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**APPROVED SUPPLIERS OF  
MECHANICAL SPLICES FOR REINFORCING BARS**

**BASIS OF ACCEPTANCE**

1. Mechanical splices shall be used only when:
    - a. Detailed by the design drawings placed at an approved location
      - Detailed on the design plan
      - Or as approved by the engineer
    - b. Pre-approved brands as listed in this IM.
  2. Acceptance of mechanical splices shall be on the basis of certification from an approved source.
  3. Mechanical splices shall develop in tension or compression, as required, at least 125% of the specified yield strength of the bars being spliced.
  4. Epoxy-coated mechanical splices coated in accordance of ASTM A934 shall be used with epoxy-coated reinforcing bars. Epoxy-coated reinforcing bars shall conform to the requirements of ASTM A-775 and [IM 451.03B](#).
  5. With each shipment to a project the suppliers shall furnish:
    - a. A letter of compliance with the Iowa DOT requirements and it shall include certification statement, project number, county and contractor's name. It shall also include a certification statement that couplers meet the ASTM requirement and the Iowa DOT specification requirements.
    - b. Copies of mill test reports of steel used in the fabrication of the couplers and the reinforcing bars showing the chemical and mechanical properties
    - c. Couplers and reinforcing steel shall be made from steel melted and manufactured in the U.S.A.
    - d. Quantity of couplers shipped to the project.
    - e. If epoxy coated couplers are used, then a certification statement shall be included and shall include the name of the epoxy coating company, powder brand, and compliance with ASTM [A934](#).
  6. Couplers shall be made from steel conforming to ASTM A108, Level one or Level two or from steel conforming to the requirements of ASTM A519, Grade 1025, ASTM A576 or approved equal.
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7. Couplers shall be suitable for connecting deformed reinforcing bars manufactured to the requirements of ASTM A615/A615M
  8. Reinforcing steel shall meet the requirements of ASTM A-615 Grade 60
  9. Suppliers shall retain records of coating reports and copies of mill test reports for a minimum period of three years.
  10. Samples of mechanical splicers and steel reinforcement shall be secured at the project site. (one sample of any size of coated and one sample of uncoated)

### **NEW DISTRIBUTOR / SUPPLIERS APPROVAL REQUIREMENTS**

Prior to furnishing mechanical splices to a project the distributor, supplier, or fabricator shall request approval by submitting the following items:

1. A written application for approval shall be submitted to the Central Materials Office in Ames, Iowa, and shall contain the following items.
  - a. Source of steel
  - b. Grade of steel
  - c. Grade of couplers
  - d. Name of fabricator
  - e. Epoxy powder brand name and coater's name
2. Quality control procedures that the company has established to ensure material identity (heat number, source, etc.)
3. A typical example of certification documents that the company will furnish to Iowa DOT projects.
4. Test reports from independent / certified lab showing test compliance with the intended requirements.
5. Submit three different samples of three different sizes for testing (coated and uncoated)

Note 1. Epoxy-coated threaded couplers coated in accordance of ASTM A934 shall be used for splicing epoxy coated bars that comply to ASTM A 775 / A 775 M.

Note 2. Galvanized threaded couplers shall be used for splicing galvanized reinforcing bars that comply to ASTM A 767 / A 767 M.

Note 3. Stainless steel threaded couplers shall be used for splicing stainless steel reinforcing bars that comply to ASTM S 955 / A 955 M.

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**LIST OF PRE-APPROVED SUPPLIERS**

<b><u>Fabricators / Suppliers</u></b>	<b><u>Product's Name</u></b>	<b><u>Address</u></b>
Barsplice Products, Inc.	<ul style="list-style-type: none"><li>• BPI Taper Threaded Grip – Twist Couplers</li><li>• BPI Grip Couplers</li><li>• Zap Screwlok Couplers</li><li>• Double Barrel Zap Couplers</li><li>• BPI Barsplicer Couplers</li><li>• BPI Barsplicer Doughnut</li><li>• Zap Screwlok Couplers “SL” Series</li></ul>	4900 Webster Steet Dayton, Ohio 45414
Dayton Superior Corp	<ul style="list-style-type: none"><li>• Dowel Bar Splicing System (Dowel IN/DB-SAE. Black bar only)</li><li>• Type I (S-series couplers – 135% of yield)</li><li>• Type 2 (L-series cuplers-160% of yield)</li></ul>	4226 Kansas Ave. Kansas City, Kansas 66106
Erico, Inc (Lenton Couplers)	<ul style="list-style-type: none"><li>• Taper Threaded Standard Couplers Only</li><li>• Terminator D6*</li><li>• Form Saver SA*</li><li>• Form Saver FS*</li></ul>	34600 Solon Road Solon, Ohio 44139-2695
FabCo LLC	<ul style="list-style-type: none"><li>• Tie Bar (black only)</li></ul>	7410 Apache St Houston, TX 77028

