FOAM PRODUCT SPECIFICATION

1. CONCENTRATE CONTROL VALVE ..... Page Foam 60a
Foam concentrate control valves that are to be supplied by AFFF or AR-AFFF shall utilize a 90° pattern or straight through type of deluge valve manufactured with a corrosive resistant Halar coating. Concentrate control valve shall be externally resettable by hydraulic means. The inlet and outlet connections of deluge valve can be flanged by flanged, flanged by grooved (3"–6") or threaded (2"). Concentrate control deluge valve shall have a working pressure of 250 PSI. Halar Coated Concentrate Control Deluge Valve manufacturer to be The Viking Corporation. Model shall be a model E-2, E-4, or F-2. (No Substitutions Allowed)

2. CONCENTRATE CONTROL VALVE PRIMING CONNECTION ..... Page Foam 61a
The separate priming connection will consist of a ½" ball valve, ½" "Y" strainer, 1/8" restricted orifice, ½" spring loaded check valve, and Pressure Operated Relief Valve (PORV). Concentrate control valve trim shall be compatible and installed following the manufacturer's installation instructions. (No Substitutions Allowed)

3. 1% AFFF FOAM CONCENTRATE ..... Page Foam 100a
Foam concentrate shall be listed for protection of immiscible (hydrocarbon) flammable and combustible liquids. Foam concentrate shall be a synthetic aqueous film forming foam (AFFF) concentrate. AFFF concentrate shall be listed for proportioning at 1 part (1%) concentrate to 99 parts (99%) water. One percent AFFF concentrate shall be listed for use with fresh, sea or brackish water supplies. 1% AFFF shall be listed with the proportioner installed. Concentrate shall be UL listed. Concentrate shall be procured through Viking Corporation. (No Substitutions Allowed)

4. 3% AFFF FOAM CONCENTRATE INDUSTRIAL GRADE ..... Page Foam 101a
Foam concentrate shall be listed for protection of immiscible (hydrocarbon) flammable and combustible liquids. Foam concentrate shall be a synthetic aqueous film forming foam (AFFF) concentrate. AFFF concentrate shall be listed for proportioning at 3 parts (3%) concentrate to 97 parts (97%) water. 3% AFFF concentrate shall be listed for use with fresh, sea or brackish water supplies. 3% AFFF shall be listed with the proportioner installed. Concentrate shall be UL listed. Concentrate shall be procured through Viking Corporation. (No Substitutions Allowed)

5. 3% AFFF MIL-SPEC FOAM CONCENTRATE ..... Page Foam 102a
Foam concentrate shall be listed for protection of immiscible (hydrocarbon) flammable and combustible liquids. Foam concentrate shall be a synthetic aqueous film forming foam (AFFF) concentrate. AFFF concentrate shall be listed for proportioning at 3 parts (3%) concentrate to 97 parts (97%) water. 3% AFFF concentrate shall be listed for use with fresh, sea or brackish water supplies. 3% AFFF shall be listed with the proportioner installed. Concentrate shall meet or exceed U.S. military specification MIL F24385F. Concentrate shall be UL listed. Concentrate shall be procured through Viking Corporatio. (No Substitutions Allowed)

6. 3% AR-AFFF FOAM CONCENTRATE ULTRA GUARD ..... Page Foam 104a
Foam concentrate shall be listed for protection of immiscible and miscible (hydrocarbon and alcohol) flammable and combustible liquids. Foam concentrate shall be a synthetic aqueous film forming foam (AFFF) concentrate. AR-AFFF concentrate shall be listed for proportioning at 3 parts (3%) concentrate to 97 parts (97%) water for hydrocarbon or alcohol type fuels. 3% AR-AFFF concentrate shall be listed for use with fresh, sea or brackish water supplies. 3% AR-AFFF shall be listed with the proportioner installed. Concentrate shall be UL listed. Concentrate shall be procured through Viking Corporation. (No Substitutions Allowed)

7. 2% HIGH-EXPANSION FOAM CONCENTRATE ..... Page Foam 105a
Foam concentrate shall be listed for protection of immiscible (hydrocarbon) flammable and combustible liquids. Foam concentrate shall be a synthetic aqueous film forming foam (AFFF) concentrate. AFFF concentrate shall be listed for proportioning at 2 parts (2%) concentrate to 98 parts (98%) water. 2% AFFF concentrate shall be listed for use with fresh, sea or brackish water supplies. 2% AFFF shall be listed with the proportioner installed. Concentrate shall be UL listed. Concentrate shall be procured through Viking Corporation. (No Substitutions Allowed)

8. SPRINKLERS FOR USE WITH FOAM ..... Page Foam 130a
Fire sprinklers used in a foam/water sprinkler system shall be UL listed and FM approved with the foam concentrate utilized with the proportioning system. The fire sprinklers installed shall have a minimum density application for the fuel or most volatile flammable or combustible liquid being protected. Fire sprinklers, foam concentrate, proportioning devices and riser components shall be manufactured by Viking Corporation and/or Chemguard.

