/8"	1-5/16"	1-25/32"	1-5/8"	1-3/4"	2-1/8" – 2-1/4"	3/4"	90,000 lbs.
#10 [#32]	1-7/16"-8 UN	2-7/16"	1/8"	1-1/2"	2"	1-13/16"	1-3/4"	2-1/8" – 2-1/4"	3/4"	114,300 lbs.
#11 [#36]	1-9/16"-8 UN	2-9/16"	1/8"	1-5/8"	2-7/32"	1-15/16"	2-1/16"	2-1/2" – 2-5/8"	7/8"	140,400 lbs.

*Ultimate strength based on 160% f_y specified.

ICC ES Cyclic Test Averages for Dowel Bar Splicer System

ICC Evaluation Report No. 4028

Bar Size	Bar Area sq. in.	Cyclic Load Levels (Stages 1, 2, 3)				Tensile Strength (Stage 4)		
		P _{min} (kips)	P _{max} ¹ (kips)	P _{max} ² (kips)	P _{max} ³ (kips)	(kips)	ksi	%f _y
#4 [#13]	0.20	-6.0	11.4	13.12	13.76	20.08	100.42	167.2
#5 [#16]	0.31	-9.3	17.7	21.9	22.18	30.23	97.5	162.4
#6 [#19]	0.44	-13.2	25.1	31.58	32.36	45.01	102.3	170.4
#7 [#22]	0.60	-18.0	34.2	41.68	44.6	60.24	100.42	167.4
#8 [#25]	0.79	-23.7	45.0	48.42	55.74	79.64	100.84	168.0
#9 [#29]	1.00	-30.0	57.0	66.52	66.84	95.66	95.66	159.2

Note: The above are average values derived from tests performed by Wiss, Janney, Elstner Associates, Inc. in accordance with ICC's acceptance criteria AC-133. All bars met ICC's Type 2 Splice Requirements.

Note: One kip = 1,000 pounds.

ICC ES Cyclic Test Averages on Dayton Superior US/MC Splices

ICC Evaluation Report No. 5216

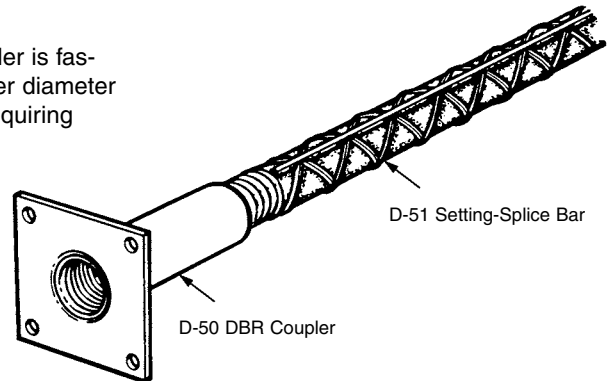
Bar Size	Bar Area (sq. in.)	Cyclic Load Levels (Stages 1, 2, 3)				Tensile Strength (Stage 4)		
		P _{min} (kips)	P _{max} ¹ (kips)	P _{max} ² (kips)	P _{max} ³ (kips)	(kips)	(ksi)	%f _y
#4 [#13]	0.20	-6.0	11.4	12.14	12.92	19.79	99.00	164.8%
#5 [#16]	0.31	-9.3	17.7	21.68	21.62	30.17	97.32	162.2%
#6 [#19]	0.44	-13.2	25.1	26.20	27.28	42.83	97.34	162.8%
#7 [#22]	0.60	-18.0	34.2	42.08	43.88	60.64	100.94	168.2%
#8 [#25]	0.79	-23.7	45.0	48.58	53.12	79.42	100.52	167.4%
#9 [#29]	1.00	-30.0	57.0	65.54	69.84	95.20	95.54	159.2%
#10 [#32]	1.27	-38.1	72.4	80.00	83.64	124.54	98.06	163.4%
#11 [#36]	1.56	-46.8	88.9	102.96	103.00	149.02	95.52	159.2%
#14 [#43]	2.25	-67.5	128.3	143.42	158.78	220.24	97.88	163.2%
#18 [#57]	4.00	-120.0	228.0	259.3	287.2	395.3	98.7	165 %

The above are average values derived from tests performed by Wiss, Janney, Elstner Associates, Inc. in accordance with ICC's acceptance criteria AC-133. All bars met ICC's Type 2 Splice Requirements.

Note: One kip = 1,000 pounds.

