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Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations



OPCA – March 2016

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Canadian Environmental Protection Act, 1999 (CEPA)

Part 9 – Regulations that apply to
Federal Departments, Boards, Agencies, Crown
Corporations and Federal Works or Undertakings
Federal or Aboriginal Land

Storage Tank Systems for Petroleum Products
and Allied Petroleum Products Regulations
created under Section 209 of CEPA, 1999



Purpose of the Regulations

Reduce leaks into environment

Reduce impact of spill events

SOIL AND GROUNDWATER
PROTECTION



The application of the Regulations

- 1. Aboveground and underground storage tank systems**
- 2. Petroleum products and allied petroleum products**
- 3. Selected Federal House (CEPA 1999, s. 207(1))**



Which systems are covered by the Regulations?

- **All underground storage tank systems**
- **For aboveground storage tank systems:**
 - outdoor tanks >2500 L attached to a heating appliance or emergency generator
 - all other outdoor tanks

Application

Exceptions s.2(2)

- Indoor storage tank systems
- Unprocessed petroleum products
- Tanks ≤ 2500 l in capacity **AND** connected to heating appliance or emergency generator
- Tank systems regulated under the *National Energy Board Act* or the *Canada Oil and Gas Operations Act*



Application

- Federal House (s.207(1) of the *Canadian Environmental Protection Act, 1999*)
 - Federal departments, boards and agencies
 - Federal crown corporations
 - Airports, railways and port authorities
 - Federal lands and Aboriginal lands

Overview of the Regulations

- Withdraw leaking systems
- Remove 'high risk' systems
- Mandatory compliance with technical requirements for 'new' systems
- Leak detection for components without secondary containment
- Product transfer areas



Overview cont'd...

- Transfer of product to ID'd systems only
- Emergency plans
- Approved installers
- Operation and maintenance requirements
- Spill reporting
- Record keeping



Definition: Storage Tank System

- One or more commonly connected tanks and components:

Special case

- *At airports, the system ends at the pump discharge*

- Piping and vents
- Pumps and sumps
- Diking
- Overfill protection devices
- Spill containment devices
- Oil water separators

Incorporation by Reference

- s. 14. “...The **system or the component** **conforms to the applicable requirements** set out in the following provisions of the CCME Code of Practice:”

The Code of Practice becomes part of the regulations!



What are the design requirements for new systems?

- Aboveground tanks in accordance with CCME Part 3
- Underground tanks in accordance with CCME Part 4
- Piping in accordance with CCME Part 5
- Tank system design stamped by a professional engineer

CCME Code of Practice

- Are plans to update the CCME Code of Practice?

Not at this time. We would like to see them updated but we are only one seat on the Council. We need to get support from the provinces.



What are the installation requirements for new systems?

- System installation by:
 - provincially approved installer, where applicable
 - If not applicable, supervised by a professional engineer
- As-built drawings stamped by a professional engineer

New Systems

As-built drawings s.34(2)

- Outline of all tanks and buildings
- Centreline of all piping and underground electrical power / monitor sensor conduits
- Property lines
- Secondary containment systems

Must be stamped and signed by P.Eng.





What is a product transfer area?

- The regulations define a transfer area as “the area around the connection point between a delivery truck, railcar, aircraft or vessel and a storage tank system.” In other words, it is the general area where product is transferred into a storage tank system from a delivery vehicle.
- *“15. (1) The owner or operator of a storage tank system must ensure that petroleum product and allied petroleum product transfer areas are designed to contain spills that occur during the transfer process.”*



Why Environment Canada requires spill containment at product transfer areas!

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Is a spill box enough to make a product transfer area safe?



