



STAR SERVICE Inc.

Leif C. Wismar, P.E.
Mechanical Engineer

July 14, 2010

Landmark Corporation
935 N. State of Franklin Road
Johnson City, TN 37604

Reference: St. Tammany Parish Administration Building – Response to the Mechanical Inspectors Comments (Attachment “C”).

The below is a formal response to the Mechanical Inspector’s comments as he performed a courtesy walk through on 6/11/2010.

Building Review items:

Line item 1: “The City indicated that he had never seen PVC used in....”

Response: Schedule 80 PVC piping was installed in the Administration Building. This item was made known to all parties involved (General Contractor – NATCO, Architect/Design Firm – Dammon Engineering, and the Building Owner – St. Tammany Parish).

The 2006 International Mechanical Code allows for the use of PVC piping (see attached code reference Attachment “A”). A Letter was also obtained from IPEX USA, LLC confirming the application of the PVC product (see Attachment “B”).

Line item 2: “Mr. Walker stated testing of hydronic piping....”

Response: The hydronic piping was tested as per the 2006 International Building Code Section 1208.1. This testing was performed by William Hohenschutz of Star Service and witnessed by Mr. Walker on 9/14/2009 at 9:00am. The piping tested at 100 psi for a minimum of 15 minutes.

1208.1 General. *Hydronic piping systems other than ground-source heat pump loop systems shall be tested hydrostatically at one and one half times the maximum system design pressure, but not less than 100 psi (689 kPa). The duration of each test shall be not less than 15 minutes. Ground-source heat pump loop systems shall be tested in accordance with Section 1208.1.1.*

Line item 3: “Chilled water piping shall not be insulated....”

Response: The hydronic piping was tested as per the 2006 International Building Code Section 1208.1 on 9/14/2009 at 9:00am. No piping insulation was present at the time of the testing. After the testing was witnessed by the City, the pipe was insulated in preparation of system start-up.

If retesting of the hydronic piping is required by the City, this is not Star Service’s financial responsibility. Removal of insulation prior to retesting again is not the financial responsibility of Star Service.

Line item 4: “CPVC plastic pipe or fittings shall be solvent....”

Response: The hydronic piping was prepared and installed according to the 2006 International Building Code Section 1203.3.

1203.3.4 Solvent-cemented joints. Joint surfaces shall be clean and free of moisture. An *approved* primer shall be applied to CPVC and PVC pipe-joint surfaces. Joints shall be made while the cement is wet. Solvent cement conforming to the following standards shall be applied to all joint surfaces:

1. ASTM D 2235 for ABS joints.
2. ASTM F 493 for CPVC joints.
3. ASTM D 2564 for PVC joints.

Line item 5: “Penetrations shall be in accordance with”

Response: Wall penetrations and floor penetrations were excluded from Star Service’s Contract. Any new work or re-work concerning wall or floor penetrations is the not financial responsibility of Star Service.

1206.4 Pipe penetrations. Openings for pipe penetration in walls, floors or ceilings shall be larger than the penetration pipe. Openings through concrete or masonry building elements shall be sleeved. The annular space surrounding pipe penetrations shall be protected in accordance with the *International Building Code*.

Line item 6: “The City stated that since the building had set....”

Response: The hydronic piping was tested as per the 2006 International Building Code Section 1208.1 on 9/14/2009 at 9:00am. Star Service fulfilled their contractual responsibility. If retesting of the hydronic piping is required by the City, this is not Star Services financial responsibility. Removal of insulation prior to retesting again is not the financial responsibility of Star Service.

Line item 7: “Mr. Walker said the elevator shafts need....”

Response: Ventilation of the elevator shafts was not part of the Mechanical Scope of work. This line item should be directed to the Architectural/Design group on file for comment and review. Any additional work outside of the Star Service scope of work will accrue additional cost.

Line item 8: “The City indicated we need to install....”

Response: Emergency Drain pan float switches will be installed by Star Service for each Air Handling Unit.

Line item 9: “In reviewing the hydraulic elevator electrical room....”

Response: Cooling and ventilation of the hydraulic elevator shafts was not part of the Mechanical Scope of work. This line item should be directed to the Architectural/Design group on file for comment and review. Any additional work outside of the Star Service scope of work will accrue additional cost.

