

VIA FED EX

November 22, 2022

Allegheny County Health Department
Office of the Director
542 4th. Avenue
Pittsburgh, PA 15219

Attn: Dr. Debra Bogen – Director

Re: Shaler Area School District High School - Citation #758664 - Inadequate Ventilation of Chemical Storage

Dear Dr. Bogen:

Enclosed please find an Amended Appeal of Shaler Area School District to Citation by the Allegheny County Health Department per Citation 758664.

Sincerely,



John T. Vogel

JTV:cr
Enclosure

c: Mark S. Wolfgang, P.E., C.P.D., LEED AP^{BD+C}, CxP
Dr. Bryan E. O'Black, Deputy Superintendent
John Kaib, District Director of Building and Grounds

TADMS:11281209-1 014539-154663

ALLEGHENY COUNTY HEALTH DEPARTMENT HOUSING AND COMMUNITY AND ENVIRONMENTAL PROGRAM CITATION

IN RE:

: Appeal to Citation 758664

AMENDED APPEAL OF SHALER AREA SCHOOL DISTRICT



AMENDED APPEAL OF SHALER AREA SCHOOL DISTRICT TO CITATION BY THE ALLEGHENY COUNTY HEALTH DEPARTMENT PER CITATION 758664

AND NOW COMES the Appellant, the Shaler Area School District, through its attorneys, John T. Vogel and Tucker Arensberg, P.C., and files the within Amended Notice of Appeal to the Citation by the Allegheny County Health Department per Citation 758664.

1. The Appellant in this matter is the Shaler Area School District, a political subdivision of the Commonwealth of Pennsylvania with an administrative address of 1800 Mt. Royal Boulevard, Glenshaw, PA 15116. The District operates a High School at 381 Wible Run Road in Pittsburgh (Shaler Township), PA 15209

2. The Allegheny County Health Department Housing and Community and Environment Program ("ACHDHCEP") is a program of the Allegheny County Health Department ("ACHD" or "Health Department") located at 542 Fourth Avenue, Pittsburgh, PA 15219.

3. On or about October 31, 2022, the School District, through a letter to the Health Department, set forth a Notice of Appeal concerning the citations as described below. Pursuant to Article XI, Hearings and Appeals of the Allegheny County Health Department at Section 1104 (E) , the District is amending that Notice of Appeal as of right.

4. On or about October 5, 2022, on letterhead from ACHDHCEP, Environmental Health Specialist, Scott Nobbs, set forth that he conducted an inspection of the structure and premises at the Shaler Area High School. (See Exhibit A).

5. The inspection, which occurred on October 3, 2022, resulted in an Inspection Report that found three (3) alleged violations of "Chapter 171." (See *id.* at pages 2 and 3).

6. Upon information and belief the reference to Chapter 171 refers to "Chapter 171, Schools" which is part of Title 25 of the Pennsylvania Code (Environmental Protection), 25 Pa. Code, Chapter 171. (Exhibit B).

7. In the letter, the Report specifically set forth the alleged violations and required corrective actions:

- a) Citation 758664, Section Z01 D (001 0) which found a violation of Section 171.14: Inadequate ventilation of chemical, biological or other toxic materials. The "Remedy" for this violation was to "Provide an approved operating fume hood." (See Exhibit A at page 2).
- b) The Citation for the Violation further set forth the following Comments: "ROOM 207, UNDER WHICH CHEMICAL STORAGE ROOMS WERE IMPROPERLY VENTILATED."; and "ROOM 209, CHEMICAL STORAGE ROOM, FLAMMABLE STORAGE CABINET IS IMPROPERLY VENTILATED." Id.
- c) The Citation further stated that the District "PROVIDE ADEQUATE VENTILATION OF CHEMICAL STORAGE." Id.

8. Two other Citations were set forth: 758665, a violation of Section 171.14 (presumably of Title 25) which was an alleged broken malfunctioning water supply line; and Citation 758666, a violation of Section 171.13: fire evacuation plans not posted. Id. at pages 2 and 3. The matters raised in Citations 758665 and 758666 have been remedied.

9. The District objects to and appeals Citation 758664 because Pennsylvania Code Title 25, Chapter 171 does not specifically encompass ventilation of laboratories. Chapter 171.14 of the Code merely states in pertinent part: "In all rooms of the school, when mechanical ventilation is not provided, means shall be provided to insure adequate, natural ventilation."

