



MICHELS PIPE SERVICES

P.O. Box 128 • 817 West Main St. • Brownsville, WI 53006-0128
920.583.3132 • Fax: 920.583.3429
www.michels.us

MICHELS POINT REPAIR SPECIFICATION

A. INTENT

It is the intent of this specification to provide for the reconstruction of short lengths of pipelines and conduits by the installation of a resin impregnated flexible tube which is inflated in a short length of the pipeline to form a hard, impermeable, corrosion resistant pipe within a pipe. When cured, the finished pipe will be formed to the original conduit. This reconstruction process can be used in a variety of gravity applications, such as sanitary sewers and storm sewers.

This is a standard specification and may require modification for specific job conditions.

B. PREQUALIFICATION

Only bids from prequalified products and contractors will be read. Bids submitted on products or from contractors that have not been prequalified will be returned unopened. The contractor and the proposed method of reconstruction shall be clearly and legibly identified on the bid envelope.

C. MATERIALS

The flex tube should consist of one or more layers of flexible needled felt capable of carrying resin, withstanding installation pressures and curing temperatures. The flex tube should be compatible with the resin system used.

The flex tube shall be fabricated to a size that when installed will form to the internal circumference of the original pipe. Allowance should be made for circumferential stretching during installation.

The flex tube shall contain no intermediate or encapsulated elastomeric layers. No materials shall be included in the tube that are subject to delaminating when cured.

Resin - A general purpose, unsaturated, styrene-based thermoset resin and catalyst system that is compatible with the inflation process should be used. The resin system can be expected to have as a minimum the seven day structural properties given in Table 1.

Table 1: Seven Day Structural Properties

PROPERTY	TEST METHOD	PSI	MPA
Flexural strength	D790	4,500	31
Flexural Modulus	D790	250,000	1,724

(Note: The values in table 1 are for field inspection. The purchaser should consult the manufacturer for the long-term structural properties.)



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D. STRUCTURAL REQUIREMENTS

The point repair shall be designed as per ASTM F1216 X1. Design considerations excluding X1.3 pressure pipe, with the following additional requirements:

The point repair design shall assume no bonding to the original pipe wall.

The bond between felt layers of the point repair shall be strong and uniform. All layers, after cure, must form one homogeneous structural pipe wall with no part of the point repair left unsaturated by resin.

E. TESTING REQUIREMENTS

Hydraulic Capacity - Calculations must support that the finished repair shall have at least 100% of the full flow capacity of the original host pipe before rehabilitation. Calculated capacities may be derived using a commonly accepted roughness coefficient for the original pipe material. A typical roughness coefficient for the pipe shall be as verified by third party test data.

F. INSPECTION

The installation may be inspected visually if appropriate, or by closed-circuit television if visual inspection cannot be accomplished. Variations from true line and grade may be inherent because of the conditions of the original piping.

The finished point repair should be continuous over the length of the defect plus one foot.

G. CLEAN UP

Upon acceptance of the installation work and testing, the installer shall reinstate the project area affected by the operations.

H. PAYMENT

Payment for the work included in this section will be in accordance with the prices set forth in the proposal for the quantity of work performed. Progress payments will be made monthly based on the work performed during that period.

Note: The specification for Michels Point Repair is written to cover typical Michels Point Repair installations. Unusual job conditions may require modification to the specification.