



11 Jul 2025

City of Pullayup

Building Services and Fire Prevention
333 S. Meridian, 2nd Fl
Puyallup, WA 98371

Attn: Mr. David Drake, Fire Inspector

Project: **MultiCare Good Samaritan Hospital**

Re: **Grease interceptor fire protection assessment**

Mr. Drake,

This letter is to provide a Code assessment for the fire protection requirements related to the proposed grease interceptor replacement for the subject project.

Background

The MultiCare Good Samaritan Hospital project includes renovation of the kitchen, including replacement of the existing grease interceptor with two new grease interceptors constructed of polypropylene.

The following comment was received during the pre-application meeting with the City of Puyallup Development and permitting Services (Fire Review - David Drake, City of Puyallup)

“Provide a FPE report stating the type of polyethylene can be used inside the hospital. This report will need to detail the requirements for fire sprinkler, fire alarm, building type of construction and so on. The concern is this type of commodity can be allowed per the 2021 IFC for this type of occupancy.”

Mannex Engineering was retained by Perkins&Will to help resolve this issue.

Code review

1. WSFC 2021

1.1. Chapter 50 hazardous Materials

1.1.1. Table 5003.1.1 “Maximum Allowable Quantity per Control Area of Hazardous Materials Posing a Physical Hazard” - The MAQ for Class IIIB combustible liquids is 13,200 gallons for facilities in which an automatic speaker system is not installed; and an unlimited quantity in buildings in which an automatic spring system is installed.

Comment: Given the quantity of two (2) 500 gal interceptors, this room is not a Hazardous (H) occupancy.

1.2. Chapter 57 Flammable and Combustible Liquids

1.2.1. §5704.2.2 Tank storage. The provisions of this section shall apply to the storage of flammable and combustible liquids in fixed aboveground tanks inside of buildings.

Comment: It is unclear if grease interceptors are within the scope of a “tank” as used in Chapter 57 of the WSFC. The WSFC defines a Tank as:

§202 Tank. A vessel containing more than 60 gal.

The definition seems to include a grease interceptor. However, I have never encountered a project in which the requirements of Ch. 57 of the WSFC were applied to a grease interceptor.

Grease interceptors contain oils and grease that are Class IIIB combustible liquids. These liquids have a specific gravity of less than 1.0, resulting in the majority floating on top of water (i.e., the principal basis of the operation of a grease interceptor). However, a portion of the oils and greases are mixed in an emulsion with the water, resulting in a weak fire if combustion could be maintained at all.

However, proceeding on a conservative basis as if the interceptors are a “tanks”.

1.2.2. §5704.2.7 Design, fabrication and construction requirements for tanks. The design, fabrication and construction of tanks shall comply with NFPA 30. Each tank shall bear permanent nameplate or marking indicating the standard used as the basis of design.

1.2.3. §5704.2.7.1 Materials used in tank construction. The materials used in tank construction shall be in accordance with NFPA 30. The materials for construction for tanks and their appurtenances shall be compatible with liquids to be stored.

2. NFPA 30 (2021)

2.1. §21.4.1 Materials of Construction. Tanks shall be of steel or other approved noncombustible material in accordance with 21.4.1.1 through 21.4.1.4, or of combustible materials in accordance with 21.4.1.1 and 21.4.1.3 through 21.4.1.5.

Comment: This section allows tanks constructed of combustible polymers (e.g., polypropylene), subject to meeting the following requirements.

2.2. §21.4.1.5 Combustible Materials.

2.2.1. §21.4.1.5.1 Tanks shall be permitted to be constructed of combustible materials where approved.

Comment: This section allows tanks constructed of combustible polymers (e.g., polypropylene), subject to the Approval of the Code official.

2.2.2. §21.4.1.5.2 Tanks constructed of combustible materials shall be limited to any of the following:

- (1) Underground installation
- (2) Use where required by the properties of the ignitable (flammable or combustible) liquid stored
- (3) Aboveground storage of Class IIIB liquids [FP ≥ 200°F (93°C)] in areas not exposed to a spill or leak of Class I or Class II liquids [FP < 140°F (60°C)]
- (4) Storage of Class IIIB liquids [FP ≥ 200°F (93°C)] inside a building protected by an approved automatic fire-extinguishing system

Comment: Subsection (3) applies. Subsection (4) applies.

Conclusions

- A. The aggregate amount of Class IIIB combustible liquids in the two grease interceptors does not result in a Hazardous (H) occupancy classification.
- B. The most conservative approach to Code assessment of the grease interceptors assumes they fall within the scope of the WSFC of a “tank” as regulated for the purpose of holding Class IIIB combustible liquids.
- C. The WSFC allows tank materials to be per NFPA 30.
- D. NFPA 30 allows the material of the interceptors to be plastic as the building is sprinklered.

If you have any further questions, please do not hesitate to contact me.

Sincerely,



Mark R. Mannex, PE

President

MANNEX ENGINEERING LLC



11 Jul 25