Line item 10: “Mr. Walker stated the Janitor closets....”

Response: Ventilation of the Janitors Closets was not part of the Mechanical Scope of work. This line item should be directed to the Architectural/Design group on file for comment and review. Any additional work outside of the Star Service scope of work will accrue additional cost.

Line item 11: “The City indicated that there should be room to remove....”

Response: The size of the Air Handling Units and the lack of Mechanical Room space were made known to all parties involved (General Contractor – NATCO, Architect/Design Firm – Dammon Engineering, and the Building Owner – St. Tammany Parish). The requested letter of waiver should be obtained by the Architectural/Design group on file.

Line item 12: “Mr. Walker stated that he was not sure the....”

Response: The location of the electrical transformers in the Mechanical Room should be addressed by the Electrical Contractor and the Architectural/Design group on file.

Line item 13: "Mr. Walker stated that the air handling units...."

Response: Smoke detectors in each Air Handling Unit should be installed by the Fire Alarm Company. This is not the financial responsibility of Star Service.

Please let me know if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read 'L. Wismar', with a long horizontal flourish extending to the right.

Leif C. Wismar, P.E.
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Star Service Inc.
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CHAPTER 12

HYDRONIC PIPING

SECTION 1201 GENERAL

1201.1 Scope. The provisions of this chapter shall govern the construction, installation, alteration and repair of hydronic piping systems. This chapter shall apply to hydronic piping systems that are part of heating, ventilation and air-conditioning systems. Such piping systems shall include steam, hot water, chilled water, steam condensate and ground source heat pump loop systems. Potable cold and hot water distribution systems shall be installed in accordance with the *International Plumbing Code*.

1201.2 Pipe sizing. Piping for hydronic systems shall be sized for the demand of the system.

SECTION 1202 MATERIAL

1202.1 Piping. Piping material shall conform to the standards cited in this section.

Exception: Embedded piping regulated by Section 1209.

1202.2 Used materials. Reused pipe, fittings, valves or other materials shall be clean and free of foreign materials and shall be approved by the code official for reuse.

1202.3 Material rating. Materials shall be rated for the operating temperature and pressure of the hydronic system. Materials shall be suitable for the type of fluid in the hydronic system.

1202.4 Piping materials standards. Hydronic pipe shall conform to the standards listed in Table 1202.4. The exterior of the pipe shall be protected from corrosion and degradation.

**TABLE 1202.4
HYDRONIC PIPE**

MATERIAL	STANDARD (see Chapter 15)
Acrylonitrile butadiene styrene (ABS) plastic pipe	ASTM D 1527; ASTM D 2282
Brass pipe	ASTM B 43
Brass tubing	ASTM B 135
Copper or copper-alloy pipe	ASTM B 42; ASTM B 302
Copper or copper-alloy tube (Type K, L or M)	ASTM B 75; ASTM B 88; ~ ASTM B 251
Chlorinated polyvinyl chloride (CPVC) plastic pipe	ASTM D 2846; ASTM F 441; ASTM F 442
Cross-linked polyethylene/aluminum/cross-linked polyethylene (PEX-AL-PEX) pressure pipe	ASTM F 1281; CSA CAN/CSA-B-137.10
Cross-linked polyethylene (PEX) tubing	ASTM F 876; ASTM F 877

(continued)

**TABLE 1202.4—continued
HYDRONIC PIPE**

MATERIAL	STANDARD (see Chapter 15)
Lead pipe	FS WW-P-325B
Polybutylene (PB) plastic pipe and tubing	ASTM D 3309
Polyethylene (PE) pipe, tubing and fittings (for ground source heat pump loop systems)	ASTM D 2513; ASTM D 3035; ASTM D 2447; ASTM D 2683; ASTM F 1055; ASTM D 2837; ASTM D 3350; ASTM D 1693
Polyvinyl chloride (PVC) plastic pipe	ASTM D 1785; ASTM D 2241
Steel pipe	ASTM A 53; ASTM A 106
Steel tubing	ASTM A 254

1202.5 Pipe fittings. Hydronic pipe fittings shall be approved for installation with the piping materials to be installed, and shall conform to the respective pipe standards or to the standards listed in Table 1202.5.

