Geothermal Piping Systems Certification

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NSF Certification of Geothermal Piping Systems

Third party listing of geothermal piping systems provides engineers, regulators and users the assurance that products are independently certified to meet requirements for geothermal end use. Third party certification reduces potential liability, increases confidence and product acceptance, and helps to ensure product consistency in meeting all applicable requirements.

NSF/ANSI Standard 14 is the American National Standard for plastic piping system components and related materials and provides a major benefit by establishing the minimum physical, performance and health effects requirements for the plastic piping components. NSF/ANSI 14 establishes product testing, long-term strength and quality control requirements that are key to ensuring product performance in the field.

Testing

NSF's certification program is designed to combine all the critical aspects of geothermal piping. Outlined below are NSF testing requirements:

Geothermal plastic pipe requirements for U.S. market:

- Certification to NSF/ANSI Standard 14
- Hydrostatic Design Basis or Minimum Requires Strength per PPI TR-3
- Material requirements per PPI Statement Q
- Product standards design per NSF/ANSI Standard 14 (Example ASTM D3035)

geothermal

Geothermal plastic pipe requirements for Canadian market:

- Certification to NSF/ANSI Standard 14
- CSA B137.1
- CSA C448

Facility Inspections

NSF certification requires initial and ongoing facility inspections to ensure continued product compliance with applicable requirements. NSF's policies require certified geothermal pipe facilities receive three unannounced inspections annually the scope of which includes:

- Review of formulation
- Review of manufacturing process
- Verify use of authorized raw materials
- Verify and observe quality control requirements
- Sampling of product for monitoring testing
- Review product marking
- Verify product complies with standards and NSF policies

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Quality Control Requirements for Polyethylene (PE) Pipe

Standard 14 requires manufacturers to perform critical quality control testing at the production facility at specified frequencies. In addition to quality control requirements established by the product design standards, the following is an example of requirements for PE pipe:

Test	Minimum Frequency
Burst pressure	24 hours
Dimensions, inner diameter or outer diameter	2 hours
Dimensions, wall thickness	2 hours
Sustained pressure at elevated temparture	Annually
Environmental stress crack resistance	Annually

Monitoring testing

During the facility inspections, samples of certified products are collected by NSF from production or inventory for annual monitoring testing to all applicable requirements. NSF provides a detailed report that summarized the results of the product testing. Monitoring testing combined with unannounced facility inspections, and required quality control testing document continued product compliance.

Contact

For more information on NSF certification of geothermal piping systems, call 1-800-NSF-MARK (800-673-6275), +1-734-769-8010, email plumbing@nsf.org or visit us at www.nsf.org/info/plumbing.

About NSF

NSF International, The Public Health and Safety Company™, a not-for-profit, non-governmental organization, is the world leader in standards development, product certification, education, and risk-management for public health and safety. For 60 years, NSF has been committed to public health, safety, and protection of the environment. While focusing on food, water, indoor air, and the environment, NSF develops national standards, provides learning opportunities through its Center for Public Health Education, and provides third-party conformity assessment services while representing the interests of all stakeholders. The primary stakeholder groups include industry, the regulatory community, and the public at large.