10. There is no other wording in Title 25, Chapter 171 of the Code providing guidance as to what is considered inadequate ventilation of chemical or other toxic materials or what constitutes improper ventilation of flammable storage cabinets. This Code states only that

adequate, natural ventilation must be provided where mechanical ventilation is not provided. See generally Exhibit B for excerpt)from Title 25, chapter 171.14.

11. To the contrary the storage room and laboratory do have mechanical ventilation. Attached is the "As-Built" drawing of the HVAC systems for rooms E-207 and E-203. (Exhibit "C".) Chemistry Room E-207 has a supply and return air flow of 1650 cfm and Storage Room E-203 has a supply air flow rate of 100 cfm. These system were inspected by a HVAC contractor (Huckestein Mechanical) who verified that they are working properly and are installed as shown on these drawings. This information was verified by a registered professional engineer stating these rooms are ventilated via mechanical means.

12. The District also objects to Citation 758664's Remedy that the citation an approved fume hood in the storage room. This is an improper application for this device and is not an industry design standard. By definition per American Society of Heating, Refrigerating and Air Conditioning Engineers, (ASHRAE), 2019 Applications Handbook, Chapter 17, Laboratories, paragraph 2.1 Fume hoods, defines Fume Hoods as; " safety device specifically designed to carry undesirable effluents (generated ...during laboratory procedure) away from laboratory personnel...". Copy is attached as Exhibit "D". A fume hood is intended to be used to enclosed chemicals when performing laboratory procedures, it is not to be used as a general exhaust for the laboratory. This can be accomplished via a simple exhaust grille. A fume hood does nothing to improve exhaust effectiveness of a room and adds unnecessary expense with no additional benefit when it is not needed for instructional procedures. Fume hoods are used for instruction in classrooms, not to ventilate storage rooms.

This room was not required to have an exhaust under per the current building IMC building code and therefore no exhaust is required. Code Section 171.14 of the Pennsylvania Environmental Code does not specifically address ventilation requirements for laboratories and is inadequate to provide appropriate guidance on this subject.

13. Section 171.14 also does not specifically mention ventilation of flammable liquid storage cabinets as referenced in the Citation. In fact, the National Fire Protection Association ("NFPA") 30-2018, Code -- Flammable, and Combustible Liquids -- states, "Venting of a flammable storage cabinet is not necessary" and "...is not recommended". See National Fire Protection Association Flammable and Combustible Liquids Code 30, Section 9.5.4 Storage Cabinets & appendix paragraph A.9.5.4. (Exhibit "E".) The code section 171.14 does not adequately govern specific ventilation for this usage.

14. The District objects that Citation 758664 includes environmental code interpretations encompassing areas not within the ACHD's jurisdiction and which are not based on the current applicable building and safety codes such as International Mechanical Code and NFPA that include detailed ventilation requirements for chemistry classrooms. To the extent ACHD believes violations occurred concerning ventilation, at the least reference should be made to current applicable codes that are incorporated into law.

No remedial efforts have been taken concerning this subject because the present HVAC system complies with the applicable building codes and there has been no demonstrated health hazards. The School District proactively undertook several months earlier an Air Quality Screening for Room 207 consisting of some 75 different constituents as well as temperature, humidity, carbon dioxide and carbon monoxide readings and all values were below acceptable limits.

15. The School District respectfully requests that Citation 758664 be rescinded based on the lack of jurisdictional authority, and insufficient guidance of Title 25, Section 171.14 on what constitutes adequate ventilation. Further, the District requests rescission of this citation because such ventilation is improper concerning a fume hood in the storage room and is not industry design standard.

WHEREFORE, the District requests rescission of Citation 758664 issued by the Allegheny County Health Department through the Allegheny County Health Department Housing and Community and Environment Program of October 5, 2022 .

Respectfully submitted,

TUCKER ARENSBERG, P.C.