\*Approved on a project-by-by project basis. Samples need to be tested prior to incorporation into the project.

### **Barsplice Products, Inc.**

BPI Barsplicer are available for bar-sizes No. 4 through No. 11 (No. 13 through 36), Grade 60 (420). Bars can be spliced by the BPI bar-splicer methods. The bar-splicer system uses standard unified national coarse threads. Threaded couplers are used with bars that have matching exterior threads cut or rolled directly onto the ends of the reinforcing bars. The thread length on the bars is controlled by BPI (Barsplice Products, Inc.) to ensure proper thread engagement.

Manufacturer recommended installation tools are required.

Contact Tel: (937)275-8700 Fax: (937)275-9566 Email: bar@barsplice.com

### **Dayton/Superior Dowel Bar Splicer System**

The Dayton /Superior Dowel Bar Splicer System is made of two pieces.

1. The Dowel Bar Splicer (DB-SAE) is a one-piece unit, integrally forged from Grade 60 rebar material. It is available in #4 through #11 sizes.
2. The Dowel IN (DI) is also manufactured from Grade 60 rebar material and is available in sizes corresponding to the DB-SAE splicer. The end of the bar is enlarged by forging before threading so that the cross sectional area of the bar is not reduced during threading operations.

Both pieces of the completed splice are manufactured from one single size of rebar material. The system does not require welding, coupling or extra pieces. Dowel-ins are available straight or hooked. The Dayton/Richmond Dowel Bar Splicer System is only approved as plain (with no epoxy coating).

The Standard Taper-Lock System consists of two taper-threaded pieces of reinforcing steel bar and a taper-threaded steel coupling sleeve. The threads of the tapered end of each reinforcing bar are engaged into the taper-threaded coupling sleeve to assemble the splice. Each end must be tightened to a specified torque value depending on the bar size and as specified by the splice manufacturer.

### **Lenton (Erico) Reinforcing Bar Coupler**

Erico manufactures Lenton mechanical splicers. It is a tapered, threaded coupler, manufactured from high quality steel and behaves as continuous lengths of reinforcing steel bars by providing full strength in tension, compression and stress reversal applications. The bar ends must be taper threaded using manufacturer's bar threading equipment to ensure proper taper and thread engagement. Bars shall be installed to the manufacturer's requirements.

The Lenton mechanical splice can be tightened using conventional wrenches in 4 - 4 1/2 turns.

Erico also supplies adjustable torque wrenches. This wrench can be used to both install couplers and verify/inspect torque values after installation.

For best possible splice, Erico recommends the following torque wrench settings:

<u>Bar Size (English)</u>	<u>Bar Size (Metric)</u>	<u>Wrench Torque Settings</u>	
		<u>ft./lbs.</u>	<u>Nm<sup>2</sup></u>
3	10	30	40
4	12	30	40
	14	60	80
5	16	90	120
	18	110	150
6	20	130	180
7	22	160	220
8	25 (24-26)	200	270
9	28	200	270
	30	200	300
10	32	200	300
	34	200	300
11	36	200*	300*
12	38	*	*
	40	*	*
14	43	*	*
	50	*	*
18	57	*	*

\* Contact Erico Lenton  
216-248-0100  
Fax 216-248-0723

### **FabCo Tie Bar**

The FabCo Tie Bar is a multi-piece, tapered and threaded reinforcing steel end and threaded coupler. The FabCo Tie bar is stamped on the coupler with "FabCo" to ensure authenticity. Threaded rebar is ASTM 615 Grade 60, and the couplers are ASTM A108 Grade 1215.