

A message from the Minnesota Concrete Pipe Association

Quality Assurance of Pipe Products

When installing any product for use as a storm sewer, the design engineer needs assurance that the installed structure was constructed properly. For reinforced concrete pipe, the way for an engineer to be assured of the quality of the structure is to reference ASTM C497. This Three Edge Bearing Test verifies that the correct amount of steel, and its placement, along with concrete strength, consolidation, etc. is as specified and that the pipe was manufactured according to specifications. The “structure” is factory tested to assure the quality of the delivered product.



ASTM C497



Mandrel Example

When flexible pipes, such as HDPE, are used for storm sewer, the proper installation, and field construction of the structure must be confirmed by deflection/mandrel testing. This mandrel is pulled through the pipe line to check that the inner diameter has not been deflected beyond acceptable limits. A nine-point mandrel is typically specified for deflection testing. These mandrels can be collapsed to fit down into a manhole, and are available in many diameters. Cherne Industries is one manufacturer that carries these products. http://www.cherneind.com/products-display.asp?pind=dg_1

The MnDOT technical memorandum 07-04-B-01

<http://www.dot.state.mn.us/tecsup/tmemo/active/tm07/04b01.pdf> lists the important criteria and procedures to ensure a proper installation. Of note are the following:

Deflection testing shall be done not less than thirty days after installation. The pipe shall be checked to see if the internal diameter is not reduced by more than 5%. Pipe through

which the mandrel does not pass will be considered unacceptable, and shall be re-laid, and also re-tested.

Further information on testing and mandrels can be attained from a local Minnesota Concrete Pipe Representative, or the American Concrete Pipe Association which has an interesting deflection article http://www.concrete-pipe.org/ysk_pdfs/ysk136.pdf

Visit <http://www.mnconcpipe.org> for more information on this and other concrete pipe issues or respond to this e-mail for additional information.

Thank you for your time,



The **Minnesota Concrete Pipe Association** is a non-profit organization comprised of concrete product suppliers in Minnesota.

Please visit our website www.mnconcpipe.org for more information.

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