



December 17, 2021

Melanie E. La Rocca
Commissioner

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Jeffrey A Chalfin
Flow Dynamics, LLC
5731 Palmer Way
Carlsbad, CA 92009

Re: OTCR Submittal Code 58-21
Material assessment for Flow Management valve (FMV)
Material Acceptance Letter

Dear Jeffrey Chalfin,

Thank you for submitting the OTCR1 Alternate Material Acceptance Application dated 8/10/2021 for the above referenced project evaluating a flow management valve for acceptance in NYC. The application includes the following:

Identification of Uses. Flow management valve is a plumbing device that has multiple uses. The primary use of this valve is to improve water meter accuracy for the water consumer by managing the point of pressure drop within a water system. This valve creates a smooth, laminar flow; and maintains, as near as possible, city static pressure upstream; and prevents the expansion of the air volume in the system which the water meter would otherwise measure as water volume.

Other possible uses include protecting the plumbing system from damage due to pressure surges or shockwaves, preventing backflow, mitigating overly high pressure downstream, and potentially eliminating air hammering when installed downstream of an air hammering location.

Description. The Flow Management Valves are constructed of various materials used in plumbing applications, including acetyl and stainless steel. It replaces a small section of existing pipe and consists of a main body with plumbing connections at both ends. It is available in multiple sizes to match most standard water pipe sizes.

Supporting Documents.

1. OTCR1 application.
2. Listing/Certifications
3. Standards
4. Product Literature
5. Installation Instructions
6. Statement of FMV Maintenance

The NYC Construction Codes recognizes multiple types of valves used in plumbing systems. However, the Code does not prescribe requirements for Flow Management Valves.



Therefore, pursuant to AC 28-113.2.2, the Office of Technical Certification and Research (OTCR) has evaluated flow management valves as an alternative. Accordingly, an acceptable alternative must comply with the intent of the code and must be equivalent of that prescribed in the code in quality, strength, effectiveness, fire resistance, durability, and safety. OTCR's evaluation of the FMV concluded it is an acceptable alternative to the code based on the following:

Functionality testing was performed by Texas A&M Engineering Experiment Station to evaluate for equivalent safety and performance based on flow rates, pressure surges, air bubble test, includes the following:

- Flow rate tests indicate a rise in upstream pressure and a fall in downstream pressure, reduced system flow rate, and reduced volume recorded by water meter for a given duration.
- Pressure surge tests indicate a decrease in downstream and upstream pressure spikes, a decrease in the volume of fluid recorded by the water meter for a given duration. The report recommends a maximum pressure of 250 psi with a factor of safety of 4.
- Air bubble tests indicate reduced air bubbles recorded in the system compare to when FMV wasn't introduced in the system.
- Air tests indicate FMV reduced the flow of air in the piping system thereby preventing rise in water meter reading.
- Safety test results indicate the FMV can tolerate and reduce the effect of water pressure spikes.

Effects on safe drinking water was evaluated in accordance with NSF/ANSI 61, Standard for Safe Drinking Water. The FMV test demonstrated compliance with NSF 61.

Additionally, the Flow Management Valve shall comply with additional provisions of the NYC Construction Codes and the following applicable provisions:

A. Design

1. The FMV shall be designed in accordance with the NYC Construction Codes, manufacturer's installation instructions, the conditions of the required listing and the conditions of this bulletin.

B. Installation Requirements

1. Installation requirements shall be in accordance with the NYC Construction Codes, manufacturer's installation instructions, the conditions of the required listing, and the conditions of this bulletin.

C. Labeling

1. FMV shall be labeled as per **28-113.4** All shipments and deliveries of materials shall be accompanied by a certificate or label certifying that the materials shipped or delivered are equivalent to those tested and approved.



In the event of non-compliance with any of the requirements listed above or unresolved system failure during operation, the flow management valve will be required to be removed at the owner's expense. An audit may be performed to verify compliance.

This OTCR Final Acceptance Letter will be scanned and included in the Departments' BSCAN Virtual Job Folder as part of the project record. Please refer to the above referenced OTCR Submittal Code in any future correspondence.

Regards,

Mohammad Ahasan

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OTCR Project Manager

Cc: Alan Price, P.E., Director, OTCR, NYC DOB
Joseph Ackroyd, P.E., Assistant Commissioner, Technical Affairs & Code Development, NYC DOB
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