

9480107 – MISCELLANEOUS TYPES PF PIPE – POLYVINYL CHLORIDE (PVC) PIPE (12 TO 36 INCHES)
RESPONSE TO COMMENTS RECEIVED FROM INDUSTRY REVIEW

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Comments:

We are concerned that a proper engineering design of ASTM F949 PVC pipe per AASHTO LRFD Section 12 cannot be performed.

The FDOT is proposing to eliminate the reference to AASHTO M304 and to solely reference ASTM F949 for corrugated PVC storm pipe.

There are no published long-term properties over 50 years for ASTM F949 pipe in AASHTO LRFD Section 12. Additionally, AASHTO LRFD Section 12 does not provide any physical section property information for pipe meeting ASTM F949 (i.e., wall area (A), distance to neutral axis (c), and moment of inertia (I)).

Instead, AASHTO publishes only 50-year material properties, such as modulus of elasticity and tensile strength, for AASHTO M304 pipe. ASTM F949 pipe and AASHTO M304 pipe are specifications for different types of pipe that happen to utilize resins with the same cell classification. Physical section property information for ASTM F949 pipe is also not published, to our knowledge, anywhere by the PVC pipe manufacturers approved for use in Florida or by Uni-Bell.

This apparent lack of published physical properties and absence of long-term properties seemingly prevents a professional engineer from conducting - not to mention signing and sealing - a proper design per AASHTO LRFD Section 12. It also causes some concern as to the basis of fill height tables that are currently in use.

Response: Design engineers allowing F949 PVC on FDOT projects do not conduct AASHTO LRFD Section 12 computations. Rather, the FDOT has examined F949 PVC for 100-year usage, accepting F949 PVC based on installation per our specifications and fill heights per Standard Index 205.