**TABLE 1202.5
HYDRONIC PIPE FITTINGS**

MATERIAL	STANDARD (see Chapter 15)
Brass	ASTM F 1974
Bronze	ASME B16.24
Copper and copper alloys	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B16.26; ASME B16.29
Gray iron	ASTM A 126
Malleable iron	ASME B16.3
Plastic	ASTM D 2466; ASTM D 2467; ASTM D 2468; ASTM F 438; ASTM F 439; ASTM F 877
Steel	ASME B16.5; ASME B16.9; ASME B16.11; ASME B16.28; ASTM A 420

1202.6 Valves. Valves shall be constructed of materials that are compatible with the type of piping material and fluids in the system. Valves shall be rated for the temperatures and pressures of the systems in which the valves are installed.

1202.7 Flexible connectors, expansion and vibration compensators. Flexible connectors, expansion and vibration control devices and fittings shall be of an approved type.



RE: IPEX PVC for Conveyance of Chilled Water

IPEX industrial PVC pipe and fittings can be used for chilled water applications to a minimum operating temperature of 40F.

Please see *Volume I: Vinyl Process Piping Systems* Technical manual for installation instructions.

For additional information please contact our technical department at (800) 463-9572.

Regards,



Steven Dolejsi P.Eng
Applications Engineer
IPEX USA, LLC

Minutes of City Inspectors Courtesy Walk Through

Meeting Date: 6/11/10

PROJECT: Saint Tammany Parrish Administrative Building

Date Distributed: 6/24/10

PERSON PREPARING AGENDA: Jim Mc Guire

Persons Attending:

Wayne Walker	City of Slidell Mechanical Inspector
Will Hohenschutz	Star Service, Inc
Mike Stalba	Landmark Corporation
Jim Mc Guire	Landmark Corporation

General Comments

The City Inspector Mr. Walker asked if Landmark had received a copy of the minutes of the meeting held called by Dammon on Wednesday 6/9/10.

The City expressed concern that there were no approved Mechanical drawings on site. Landmark indicated that they had been requested but not yet provided by the Project Designer. It is assumed that the Architect has those drawings and Landmark offered to call Dammon and request that they make the drawing available for the meeting.

Mr. Walker called his manager and was instructed to proceed with the review of the work without the approved plans in hand addressing those things that appeared not to comply with code.

Mr. Walker recommended that this meeting be held again with the approved documents in the near future. Landmark indicated that would be their intention also.

Building Review

The following is a list of items of concern that were discussed during the job walk:

1. The City indicated that he had never seen PVC used in a building above the third floor. He called his office and had someone check the code and he also did not see anything in the code that allows its use.

Mr. Hohenschutz indicated that schedule 80 PVC pipe allowed by the 2006 International Mechanical Code and was specified in their bid proposal to be used for chilled water lines.

2. Mr. Walker stated testing of hydronic piping must be performed in accordance with the 2006 International Building Code Section 1208.1 General Testing.

3. Chill water piping shall not be insulated prior to testing.
4. CPVC plastic pipe or fittings shall be solvent cemented or thread joints conforming to Section 1203.3.
5. Penetrations shall be in accordance with 2006 International Mechanical Code Section 1206A Pipe Penetrations.
6. The City stated that since the building had set idle for so long, the chilled water piping pressure test would need to be repeated.
7. Mr. Walker said the elevator shafts need to be ventilated with fire dampers on the lower louvers.
8. The City indicated we need to install drain line float shutdown switches in the air handler primary drain lines. Star agreed to do this, indicating it to be within their scope of work.
6. I reviewing the hydraulic elevator electrical room it was noted that it needs to have proper cooling and ventilation.
7. Mr. Walker state the Janitor closets need ventilation.
8. The City indicated that there should be room to remove the coils from the air handler / coil from the mechanical room without removing walls. He said he would accept a letter from the Parish waiving this requirement.
9. Mr. Walker stated that he was not sure the electrical transformers in the mechanical rooms were allowable as installed and he would have to defer to the Electrical Inspector.
10. Mr. Walker stated the air handling units need smoke detectors.

-End of Meeting Minutes -