Spill containment devices – on their own, they are not a PTA designed to contain spills

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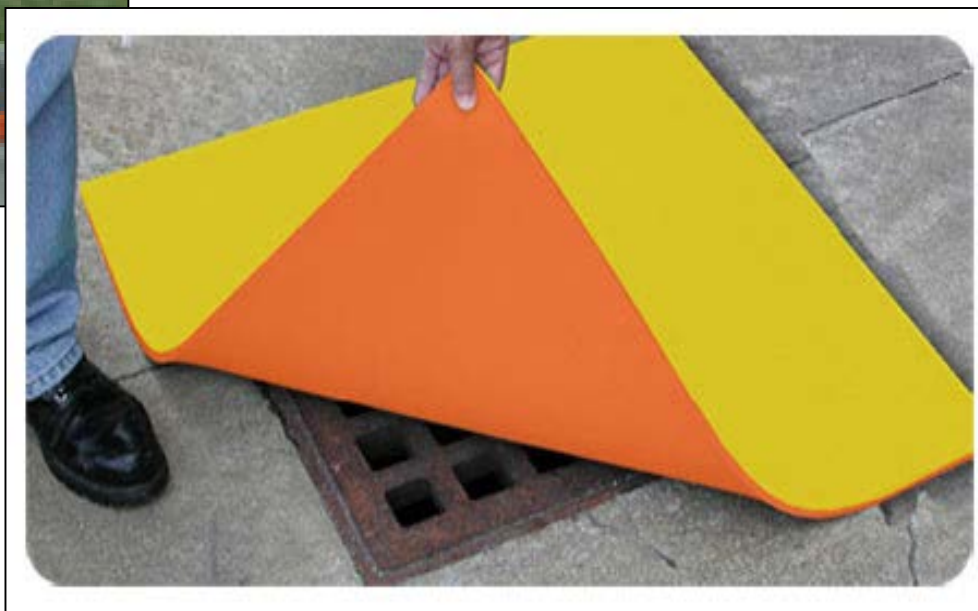


Do you need permanent physical containment?

Not necessarily. You may certainly wish to have permanent physical containment such as a concrete pad with sides if you have frequent fuel deliveries. It is also possible to have temporary physical containment, such as berms that are inflated during fuel delivery.



Do you need permanent physical containment?



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Do you need permanent physical containment?



Commercially available temporary berms



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Is physical containment enough?

Probably not. With physical containment, you also need some standard operating procedures to make the design work properly.



Geomembrane Liner



An impermeable, hydrocarbon resistant, non-combustible barrier that contains spills or overfills.



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Slide 23 – 2014

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Is it enough to have operating procedures in place to prevent spills?

Probably not. As stated above, a design to contain spills at a product transfer area would usually involve a combination of procedures, training and physical barriers.

Solution

Here are some recommended steps for designing a product transfer area that works:

Step 1: Assess the storage tank system and its surrounding environment;

Step 2: Identify potential accidents that could happen during product transfer;

Step 3: Identify ways to prevent and contain spills;

Step 4: Implement and test your design;

Step 5: Document the results; and

Step 6: Revise your design if changes are needed.

Test and implement your Spill Containment

In order to prove that your spill containment at the transfer area works, test it out!



Document the Results

- You need to be able to demonstrate to an inspection officer that your PTA is designed to contain spills. So, record your calculations of the volume for the potential spills and how you plan to deal with them. If you test your PTA, keep a record and pictures of the testing as proof that it works.
- If you use temporary berms during re-fuelling, take photographs of them in use so that you can show an enforcement officer exactly how you have designed and implemented your PTA.

8. References

Federal Storage Tank Regulations Website:

<http://ec.gc.ca/rs-st/>

Contains:

- *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*
- *CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products*
- FAQs
- Tips
- Registration and contact information



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Gasoline & Gasoline-Blend Dispensing Flowrate Regulations

Background (continued)

- Who does this apply?
 - Retailers (e.g., gas stations) and wholesale purchaser-consumers' of gasoline and gasoline blends who use, or offer for use, any nozzle to dispense those fuels into on-road vehicles (e.g., cars, SUVs, vans)
 - Does not apply to nozzles dedicated to refuelling heavy-duty vehicles (e.g., buses, semi-trucks, garbage trucks)

Requirement

Flow rate from the nozzle can not exceed



38 litres per minute

Same as the Liquid Fuels Handling Code

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Thank You



Slide 32 – 2014



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