John T. Vogel, Solicitor
Shaler Area School District

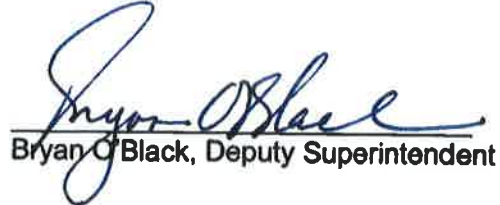
TADMS:11281018-1 014539-154663

VERIFICATION

I, Bryan O'Black, Deputy Superintendent of the Shaler Area School District, have read the foregoing Amended Notice of Appeal to the Citation by the Allegheny County Health Department Housing Per Citation 758664 as prepared by our counsel of record, and state that the statements contained therein are correct to the best of my personal knowledge or information and belief.

This statement and verification is made subject to the penalties of 18 Pa. C.S.A. §4904 relating to unsworn falsification to authorities, which provides that if I make knowingly false averments I may be subject to criminal penalties.

Dated: November 16, 2022


Bryan O'Black, Deputy Superintendent

COUNTY OF



ALLEGHENY

RICH FITZGERALD
COUNTY EXECUTIVE

Mr. Sean Aiken
Shaler Area School District
1800 Mt Royal Boulevard
Glenshaw PA 15116

October 5, 2022

RE: SR# HCE-20210112-2093

SHALER AREA SR HIGH

Property 381 WIBLE RUN ROAD

Address : Shaler Township, PA 15209

Census Tract : --

Dear Mr. Aiken:

On 10/03/2022, Scott Nobbs conducted an inspection of the structure and premises of the above mentioned school for compliance with Chapter 171, Schools, of the Pennsylvania Department of Environmental Protection. A copy of the inspection is attached. The inspection found violations of Chapter 171.

These conditions must be corrected by 11/09/2022. A re-inspection will be conducted after that date.

Swimming pool and food service inspections, if applicable, will be sent under a separate cover letter.

Pursuant to Article XI entitled "Hearings and Appeals," you are hereby notified that you have thirty (30) days after issuance of this written notice to file an appeal. The appeal shall be made in writing and must set forth with particularity all issues to be raised. The notice of appeal shall be submitted to the Allegheny County Health Department, Office of the Director, 542 4th Ave, Pittsburgh, Pennsylvania 15219. In the event that an appeal is not filed within thirty (30) days after issuance of this written notice, the within action shall become final.

Please contact us at (412)350-4046 if you have any questions.

Sincerely,

Scott Nobbs
Environmental Health Specialist
SN:Ks
Attachment

cc: Tim Royal, Principal
John Kaib, Maintenance



DEBRA BOGEN, MD, FAAP, FABM, DIRECTOR
ALLEGHENY COUNTY HEALTH DEPARTMENT
HOUSING & COMMUNITY ENVIRONMENT PROGRAM
3190 SASSAFRAS WAY (NEAR 32ND ST. AT LIBERTY AVE.)
PITTSBURGH, PA 15201-1443

PHONE: 412.350.4046 • FAX: 412.350.2792
WWW.ALLEGHENYCOUNTY.US/HEALTHDEPARTMENT



ALLEGHENY COUNTY HEALTH DEPARTMENT
INSPECTION REPORT -School Buildings

SR#: HCE-20210112-2093

Facility Info : **SHALER AREA SR HIGH
SCHOOLS (STRUCTURES)
381 Wible Run Road , Shaler Township 15209**

CT:

Inspection # 1

Inspector : Scott Nobbs

Inspection Date : October 3, 2022

Time : 1 3:50

Contacts :

**Mr. JOHN KAIB Maintenance
SHALER AREA SCHOOL DISTRICT
1660 Butler Plank Road
Glenshaw , PA 15116 - 0000**

**Ms SHERI LUDWIG District Business Manager
1800 Mt Royal Boulevard
Glenshaw , PA 15116 - 0000**

**Mr. TIM ROYALL Principal
SHALER AREA HIGH SCHOOL
381 Wible Run Road
Pittsburgh , PA 15209 - 0000**

**Mr. SEAN AIKEN Superintendent
SHALER AREA SCHOOL DISTRICT
1800 Mt Royal Boulevard
Glenshaw , PA 15116 - 0000**

Listed below are the violations that require corrective action:

758664 Section Z01 D (001 O) Class: Non Critical

Violation Status : **FIRST**

Violation : Section 171.14: Inadequate ventilation of chemical, biological, or
Remedy : other toxic materials.

