




Office of Engineering  
Project Development Division  
Section 25 - Bridge and Structural Design  
PO Box 94245 | Baton Rouge, LA 70804-9245  
Phone: 225-379-1302

Bobby Jindal, Governor  
Sherri H. LeBas, P.E., Secretary

MEMORANDUM

TO: ALL CONSULTANTS  
ALL BRIDGE DESIGNERS  
ALL DOTD DISTRICT DESIGN ENGINEERS

FROM: PAUL FOSSIER, P.E.  
BRIDGE DESIGN ENGINEER ADMINISTRATOR 

SUBJECT: BRIDGE DESIGN TECHNICAL MEMORANDUM NO. 45 (BDTM.45)  
PRECAST PRESTRESSED CONCRETE PILE SPLICE USAGE REQUIREMENTS AND  
ACCEPTANCE CRITERIA

DATE: February 6, 2014

Effective immediately, the following usage requirements and acceptance criteria for precast concrete pile splices shall be implemented for all projects.

Usage Requirements:

Concrete pile splices are undesirable and should only be considered by the designer when it is infeasible to deliver a full length pile to the site, or when field conditions prevent the driving of a full length pile. If pile splices are required, the following "Acceptance Criteria" shall be included in the plans and used to accept or reject the contractor's submitted pile splice. Additionally, the DOTD Geotechnical Section shall be contacted to determine if dynamic monitoring will be required.

When the contractor proposes the use of a pile splice, he must demonstrate to the satisfaction of the project engineer and the DOTD Bridge Design Engineer that either it is not possible to transport the full-length pile to the site or it is not possible to drive the pile if it is furnished in its full length. Once DOTD has approved the use of pile splices for a project, the contractor's proposed pile splice will be subject to the following "Acceptance Criteria".

Acceptance Criteria:

The splice design shall be submitted by the contractor for DOTD's review and acceptance and shall be stamped by a licensed engineer in the state of Louisiana. The submittal shall contain the design calculations, pile splice shop drawings, a schematic showing the locations of all the splices for each pile in each bent, and a pile installation plan describing how the spliced piles will be used on the project. Pile segments shall not be cast before the splice design submittal is reviewed and accepted and the recommended pile length and splice locations are approved for fabrication.

- The capacity of a manufactured pile splice shall be greater than or equal to the ultimate capacity of the pile in axial loading (compression and/or tension), lateral loading, and bending moment.
- Pile splices shall be located at least 3 pile diameters away from the maximum moment location in the pile, and at least 5 pile diameters below the scour elevation.
- The pile splice reinforcing steel bars that transfer the force from the splice to the pile shall extend to or beyond the location where the prestressing strands are fully developed. No more than 50% of the pile splice rebar may be terminated at that location. The remaining rebar must extend a length equal to one pile diameter (or the width of a square pile) beyond that location.

In voided piles, the pile void shall begin no closer than two pile diameters (or two times the width of a square pile) beyond the longest pile splice rebar.

- The components of the pile splice shall be installed at the casting plant during fabrication and comply with all manufacturer's recommendations and requirements. The fabricator shall submit a letter certifying that the pile splice assembly is fabricated in accordance with the shop drawings and that the pile splice bars anchoring the plate to the pile segment are all fully engaged (meeting the minimum threading embedment shown in the shop drawings).
- The spliced pile will be subject to the same performance requirements as a pile.
- The splice shall not preclude the successful use of dynamic monitoring.
- The pile splice shall not be used to splice different size piles.
- The cost of the splice shall be included in the cost of the pile.

This technical memorandum will be posted on the Bridge Design Website: [http://wwwsp.dotd.la.gov/Inside\\_LaDOTD/Divisions/Engineering/Bridge\\_Design/Pages/Technical-Memoranda.aspx](http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Bridge_Design/Pages/Technical-Memoranda.aspx)

Please contact Ms. Zhengzheng "Jenny" Fu (225-379-1321, [zhengzheng.fu@la.gov](mailto:zhengzheng.fu@la.gov)) if you have questions or comments.

PF/zzf/abl

Cc: Richard Savoie (Chief Engineer)  
Janice Williams (Chief, Project Development Division)  
Rhett Desselle (Assistant Secretary)  
David Miller (Bridge Maintenance Administrator)  
Michael Vosburg (Chief Construction Division Engineer)  
Edward Wedge (Project Management Director)  
Chris Nickel (Interim Pavement and Geotechnical Engineer Administrator)  
Chad Winchester (Road Design Engineer Administrator)  
Art Aguirre (FHWA)  
District Administrators (02, 03, 04, 05, 07, 08, 58, 61, 62)