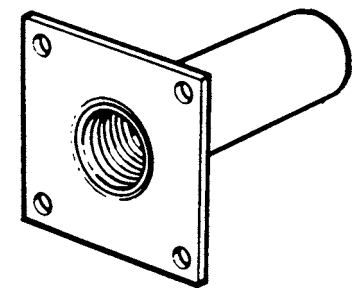
D-50 DBR Coupler System

The DBR Couplers and DBR Setting/Splice Bars are simple, easy to use and familiar to all construction workers. The coupler is fastened to the formwork by nails, screws or a NC threaded bolt of proper diameter and length. The D-50 DBR Coupler splice meets or exceeds codes requiring 125% f_y .

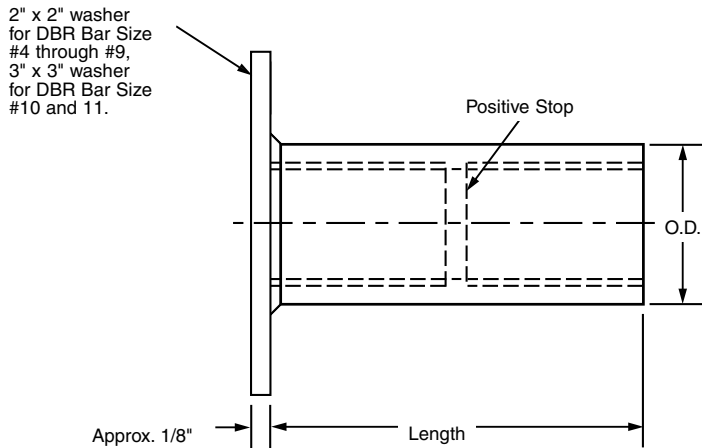


D-50 DBR Coupler and DBR Setting/Splice Bars

The Dayton Superior D-50 DBR Coupler is fabricated from high quality steel satisfying ASTM A-108 and is tested in accordance with ACI, AASHTO and ASTM standards. DBR Couplers accommodate rebar sizes #4 through #11 and have an internal positive stop to ensure proper thread engagement. Refer to tables for additional specifications.



D-50 DBR Coupler



D-50 DBR Coupler Selection Chart			
Product Code	Bar Size Designation	Thread Data	O.D. x Length
77098	#4 [#13]	1/2" -13 UNC	3/4" x 1- 7/8"
77100	#5 [#16]	5/8" - 11 UNC	7/8" x 2"
77110	#6 [#19]	3/4" -10 UNC	1- 1/16" x 2- 3/8"
77120	#7 [#22]	7/8" - 9 UNC	1- 1/4" x 2- 3/4"
77130	#8 [#25]	1" - 8 UNC	1- 3/8" x 3- 1/8"
77140	#9 [#29]	1 1/8" - 8 UN	1- 5/8" x 3- 5/8"
77142	#10 [#32]	1 1/4" - 8 UN	1- 3/4" x 4- 1/8"
77144	#11 [#35]	1 3/8" - 8 UN	1-15/16" x 4- 3/8"

Note: Threads on #9, #10 and #11 couplers are UN not NC.

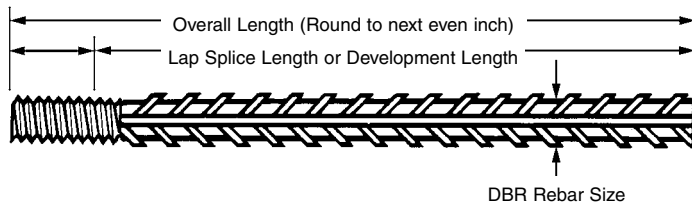
To Order:

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

Example:

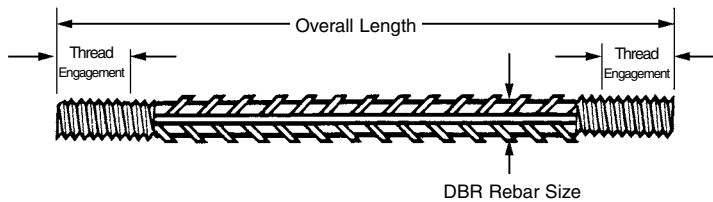
500 pcs., D-50 DBR Couplers, #8 rebar.