Provide an approved operating fume hood.

Comments : ROOM 207. CHEMICAL STORAGE ROOM IS IMPROPERLY VENTILATED.

ROOM 209. CHEMICAL STORAGE ROOM. FLAMMABLE STORAGE CABINET IS IMPROPERLY VENTILATED.

PROVIDE ADEQUATE VENTILATION OF CHEMICAL STORAGE.

758665 Section Z01 K (007 O) Class: C

Violation Status : **FIRST**

Violation : Section 171.4: Broken, malfunctioning water supply lines.

Remedy : Repair and maintain as required by ACHD Article XV, " Plumbing
and Building Drainage".

Comments : WATER PUMP IS LEAKING IN THE BOILER ROOM RIGHT NEXT TO AN ELECTRICAL WATER HEATER. REPAIR LEAK.

ALLEGHENY COUNTY HEALTH DEPARTMENT
INSPECTION REPORT -School Buildings

SR#: HCE-20210112-2093

Facility Info : **SHALER AREA SR HIGH
SCHOOLS (STRUCTURES)
381 Wible Run Road , Shaler Township 15209**

CT:

Inspection # 1

Inspector: Scott Nobbs

Inspection Date : October 3, 2022

Time : 13:50

758666 Section Z01 M (003 O) Class: Non Critical

Violation Status : **FIRST**

Violation : Section 171.13: Fire evacuation plans not posted.

Remedy:

Post fire evacuation plans in every occupied room.

Comments : FIRE EVACUATION PLANS NOT POSTED IN THE AUDITORIUM OR THE GYM. A FIRE EVACUATION PLAN MUST BE POSTED IN EVERY OCCUPIED ROOM.

----- END OF REPORT -----

All Inspections Verified by the Inspector :

SRN

EXHIBIT "B" - EXCERPT FROM TITLE 25 PA ENVIRONMENTAL CODE

25 Pa. Code § 171.14

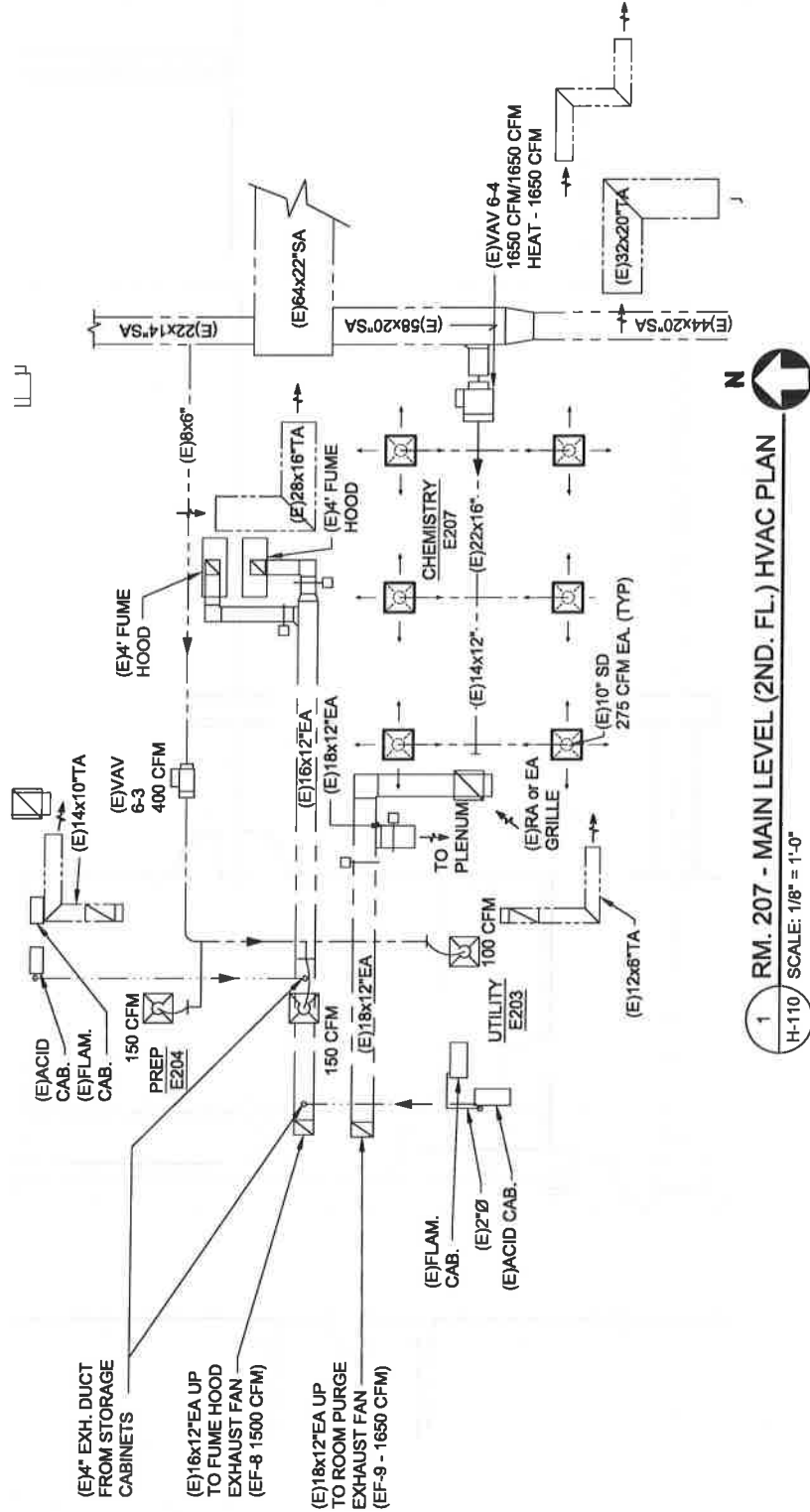
Section 171.14 - Heating and ventilation

