



Missouri Department of Health and Senior Services

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Richard C. Dunn
Director



Bob Holden
Governor

July 30, 2004

Mr. Mark Jones, P.E.,
Technical and Regulatory Manager
Fralo Plastech
One General Motors Drive
Syracuse, NY 13206

FILE COPY

Dear Mr. Jones:

This office is in receipt of your letter requesting a review of the Fralo Plastech septic tank. We also received detail drawings, tank specifications for Missouri, and the IAPMO Testing and Services Test Report. The Missouri Department of Health and Senior Services (DHSS) does not endorse any brand name line of products or any specific model. However, if a proposed onsite sewage disposal system design and the system components comply with the Missouri Minimum Construction Standards, a local administrative authority can approve construction permit applications for specific sites. My staff has reviewed the submitted polyethylene septic tank information and IAPMO Test Report using 19 CSR 20-3.060, section (4) of the Missouri Minimum Construction Standards as a reference. The review is summarized below.

Although, specifications, drawings, and the test report were for tanks ranging from 750 gallons to 1,500 gallons, the minimum septic tank volume allowed in Missouri is 1,000 gallons. The 750-gallon tank volume would only comply with minimum standards for applications in Missouri if used in series to meet the total septic tank volume requirements.

Paragraph (4)(A)1 requires all tanks to be watertight regardless of material or method of construction. Based on water tests of one sample of each size tank according to IAPMO septic tank standards, the tanks comply with this requirement. In addition, local administrative authorities in Missouri can require watertight testing of any tank(s) installed as part of a permitted system. One such test described by the standards, in 19 CSR 20-3.060(6)(G)3D(I), would also test the watertightness of any attached risers.

According to paragraphs (4)(A)1 and 2, tanks must be designed and constructed to withstand all lateral earth pressures under saturated soil conditions with the tank empty; and be designed and constructed to withstand a minimum of two feet (2') of saturated earth cover above the tank top. According to the test report the tank design will withstand an earth load of not less than 500 pounds per square foot when the burial depth does not exceed 3-feet. Therefore, based on the IAPMO test report, the tank design complies with load requirements.

www.dhss.state.mo.us

The Missouri Department of Health and Senior Services protects and promotes quality of life and health for all Missourians by developing and implementing programs and systems that provide: information and education, effective regulation and oversight, quality services, and surveillance of diseases and conditions.

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Mr. Mark Jones, P.E.,

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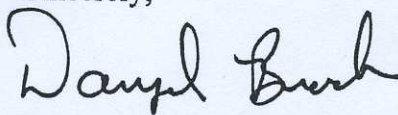
Paragraph (4)(A)2 also states that tanks must not be subject to excessive corrosion or decay. The polyethylene used in the manufacture of these tanks complies with applicable IAPMO and ASTM Standards and is reported to have properties of high corrosion resistance.

Following is a discussion of inlet and outlet baffle requirements of subsection 19 CSR 20-3.060(4)(B) where compliance of these tanks is an issue. Paragraph 7 requires the inlet baffle to extend at least six inches but no more than twenty percent of the total liquid depth below the liquid surface. According to the IAPMO test report, the inlet apparently extends 12 inches or 30 percent below the liquid level. However, based on the specification summary for Missouri, the inlet tee extends six inches below the liquid level, which would comply. Paragraph 8 requires the outlet baffle and baffles [or opening] between compartments to extend below the liquid surface a distance equal to 40% of the liquid depth and to extend at least six inches above the liquid surface. The IAPMO test report indicates the outlet tee apparently extends 12 inches below and 5 inches above the liquid level and the opening depth is not reported. Based on the specification summary for Missouri, the outlet tee extends 16 inches below and 6 inches below the liquid level, which would comply. However, the specifications and partition drawing indicate the opening depth between compartments is 8 to 12 inches below the liquid depth. Therefore, the opening between compartments does not comply with 19 CSR 20-3.060(4)(B)8.

Based on the specifications and testing information available, provided the inlet and outlet baffles comply with Fralo's Missouri specifications and the criteria in 19 CSR 20-3.060(4)(B)7 and 8, the Fralo Plastech single compartment tank models ST 1060, ST 1250, and ST 1500 would comply with the Missouri Minimum Construction Standards. Similarly, the single compartment tank model ST 750 would comply with the standards for sewage tanks; however, the volume is inadequate for a septic tank unless used in series with an additional tank. Provided the invert depth of the opening between the compartments complies with the criteria in 19 CSR 20-3.060(4)(B)8, the two compartment tanks would comply the Missouri Standards.

If you have questions, please feel free to contact James Gaughan or me at (573) 751-6095.

Sincerely,



Daryl Brock, Chief
Environmental Health and Safety Unit
Section for Environmental Public Health

DB:JG:lcp

Enclosure

c. James E. Gaughan, Section for Environmental Public Health