Minimum listed densities or densities indicated by installation standards, whichever is more stringent, shall be adhered to. Fire sprinklers shall be manufactured by The Viking Corporation. (No Substitutions Allowed)

9. CONSTANT FLOW HANDLINE NOZZLE..... Page Foam 131a
Handline nozzles shall be a combination fog/straight stream. Handline nozzle shall be of brass construction with constant single flow, flush mechanism, durable chrome plated ball shut-off and dual trunion drive on ball shut-off. Handline nozzle shall be equipped with a 1½" FNST inlet. Handline nozzle shall be equipped with a large rubber bumper and large rubber handle with removable pistol grip. Handline nozzle shall be procured through Viking Corporation. (No Substitutions Allowed)

10. "RATTLER" HAND WHEEL MONITOR..... Page Foam 133a
Monitors shall be of manual or fixed operation. Vertical travel is controlled by adjustable hand wheel 90° above to 60° below horizontal. Horizontal plane easily adjustable then locked in position by a locking mechanism. Fixed monitor shall have a 3" or 4" ANSI flanged inlet with a 2½" MNST male discharge outlet. Fixed monitors shall have a 3" waterway. Fixed monitor shall have a flow rate up to 1250 gallons per minute. Monitors shall have a full 360° rotation with positive twist lock. Monitors shall be a procured through Viking Corporation. (No Substitutions Allowed)

11. "BRAHMA" MONITOR ..... Page Foam 134a
Monitors shall be of manual operation. Fixed monitor shall have a 3" or 4" ANSI flanged inlet with a 2½", or 3½", discharge outlet. Fixed monitors shall have a 3" or 4" waterway. Fixed monitor shall have a flow rate from 1250 to 2000 gallons per minute. Fixed monitor shall be tiller bar or worm gear operated. Fixed monitors shall have a 360° rotation with positive lock. Vertical travel is 150°. Fixed monitors shall be provided with a master stream nozzle with a locking mechanism. Monitors shall be procured through Viking Corporation. (No Substitutions Allowed)

12. SELF EDUCTING FOAM NOZZLE..... Page Foam 135a
Monitor nozzles shall be a combination fog/straight stream nozzle. Monitor nozzle shall be of all brass construction with adjustable straight stream throw or 180° fog. Monitor nozzle shall have a 2½" female threaded inlet. A grease zert shall be provided on the nozzle bodies for lubrication. Monitor nozzles shall be of the same manufacturer as the monitor. Monitor nozzles shall be procured through Viking Corporation. (No Substitutions Allowed)

13. CONSTANT FLOW MONITOR NOZZLE ..... Page Foam 136a
Monitor nozzles shall be a combination fog/straight stream nozzle. Monitor nozzle shall be of all brass construction with adjustable straight stream throw, narrow fog or wide fog. Monitor nozzle shall have a 2½" female threaded inlet. Flow remains constant in all patterns. Flow rate to be 100 PSI at 300 GPM, 350 GPM, 500 GPM, 700 GPM, 750 GPM or 1000 GPM. Monitor nozzle shall have built-in grid as stream shaper for maximum reach. Monitor nozzles shall be of the same manufacturer as the monitor. Monitor nozzles shall be procured through Viking Corporation. (No Substitutions Allowed)

14. ADJUSTABLE FLOW MONITOR NOZZLE ..... Page Foam 137a
Monitor nozzle shall be of all brass construction with full fog spray. Monitor nozzle shall have a 2½" female threaded inlet. Flow rate to be 100 PSI at 500 GPM, 750 GPM, 1000 GPM or 1250 GPM range. Flow pattern from wide angle to straight stream. Monitor nozzles shall be of the same manufacturer as the monitor. Monitor nozzles shall be procured through Viking Corporation. (No Substitutions Allowed)

15. OSCILLATING MONITOR ..... Page Foam 138a
Oscillating monitors shall have a 4" flanged inlet and shall be of a compact design. Oscillating monitors shall require only 5 gpm water flow to provide efficient oscillation. A ¾" garden hose connection shall be provided for a test connection to set the oscillation mechanism without flow through the monitor. Oscillation speed shall be adjustable from 0° to 30° per second. Oscillating monitors shall have a full 360° continuous rotation when used manually. Monitor shall be adjustable from 40° below horizontal to 80° above horizontal. Arc of oscillation shall be adjustable from 0° to 120°. Oscillator assembly shall be provided with a self-cleaning water inlet strainer by manufacturer. Oscillating monitor shall be suitable for operating pressures from 40 psi to 200 psi. Oscillating monitor shall be manufactured with an integral nozzle rated for 300, 500,750, 1000, 1250, 1300, 1400, 1500, 1600, 1700, 1800, 1900 or 2000 gallons per minute at 50 or 100 psi. Oscillating monitor shall be procured through Viking Corporation. (No Substitutions Allowed)