All rooms of the school shall be adequately and uniformly heated. In those schools where room heaters are used, they shall be located and protected to prevent direct contact by the students. All heating devices shall be adequately vented in an approved manner. In all rooms of the school, when mechanical ventilation is not provided, means shall be provided to insure adequate, natural ventilation.

25 Pa. Code § 171.14



EXHIBIT "C" - EXISTING HVAC SYSTEM FOR RM. 207



RM. 207 - MAIN LEVEL - EXISTING HVAC PLAN

| | | | | |
|--|---|---|-----------------------------------|--------------------------------------|
| | PROJ. TITLE: SHALER AREA HIGH SCHOOL LAB EXH. 1505 METROPOLITAN ST. PITTSBURGH PA 15203 SUBMITTABLE CONSULTING ENGINEERS FAX (412) 836-5865 | CONTRACT NO: Z-465 DATE: 11/16/22 SCALE: 1/8"=1'-0" | SD: WORK WITH DWGS. MSW TMR | DWG NO.: SKH-1 H-110 - 207 CONST. |
|--|---|---|-----------------------------------|--------------------------------------|

Architectural Considerations

Integrating utility systems into the architectural planning, design, and detailing is essential to providing successful research facilities. The architect and the HVAC system engineer must seek an early understanding of each other's requirements and develop integrated solutions. HVAC systems may fail to perform properly if the architectural requirements are not addressed correctly. Quality assurance of the installation is just as important as proper specifications. The following play key roles in the design of research facilities:

Modular Planning. Most laboratory programming and planning is based on developing a module that becomes the base building block for the building layout. Laboratory planning modules are frequently 10 to 12 ft wide and 20 to 30 ft deep. The laboratory modules may be developed as single work areas or combined to form multiple-station work areas. Utility systems should be arranged to reflect the architectural planning module, with services provided for each module, or pair of modules, as appropriate.

Development of Laboratory Units or Control Areas. National Fire Protection Association (NFPA) *Standard 45* requires that laboratory units be designated. Similarly, the *International Building Code*® (ICC 2015) requires the development of control areas. Laboratory units or control areas should be developed, and the appropriate hazard levels should be determined early in the design process. The HVAC designer should review the requirements for maintaining separations between laboratories and note requirements for exhaust ductwork to serve only a single laboratory unit or control area.

Additionally, NFPA *Standard 45* requires that no fire dampers be installed in laboratory exhaust ductwork. Building codes offer no leeway on maintaining required floor-to-floor fire separations. Review these criteria and the proposed solutions early in the design process with the appropriate building code officials. The combination of the two requirements commonly necessitates the construction of dedicated fire-rated shafts from each occupied floor to the penthouse or building roof.