D-51 DBR Straight Bar Threaded One End



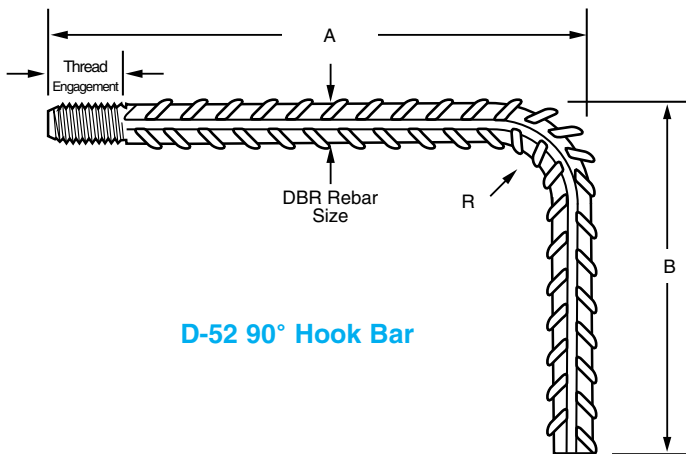
Rebar Size	Thread Data	A Thread Engagement
#4 (#13)	1/2"-13 UNC	3/4"
#5 (#16)	5/8"-11 UNC	7/8"
#6 (#19)	3/4"-10 UNC	1-1/16"
#7 (#22)	7/8"- 9 UNC	1-1/4"
#8 (#25)	1"- 8 UNC	1-7/16"
#9 (#29)	1-1/8"- 8 UN	1-11/16"
#10 (#32)	1-1/4"- 8 UN	1-15/16"
#11 (#36)	1-3/8"- 8 UN	2-1/16"

D-54 DBR Straight Bar Threaded Both Ends

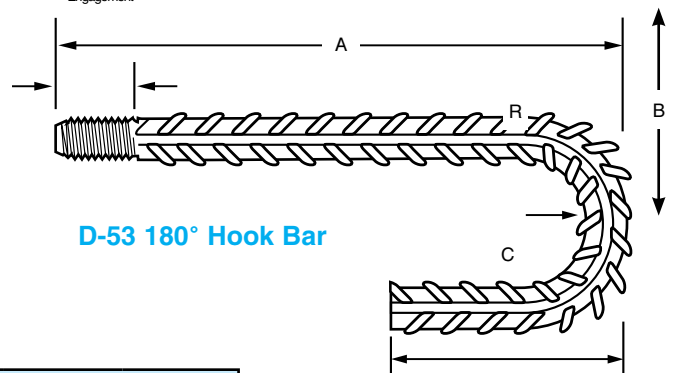


Note: Color coded removable plastic caps available on request.
D-51 overall length is required length less one half of coupler length.
D-54 overall length is required length less coupler length minus 5/16".

D-52 DBR 90° Hook Bar and D-53 180° Hook Bar Threaded One End



D-52 90° Hook Bar



D-53 180° Hook Bar

Rebar Size	Thread Data	Thread Engagement	B* Standard For D-52	B Standard For D-53	D Standard For D-53	R Standard
#4 (#13)	1/2"-13 UNC	3/4"	4-1/2"	9-3/4"	4-1/2"	1-1/2"
#5 (#16)	5/8"-11 UNC	7/8"	5-1/2"	12"	5"	1-7/8"
#6 (#19)	3/4"-10 UNC	1-1/16"	7"	23"	6"	2-1/4"
#7 (#22)	7/8"- 9 UNC	1-1/4"	8"	24"	7"	2-5/8"
#8 (#25)	1"- 8 UNC	1-7/16"	9"	25"	8"	3"
#9 (#29)	1-1/8"- 8 UN	1-11/16"	11"	31"	10-3/8"	4-3/4"
#10 (#32)	1-1/4"- 8 UN	1-15/16"	12"	32"	11-5/8"	5-3/8"
#11 (#36)	1-3/8"- 8 UN	2-1/16"	14"	33"	12-7/8"	6"

To Order:
Specify: (1) quantity, (2) name, (3) bar size (4) dimension "B" (as specified on plans) (5) dimension "C" or "D" and (6) dimension "R"
Example:
500 pcs., D-52 90° Hook Bar, #6, B=7", C=20", R=2"

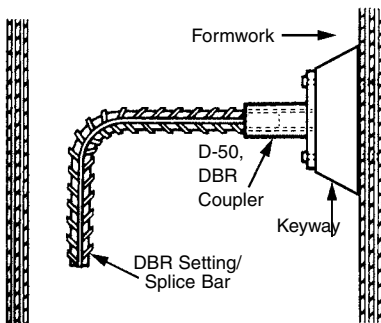
Notes: Color coded removable plastic caps available on request.
*Based on "R" minimum as shown. Standard dimensions are to CRSI standard by pin size.