16. GRATE NOZZLE..... Page Foam 140a or 141a
Foam solution delivery device shall be a fixed discharge device located in the floor drain trench system. Nozzle and trench grate shall be of one manufacturer. Nozzle shall have no moving parts and shall not be a "pop-up" style nozzle. Nozzle shall be constructed of stainless steel and must be fixed in place to the receiving trench grate. Grate shall be constructed of ductile iron and shall be designed to protect nozzle from capturing debris. Nozzle shall have a K factor of 7, 12 or 23.4. Trench grates to receive the nozzle shall be available in a 20" and 26" length to accommodate 18" and 24" wide trench drains. Nozzle shall be capable of producing a foam discharge pattern of 90°, 180° or 360° at a radius of 23'. The apex of discharge shall not exceed 24". Trench drains to receive the trench nozzle grate assembly shall not be located at a distance exceeding 50' on center. Trench nozzle shall be located at a maximum of 25' on center within the trench drain. Trench nozzle and trench grate shall be purchased as an assembly. Trench drain nozzle/grate assembly shall be a Viking Grate Nozzle assembly. (No Substitutions Allowed)

17. HIGH-EXPANSION FOAM GENERATOR ..... Page Foam 150a
High-expansion foam generators require no outside source of power. Standard CFM from 1000 to 26,400. High-expansion foam generators shall be constructed of mild steel and painted in standard red polyeurethane enamel paint. Perforated screens shall be stainless steel. High-expansion foam generators are installed in vertical or horizontal configurations. No strainer is required for Chemguard High-Expansion foam generators. High-expansion foam generators to be procured through Viking Corporation. (No Substitutions Allowed)

18. HANDLINE EDUCTOR ..... Page Foam 160a
Handline proportioning systems that function on a vacuum induction shall utilize a handline eductor designed for variable pressure. Handline eductor shall have a brass body with standoffs affixed to the eductor for handling. Handline eductor shall be listed for use with the foam concentrate being utilized. Handline eductor shall have a listed pressure loss through the device no greater than 35%. Handline eductor shall be utilized on foam/water handline applications. Eductor and foam concentrate shall be of one manufacturer. Handline eductor shall be procured from The Viking Corporation. (No Substitutions Allowed)

19. FIXED EDUCTOR ..... Page Foam 161a
Fixed proportioning systems that function on a vacuum induction shall utilize a fixed eductor designed for variable pressure. Fixed eductor shall have a brass body with standoffs affixed to the eductor for mounting. Fixed eductor shall be listed for use with the foam concentrate being utilized. Fixed eductor shall have a listed pressure loss through the device no greater than 35%. Fixed eductor shall be utilized on small foam/water deluge applications. Eductor and Deluge Valve shall be of one manufacturer. Fixed eductor shall be procured from The Viking Corporation. (No Substitutions Allowed)

20. CONCENTRATE CONTROLLER (PROPORTIONER)..... Page Foam 170a
Concentrate controller shall be a UL listed and/or FM approved device. Concentrate controller shall be listed and approved with the foam concentrate to be proportioned and the foam bladder tank. Concentrate controller shall be a brass, modified venturi type device which works on a metered pressure drop principle. The concentrate controller shall be listed with a nominal orifice plate size for the foam concentrate to be proportioned. Concentrate controller shall be procured through Viking Corporation. (No Substitutions Allowed)

21. IN-LINE BALANCED PROPORTIONER (ILBP) ..... Page Foam 171a
In-line balanced proportioner (ILBP) assembly shall be factory assembled and include a listed and approved concentrate controller, brass connecting nipples, duplex gauge, braided sensing lines and an internally balancing designed spool valve. ILBP shall have a working pressure for incoming foam concentrate of 200 PSI. Spool balancing valve shall be equipped with a copper sensing tube for the primary function of sensing flowing water pressure past the concentrate controller and adjusting the flow of foam through internal port openings by allowing the upper valve disc to raise or lower the spool assembly connected to the upper valve disc. ILBP shall work on a minimum 15 PSI differential pressure between the higher incoming foam concentrate and the lower flowing water pressure inlet to the concentrate controller. Braided sensing lines shall be installed from the duplex gauge to the foam and water supplies. Duplex gauge shall display water pressure with a needle black in color and display foam pressure with a needle red in color. A braided sensing line for water pressure shall be installed from a ¼" outlet on the system riser provided below the concentrate controller by the fire sprinkler contractor. ILBP shall be UL listed and FM approved for use with bladder tanks and foam pumps and as an assembly with the foam concentrate. ILBP shall be In-line Balanced Pressure Proportioner procured through Viking Corporation. (No Substitutions Allowed)