Provisions for Adaptability and Flexibility. Research objectives frequently require changes in laboratory operations and programs. Thus, laboratories must be flexible and adaptable, able to accommodate these changes without significant modifications to the infrastructure. For example, the utility system design can be flexible enough to supply ample cooling to support the addition of heat-producing equipment without requiring modifications to the HVAC system. Adaptable designs should allow programmatic research changes that require modifications to the laboratory's infrastructure within the limits of the individual laboratory area and/or interstitial and utility corridors. For example, an adaptable design would allow addition of a fume hood without requiring work outside that laboratory space. Further, the HVAC designer should consider the consequences of future programmatic changes on the sizing of main ductwork and central system components. The degree of flexibility and adaptability for which the laboratory HVAC system is designed should be determined from discussion with the researchers, laboratory programmer, and laboratory planner. The HVAC designer should have a clear understanding of these requirements and their financial impact.

Early Understanding of Utility Space Requirements. The amount and location of utility spaces are significantly more important in research facility design than in that of most other buildings. The available ceiling space and the frequency of vertical distribution shafts are interdependent and can significantly affect architectural planning. The HVAC designer must establish these parameters early, and the design must reflect these constraints. The designer should review alternative utility distribution schemes, weighing advantages and disadvantages.

High-Quality Envelope Integrity. Laboratories that have stringent requirements

static pressure, and background particle count generally require architectural features to allow the HVAC systems to perform properly. The building envelope may need to be designed to handle relatively high levels of humidification and slightly negative building pressure without moisture condensation in the winter or excessive infiltration. Some of the architectural features that the HVAC designer should evaluate include

- Vapor and air barriers: position, location, and kind
- Insulation: location, thermal resistance, and kind
- Window frames and glazing
- Caulking
- Internal partitions: their integrity in relation to air pressure, vapor barriers, and insulation value
- Finishes: vapor permeability and potential to release particles into the space
- Doors
- Air locks

Air Intakes and Exhaust Locations. Mechanical equipment rooms and their outdoor air intakes and exhaust stacks must be located to avoid intake of fumes into the building. As with other buildings, air intake locations must be chosen to minimize fumes from loading docks, cooling tower discharges, vehicular traffic, adjacent structures and processes, etc.

2. LABORATORY EXHAUST AND CONTAINMENT DEVICES

2.1 FUME HOODS

The Scientific Equipment and Furniture Association (SEFA 2010) defines a laboratory fume hood as a "safety device specifically designed to carry undesirable effluents (generated . . . during a laboratory procedure) away from laboratory personnel and out of the building, when connected to a properly designed laboratory ventilation system." The hood can be mounted on a bench, a pedestal, or the floor. Materials should mainly be flame resistant. The face opening has a sash and an optional additional protective shield, and usually has an airfoil to reduce reverse airflow on the lower surface. The hood should have a baffle, and usually a bypass system to control airflow patterns in the hood and distribute air evenly at the opening. For variable-air-volume (VAV) systems, the bypass system may be partially blocked. Figure 1 shows the basic elements of a general-purpose benchtop fume hood.

Fume hoods may be equipped with a variety of accessories, including internal lights, service outlets, sinks, air bypass openings, airfoil entry devices, flow alarms, special linings, ventilated base storage units, and exhaust filters. Under-counter cabinets for storage of flammable materials require special attention to ensure safe installation. NFPA *Standard 30* does not recommend venting these cabinets; however, ventilation is often required to avoid accumulation of toxic or hazardous vapors. Ventilation of these cabinets by a separately ducted supply and exhaust that will maintain the temperature rise of the cabinet interior within the limits defined by NFPA *Standard 30* should be considered.

Types of Fume Hoods

The following are the primary types of fume hoods and their applications:

Constant Volume (approximately constant-volume airflow with variable face velocity). Hood that meets basic SEFA definition.

Sash may be vertical, horizontal, or combination.

