Addendum No. 2 dated 4/3/12 to
Harvel Installation and Design Manual (HFS-3) dated 01/01/09

Unfinished Basements with Exposed Composite Wood Joists in accordance with NFPA 13D

GF Harvel CPVC fire sprinkler piping products may be installed without protection (exposed) in unfinished basements in accordance with NFPA 13D when subject to the following additional limitations:

1. *The ceiling shall be horizontal and constructed utilizing composite wood I-joists with a nominal depth of 11-7/8 inches or less on 24 inch centers.*

2. *The distance from the floor to the bottom of the composite wood I-joists shall be between 7 feet and 10 feet.*

3 *Listed residential pendent sprinklers with a maximum temperature rating of 155°F and a minimum K-factor of 4.9 are to be used for this type of installation. The maximum sprinkler spacing shall not exceed 16 feet. The maximum sprinkler coverage area is to be 16 feet by 14 feet spaced with the 16 foot dimension along the joists and the 14 foot dimension across the joists. Lesser areas are also permitted. The system is to be designed based upon the Listed flows for the sprinkler selected except that the flow for a single sprinkler or for multiple sprinklers flowing is to be not less than 13 gpm per sprinkler. The sprinklers are to be installed with their deflectors a maximum of 1-3/4 inches below the bottom of the composite wood I-joists in anticipation of future installation of a finished ceiling. (reference NFPA 13D, Section 8.2.4, 2010 Edition)*

4. *All system mains shall be run perpendicular to the joists. All branch lines shall be run parallel to the joists. Schedule 80 fittings shall be used for sizes 1-1/2 inch and larger.*

5. *All solvent cement joints shall be made with BlazeMaster One Step Solvent Cement (TFP-500, BM-5, FP-1000, or TFP-401).*

6. *When the total protected area exceeds 1,000 square feet, blocking shall be utilized to divide the area into individual compartments not exceeding 1,000 square feet. The maximum length along the joist shall not exceed 32 feet. When the length exceeds 32 feet, blocking shall be utilized. The blocking shall be constructed of minimum 1/2 inch plywood and shall be the full depth of the joists. It is acceptable for items such as piping, wires, ducts, etc. to penetrate the blocking. The gap between the item penetrating the blocking and the blocking should be minimized. For installations where the gap exceeds 1/4 inch, the gap shall be filled with insulation, caulking, or other suitable material.*

7. *When installing GF Harvel CPVC piping products perpendicular (system mains) to the composite wood I-joists, listed support devices for thermoplastic sprinkler piping or other listed support devices shall be used which mount the piping directly to the bottom of the composite wood I-joists. As an alternative to mounting the pipe and fittings below the composite wood I-joists, it is also acceptable to cut holes in the composite wood I-joists at or below the center of the depth of the composite wood I-joist for support – the holes should be oversized to allow for movement and located to not impair the structural integrity of the joists. Refer to the joist manufacturer's product data for specific instructions concerning the placement of any holes in the composite wood I-joists.*

⚠ CAUTION ***When drilling holes in the composite wood I-joists, the structural integrity must be maintained. Consult the Authority Having Jurisdiction (AHJ) or building code for requirements.***

8. *When installing GF Harvel CPVC piping products parallel (branch lines) to the composite wood I-joists, the pipe and fittings shall be installed in the cavity below the bottom of the ceiling and above the bottom of the joist. The branch lines shall be located at or below the center of the depth of the composite wood I-joist. The pipe shall be installed utilizing listed support devices for thermoplastic sprinkler piping or other listed support devices which mount the piping directly to nominal 2 inch wood blocking or listed support devices for thermoplastic sprinkler piping which offset the pipe a nominal distance of 11/2 in. from the composite wood I-joists.*

Use of GF Harvel CPVC piping products is limited to basements where the quantity and combustibility of contents is low and fires with relatively low rates of heat release are expected. For additional information regarding the assembly and installation of GF Harvel CPVC piping products, please refer to additional sections of GF Harvel CPVC Fire Sprinkler Piping Products installation and design manual.