22. ULTRA-WIDE PROPORTIONER..... Page Foam 172a
Proportioner shall be of bronze construction with a 6" flanged water inlet and solution outlet and a 2" concentrate inlet. Proportioner shall have an internal water float operated against a spring inside a tapered throat. Proportioner flow to be 20 to 2500 GPM. Proportioner to procured through Viking Corporation. (No Substitutions Allowed)

23. FOAM CHAMBERS ..... Page Foam 191a
Foam chambers used in the protection of floating roof top tanks or fixed cone roof tanks shall UL listed as foam water solution discharge devices. Foam chambers shall be equipped with a vapor seal cartridge constructed of stainless steel, graphite, and Viton. Foam chamber shall be equipped with a split type deflector assembly. Foam chamber shall employ an integral foam maker at the inlet of the device. Foam chamber shall have a removable top affixed to the device for access to the vapor seal. Foam chamber shall be self-draining to eliminate the possibility of freezing. Foam chamber shall be listed for both hydrocarbon and alcohol fuels. Foam chamber shall be equipped with a jet receiver sized by the manufacturer depending upon flow and pressure. Foam Chamber shall be procured through Viking Corporation. (No Substitutions Allowed)

24. FOAM MAKERS..... Page Foam 192a
Foam makers employed in the protection of dike areas or sumped areas shall be flanged by flanged or flanged by threaded. Foam makers shall be equipped with an inlet orifice and inlet air strainer. Inlet orifice shall create a venturi effect to draw in air to mix with foam/water solution. Foam maker discharge shall distribute enhanced foam solution to a discharge device, either a deflector or 45° ell directed at dike wall. Foam maker orifice plate shall be sized based on supply pressure and flow rate desired. Foam makers shall be procured through Viking Corporation. (No Substitutions Allowed)

25. MOBILE FOAM CART ..... Page Foam 200a
Mobile foam cart shall be manufactured to hold 36 gallons of foam concentrate. A 60 gpm or 95 gm in-line educator, 60 gpm or 95 gpm handline nozzle and 50' of 1-1/2" rubber lined single jacket fire hose shall be included. Unit shall have 1-1/2" NST connection for fire hose from suitable water supply. Nozzle shall include ball shut-off. Mobile cart to have 2 – 3" x 16" pneumatic tires. Mobile foam cart to be procured through Viking Corporation. (No Substitutions Allowed)

26. FOAM HOSE REEL STATION ..... Page Foam 201a
Foam hose reel station shall be manufactured to hold 36 or 60 gallons of foam concentrate. Tank shall have ½" drian and 4" fill opening. A 95 gpm in-line eductor shall come pre-piped to a fixed mounted continuous flow hose reel containing 100' of 1-1/2" hard rubber hose and a handline nozzle with standard or pistol grip and ball shut-off. Foam Hose station manufacturer to procured through Viking Corporation. (No Substitutions Allowed)

27. CONTINUOUS FLOW HOSE REELS ..... Page Foam 202a
Continuous flow hose reels shall be manual re-wind with 1-1/2" diameter hose with 50, 75, 100, 125, 150, 175 or 200 foot length. A 95 GPM hand line nozzle shall also be included. Continuous flow hose reel manufacturer to be procured through Viking Corporation. (No Substitutions Allowed)

28. FOAM BLADDER TANK ..... Page Foam 240a
Balanced pressure proportioning systems shall utilize an ASME code pressure vessel listed for use with the foam concentrate and proportioning method utilized. Foam bladder tank incorporate a Buna-N bladder, non-pressurized exterior level indicator. Foam bladder tank shall have 2" threaded connections for the water inlet and concentrate discharge for bladder tanks up to and including 500 gallon capacity. Foam bladder tanks shall have a 3" threaded connection for the water inlet and a 3" grooved connection for the concentrate discharge for bladder tanks over 600 gallon capacity. Foam bladder tank shall adhere to the requirements set forth in NFPA 11, The Standard for Low-Expansion Foam and NFPA 16, Standard for the Installation of Foam-Water Sprinkler Systems and Foam-Water Spray Systems. Foam bladder tank shall be UL listed and FM approved. Foam bladder tank shall be procured through Viking Corporation. (No Substitutions Allowed)

29. ATMOSPHERIC STORAGE TANK ..... Page Foam 241a
Atmospheric storage tank shall be crosslinked polyethylene in vertical configuration. Standard operating pressure to be 100 psi. Atmospheric storage tank to be equipped with a pressure vacuum vent. Atmopsheric storage tank to be procured from Viking. (No Substitutions Allowed)