Application: Moderate to highly hazardous processes; varying

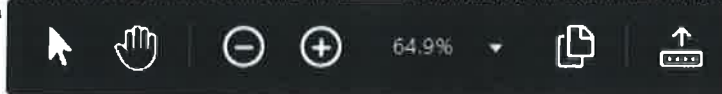


EXHIBIT "E" - NFPA 30 - FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE - PARA. 9.5.4 - STORAGE CABINETS

- (c) Where more than one door is used, there shall be a rabbeted overlap of not less than 1 in. (25 mm).
- (d) Doors shall be equipped with a means of latching, and hinges shall be constructed and mounted in such a manner as to not lose their holding capacity when subjected to fire exposure.
- (e) A raised sill or pan capable of containing a 2 in. (50 mm) depth of liquid shall be provided at the bottom of the cabinet to retain spilled liquid within the cabinet.
- (f) New cabinets shall have self-closing doors.
- (4) Listed storage cabinets that have been constructed and tested in accordance with UL 1275, *Flammable Liquid Storage Cabinets*; FM 6050, *Approval Standard for Storage Cabinets for Ignitable (Flammable Liquids)*, or equivalent shall be acceptable.

9.5.4* Storage cabinets shall not be required by this code to be ventilated for fire protection purposes.

9.5.4.1 If a storage cabinet is not ventilated, the vent openings shall be sealed with the bungs supplied with the cabinet or with bungs specified by the cabinet manufacturer.

9.5.4.2* If a storage cabinet is ventilated for any reason, the vent openings shall be ducted directly to a safe location outdoors or to a treatment device designed to control volatile organic compounds (VOCs) and ignitable vapors in such a manner that will not compromise the specified performance of the cabinet and in a manner that is acceptable to the authority having jurisdiction.

9.5.5* Storage cabinets shall include the following marking:

FLAMMABLE
KEEP FIRE AWAY

Table 9.6.1 MAQ of Ignitable (Flammable or Combustible) Liquids per Control Area

| Liquid Class(es) ^a | Quantity | | Notes |
|-------------------------------|----------|--------|---------|
| | gal | L | |
| IA | 30 | 115 | 1, 2 |
| IB and IC | 120 | 460 | 1, 2 |
| IA, IB, IC combined | 120 | 460 | 1, 2, 3 |
| II | 120 | 460 | 1, 2 |
| IIIA | 330 | 1,265 | 1, 2 |
| IIIB | 13,200 | 50,600 | 1, 2, 4 |

^a See Section 4.2 for details on the classification scheme.

Notes:

(1) Quantities are permitted to be increased 100 percent where stored in approved liquid storage cabinets or in safety cans in accordance with the fire code. Where Note 2 also applies, the increase for both notes is permitted to be applied cumulatively.

(2) Quantities are permitted to be increased 100 percent in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13. Where Note 1 also applies, the increase for both notes is permitted to be applied cumulatively.

(3) Containing not more than the maximum allowable quantity per control area of Class IA, Class IB, or Class IC [FP < 100°F (37.8°C)] liquids, individually.

(4) Quantities are not limited in a building equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13 and designed in accordance with the protection criteria contained in Chapter 16 of this code.

- (6) Educational
- (7) Health care
- (8) Residential

EXHIBIT "E". P-2, - NFPA 30 - FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE -APPENDIX PARA. A.9.5.4 - STORAGE CABINETS

(5) The ongoing effect of falling liquids overweighs the design basis of most fire protection and drainage systems resulting in significant fire loss.

The size of the pool fire and heat release rate has driven the historic focus on CIBC fire protection strategies on the development of fire-resistant containers that prevent leakage from CIBCs exposed to fire. In the model codes and standards, these "fire-resistant" CIBCs are defined as "listed and labeled" containers. In the U.S., listed and labeled containers typically represent CIBCs that have successfully passed testing in accordance with either the UL 2368 or FM 6020 testing standards, or an equivalent test procedure.

A.9.5 The requirements in Section 9.5 are based on hazards associated with fixed Class I liquids [FP < 100°F (37.8°C)] storage cabinets. They do not address potential hazards associated with mobile storage cabinets (i.e., cabinets with integral wheels) such as the following:

- (1) Increased risk of spills
- (2) Potential for tipover or blockage of egress
- (3) Maintenance of vent and grounding integrity
- (4) Variable condition of exposed floor surfaces under the cabinet

A.9.5.4 Venting of storage cabinets has not been demonstrated to be necessary for fire protection purposes. Additionally, venting a cabinet could compromise the ability of the cabinet to adequately protect its contents from involvement in a fire.

