



## Florida Department of Transportation

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**MATERIALS BULLETIN NO. 01-08**

**DCE MEMORANDUM NO. 03-08**

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**TO: DISTRICT MATERIALS RESEARCH ENGINEERS  
DISTRICT CONSTRUCTION ENGINEERS**

**FROM: Thomas O. Malerk, P.E., Director, Office of Materials  
Brian A. Blanchard, P.E., Director, Office of Construction**

**COPIES: Richard Kessler, Michael Bergin, Rafiq Dariji**

**SUBJECT: SUBSTITUTING HIGHER STRENGTH CONCRETE FOR LOWER STRENGTH CONCRETE  
AND SUBSTITUTING STRUCTURAL CONCRETE FOR NON-STRUCTURAL CONCRETE**

In cases where a contractor proposes using a higher class concrete in lieu of a lower class concrete, there are two situations where this may occur. The first is replacing a lower class structural concrete with a higher class structural concrete. The second is replacing non-structural concrete with structural concrete. The materials acceptance for each situation is administered differently.

For structural concrete, the material must meet the requirements of Specification Section 346. Project acceptance is based on the contract requirements of the lower class of concrete. For example, if the contract requires 3,400 psi concrete and the contractor opts to use 5,500 psi concrete, the compressive strength test results must meet or exceed 3,400 psi. If the compressive strength test results are greater than or equal to 5,500 psi, the concrete is acceptable at full pay and the producer's quality control program is also acceptable. If the compressive strength results are greater than or equal to 3,400 psi, but less than 5,500 psi, the concrete has met the contract document requirements and is acceptable at full pay. Since the design mix did not meet the designated performance, it is in question and the District Materials Office will need to conduct an investigation of the concrete production facility. If the investigation results in a suspension of the concrete producer's quality control program, the Project Administrator will need to evaluate the contractor's quality control plan to determine if it must be suspended as well. If the compressive strength test results are less than 3,400 psi, acceptance and pay would be based on the requirements of 346-10 and/or 346-11.

When a contractor proposes to use structural concrete in lieu of non-structural concrete, the requirements of Specification Section 347 apply. If a contractor requests to use an approved structural concrete mix in a non-structural application, this should be allowed since the structural mix will normally meet the requirements of Section 347. The concrete does not have to be evaluated based on Section 346 requirements since it is being used in a non-structural application. The producer must supply a delivery ticket signed by the batcher indicating that the mix was batched in accordance with the specifications, including meeting the minimum 2,500 psi compressive strength. The delivery ticket must also be signed by the contractor certifying that the concrete was batched, delivered and placed in accordance with the specifications, including the water to cementitious ratio was not exceeded at the jobsite. If these requirements are met, the concrete is acceptable according to Section 347 and no further evaluation is needed.

If you have any questions, please contact Mike Bergin in the State Materials Office at (352) 955-6666.

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