



INSTALLATION GUIDE

RESIDENTIAL SPRINKLERS

PRODUCT NAME

Viking Residential Installation Guide

MANUFACTURER

The Viking Corporation
210 N. Industrial Park Road
Hastings, Michigan 49058 USA
Telephone: (616) 945-9501
(877) 384-5464

Fax: (616) 945-9599

e-mail: techsvcs@vikingcorp.com

RESIDENTIAL INSTALLATION GUIDE

Residential sprinkler systems must be designed and installed in accordance with the latest published standards of the National Fire Protection Association, Viking technical data, and provisions of governmental codes, ordinances, and standards. The Viking "Residential Installation Guide" provides recommendations for those types of installations that are not specifically covered by the standards. At this time, The Viking Corporation has completed fire testing for residential occupancies with sloped ceilings up to and including pitches of 6/12 (26.6°).

Where documentation for residential sprinkler systems does not exist, information contained in the Guide is based on NFPA 13, "Standard for the Installation of Sprinkler Systems". NFPA 13 is based on extensive fire test data for standard sprinklers and sound engineering principles, which have resulted in an excellent record for sprinkler system success.

Residential Fire Protection Systems must be designed and installed only by those who are completely familiar with the appropriate standards and codes, and thoroughly experienced in fire protection design, hydraulic calculations, and sprinkler system installation. Final acceptance and approval of all residential fire protection systems is the responsibility of the Authority Having Jurisdiction. Acceptance and application of information shown in the Viking "Residential Installation Guide" is the responsibility of the Authority Having Jurisdiction.

RESIDENTIAL SPRINKLERS

Viking residential sprinklers are special purpose spray sprinklers intended for use in the following occupancies: one- and two-family dwellings with the fire protection sprinkler system installed in

accordance with NFPA 13D, residential occupancies up to four stories in height with the fire protection system installed in accordance with NFPA 13R, and residential portions of any occupancy with the fire protection system installed in accordance with NFPA 13.

Residential sprinklers are equipped with "quick response" heat-sensitive operating elements designed to respond individually and quickly to a specific high temperature. During fire conditions, the heat-sensitive operating element fuses or shatters, releasing the pip cap and sealing assembly. The water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform, high-wall wetting spray pattern consisting of fine water droplets.

The combined characteristics of quick response with the specific spray pattern of the residential sprinklers improve life safety by prolonging the time available for escape and evacuation of occupants.

RESIDENTIAL SPRINKLER LISTINGS

Viking residential sprinklers listed by Underwriters Laboratories have passed fire tests designed to represent fire conditions for the sprinkler's listed area of coverage. The standard for residential sprinkler performance and spray patterns are printed in Underwriters Laboratories Publication UL 1626, "Residential Sprinklers for Fire Protection Service". All listed Viking residential sprinklers meet or exceed the performance requirements and spray pattern criteria for their listed areas of coverage.

NFPA standards allow use of residential sprinklers with rates, design areas, areas of coverage, and minimum design pressures other than those specified in the standards when they have been listed for such specific residential installation conditions. For listed areas of coverage, technical data, and specific design and installation instructions, refer to the appropriate Viking technical data page for the sprinkler model used.

INSTALLATION

Viking residential sprinklers are to be installed in accordance with the appropriate standards of the National Fire Protection Association, the Viking "Residential Installation Guide", and provisions of governmental codes, ordinances, and standards whenever applicable. **Final approval and acceptance**

of all residential sprinkler installations must be secured from the Authority Having Jurisdiction. For specific design and installation instructions, refer to the appropriate Viking technical data page for the sprinkler model used.

TYPES OF SYSTEMS

Viking residential sprinklers are intended for use on wet systems only. Do not use Viking residential sprinklers on dry systems unless specifically allowed by recognized Installation Standards or the Authority Having Jurisdiction.

AREAS OF COVERAGE

Viking residential sprinklers may be listed for more than one area of coverage. Suggested practice in selecting area of coverage is to select the one that can be adequately supplied by the available water supply and still allow for the installation of as few sprinklers in a compartment as possible while observing all guidelines pertaining to obstructions and spacing. This maximizes the use of the available water supply, which is often limited on residential fire protection systems. After selecting an appropriate area of coverage, sprinklers must be spaced according to guidelines set forth in the Installation Standards.

SPACING

Residential sprinklers must be located not more than 1/2 the listed spacing nor less than 4" (102 mm) from walls, partitions, or obstructions as defined in the standards. Locate adjacent sprinklers no farther apart than the listed spacing. For guidelines concerning spacing of residential sprinklers near beams, obstructions, heat generating devices, and on sloped ceilings, refer to the appropriate NFPA standard and the Viking "Residential Installation Guide".

POSITION

Deflectors of Viking residential pendent sprinklers must be located between 1" and 4" (between 25 mm and 102 mm) below smooth ceilings. Install pendent sprinklers in the pendent position only. Viking residential horizontal sidewall sprinklers must be installed in accordance with their individual listings regarding deflector distance below smooth ceilings. Refer to technical data page for the residential horizontal sidewall sprinkler model to be used. Install horizontal side-



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wall sprinklers in the horizontal position only. Deflectors of the residential pendent and horizontal sidewall sprinklers **must** be installed parallel with the ceiling.

WATER SUPPLY REQUIREMENTS

All Viking residential sprinkler listings indicate minimum water supplies required for each area of coverage listed. If the actual area of coverage is less than the listed area of coverage, use the minimum water supply for the next larger area of coverage listed. Do not interpolate. Residential sprinkler systems must be hydraulically calculated according to NFPA standards to verify that the water supply is adequate for proper operation of the sprinkler. At least two sets of calculations are required. Hydraulic calculations are required to verify adequate water supply at the hydraulically most remote single sprinkler when it is operating at the minimum gpm and psi listed for single sprinkler operation for the the sprinkler model used. Consult the appropriate standards and the Authority Having Jurisdiction to determine the number of sprinklers to hydraulically calculate to verify adequate water supply for multiple sprinkler operation. For these calculations, use the minimum gpm and psi listed for multiple sprinkler operation for the sprinkler model used.

OBSOLETE