(5) Likelihood of vapor accumulation following discharge, such as accumulation under building eaves

(6) Likelihood of sufficient discharge volume to allow an ignitable concentration to reach an ignition source

Historically, NFPA 30 has provided prescriptive guidance, often based on area classification requirements, and results have been acceptable. Closer distances should be accepted only if an analysis by a qualified person justifies closer distances. Similarly, the specified distances might not be acceptable for all installations, thus the guidance provided above.

A.9.5.5 ANSI Z535.2:2007, *Environmental and Facility Safety Signs*, Section 9.2, was used to determine the letter height, based on a safe viewing distance of 25 ft (7.5 m). Markings can be reflective to improve visibility. See ASTM D4956, *Standard Specification for Retroreflective Sheeting for Traffic Control*, for more information on providing reflective surfaces. If international symbols are used, they should be a minimum of 2.0 in. (50 mm) in size.

A.9.8.1 The Protection Level classifications are taken from NFPA 5000, Protection Levels 1, 4, and 5 do not apply to the storage of flammable and combustible (ignitable) liquids and are, therefore, not extracted here.

A.9.8.2 See NFPA 5000 for additional requirements.

Bulk Containers for Flammable and Combustible Liquids, FM 6020, *Approval Standard for Composite Intermediate Bulk Containers*, or an equivalent test procedure. Listed and labeled containers must pass the applicable fire test procedure in addition to UN/DOT classification.

The main fire protection concern is that nonlisted and nonlabeled nonmetallic or composite intermediate bulk containers (CIBCs) exposed to fire fail quickly, thus creating large pool fires by adding a significant amount of fuel to an existing fire. The large fuel release can overwhelm a building's fire protection and loss control features. The UK Health and Safety Executive conducted seminal research on this hazard in the early 2000s (see "RR 564 — Fire Performance of Composite IBCs"), following a series of large-loss fires in Europe involving CIBCs. The results of this research documented the following:

- (1) The initial fire exposure to CIBCs are typically external to the container, from either an adjacent use of Class I liquids [FP < 100°F (37.8°C)] or ordinary combustible materials. Many CIBCs are vulnerable to rapid container failure from small exposure fires involving ordinary combustible materials (e.g., wood and paper).
- (2) Upon exposure to elevated temperature from fire exposure, the thin blow-molded polyethylene bottle allows extensive permeation of the container contents to occur. This effect is significantly more pronounced with hydrocarbon fluids than with polar solvents.
- (3) The permeation softens the plastic to the point that within 2 to 3 minutes of fire exposure, there are a

because cabinets are not generally tested with any venting. Therefore, venting of storage cabinets is not recommended.

However, it is recognized that some jurisdictions might require storage cabinets to be vented and that venting can also be desirable for other reasons, such as health and safety. In such cases, the venting system should be installed so as to not affect substantially the desired performance of the cabinet during a fire. Means of accomplishing this can include thermally actuated dampers on the vent openings or sufficiently insulating the vent piping system to prevent the internal temperature of the cabinet from rising above that specified. Any make-up air to the cabinet should also be arranged in a similar manner.

If vented, the cabinet should be vented from the bottom with make-up air supplied to the top. Also, mechanical exhaust ventilation is preferred and should comply with NFPA 91. Manifolding the vents of multiple storage cabinets should be avoided.

A.9.5.4.2 A "safe location" should be selected as the location of a vent discharge to minimize the potential for ignitable vapors to travel to a source of ignition after discharge from the vent. Electrical equipment that does not meet the requirements for hazardous locations can serve as an ignition source. The Technical Committee advises that vent discharge locations should consider such factors as the following:

- (1) Characteristics of the exhausted material (vapor density, toxicity, velocity of discharge, etc.)

PROOF OF SERVICE

The undersigned hereby certifies that on November 22, 2022, a true and correct copy of the Amended Notice of Appeal to the Citation by the Allegheny County Health Department Housing was mailed via first class U.S. mail, postage prepaid, to the address below:

Allegheny County Health Department
Office of the Director
542 Fourth Avenue
Pittsburgh, PA 15219

Date: November 22, 2022



John T. Vogel
Counsel for Shaler Area School District