See ASTM A-615 Reinforcing Bar data on page 30.

ASTM A-615 Grade 60 Reinforcing Bar Data							
Reinforcing Bar Size Designation	Reinforcing Bar Area (in ²)	Minimum Yield (lbs.)	Minimum Ultimate (lbs.)	Thread Data	Thread Data		
					Thread Tensile Stress Area (in ²)	125% f _y Minimum Requirement (lbs.)	Minimum Ultimate Tensile Stress (psi)
#4 [#13]	0.20	12,000	18,000	1/2"-13 NC	0.1419	15,000	105,708
#5 [#16]	0.31	18,600	27,900	5/8"-11 NC	0.226	23,250	102,876
#6 [#19]	0.44	26,400	39,600	3/4"-10 NC	0.334	33,000	98,802
#7 [#22]	0.60	36,000	54,000	7/8"-9 NC	0.462	45,000	97,403
#8 [#25]	0.79	47,400	71,100	1"-8 UNC	0.606	59,250	97,772
#9 [#29]	1.00	60,000	90,000	1-1/8"-8 UN	0.790	75,000	94,937
#10 [#32]	1.27	76,200	114,300	1-1/4"-8 UN	1.000	95,250	95,250
#11 [#36]	1.56	93,600	140,400	1-3/8"-8 UN	1.233	117,000	94,891
#14 [#43]	2.25	135,000	202,500	1-5/8"-8 UN	1.780	168,750	94,803

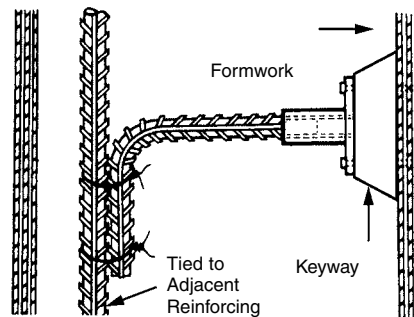
How to Install the DBR Coupler System

Step 1



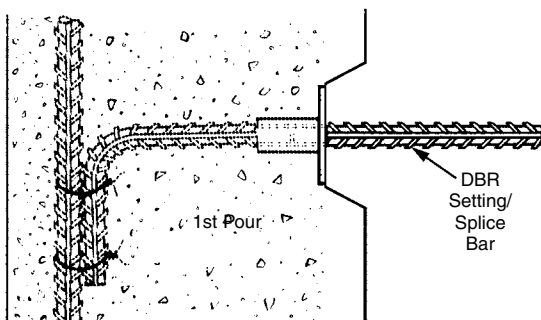
A DBR Setting/Splice Bar is threaded into the D-50 coupler until the positive thread stop is reached. The D-50 DBR coupler is then fastened to the formwork with nails, screws or bolts.

Step 2



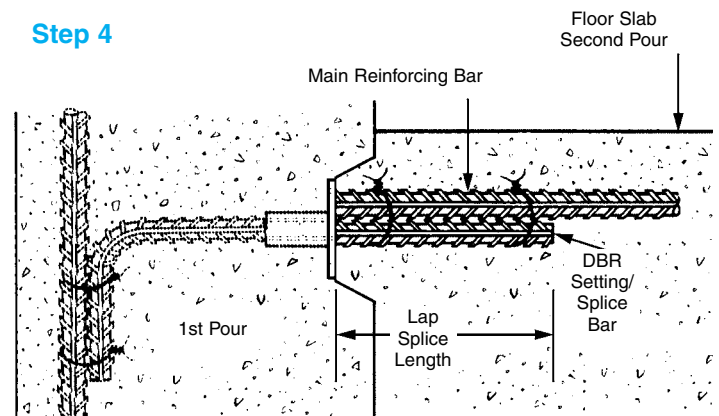
The DBR Setting/Splice Bar is tied off to adjacent reinforcing steel, for proper support during concrete placement as well as to maintain the required lap splice length.

Step 3



After the formwork is stripped, a second DBR Setting/Splice Bar is threaded into the exposed end of the D-50 coupler until the stop is reached.

Step 4



The DBR Setting/Splice bar is tied to the adjacent reinforcing steel maintaining the proper lap splice length. The dowel bar replacement is now complete, ready for final concrete placement.