

FRP CONE

for Hatch Sealing and Vapor Recovery



**Peerless takes a customer requirement
from *concept*, to *product*
that exceeds all expectations.**



FRP Cone for Hatch Sealing and Vapor Recovery

Depending on the medium being loaded or unloaded, there are potentially strict guidelines enforced by multiple government and/or regulatory agencies that dictate how “tight” a loading operation must be. This is where hatch covers, cones and plugs become necessary. These apparatus allow for closed filling of hazardous materials as well as the means for recovering harmful or noxious vapors via vacuum scrubber or natural aspiration. Application of these devices makes for a safer, cleaner and more efficient loading process.



Typical tapered hatch plug for vapor recovery

Initial Request from Customer:

“...could I get a quote on a tapered hatch seal for HCl (20’ Be) service. We currently use a hatch plate but it doesn’t fit all the HCl trucks we load.

Info you needed is below:

%HCl = 31.4 – 32.6%

Diameters of various hatches are between 9” and 10” (inside diameter of opening to tanker). I would be looking for something that I could use for all sizes – universal. Temperature is typically close to ambient. The storage tanks are outside and change with seasons.”



Peerless’ FRP Cone solution

Taking this request to our loading area experts, we were able to identify a product that we could improve upon to meet our customer’s requirements.

We then identified materials compatible with the customer’s product and worked with a local manufacturer to determine whether the design was executable.

The outcome was a very durable cone with threaded and flanged connections built to ANSI specifications.

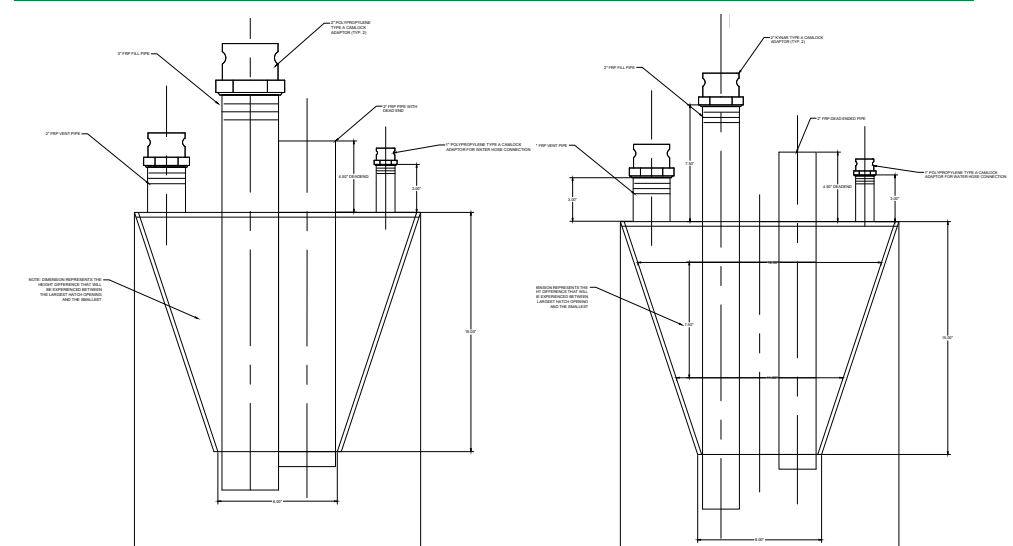
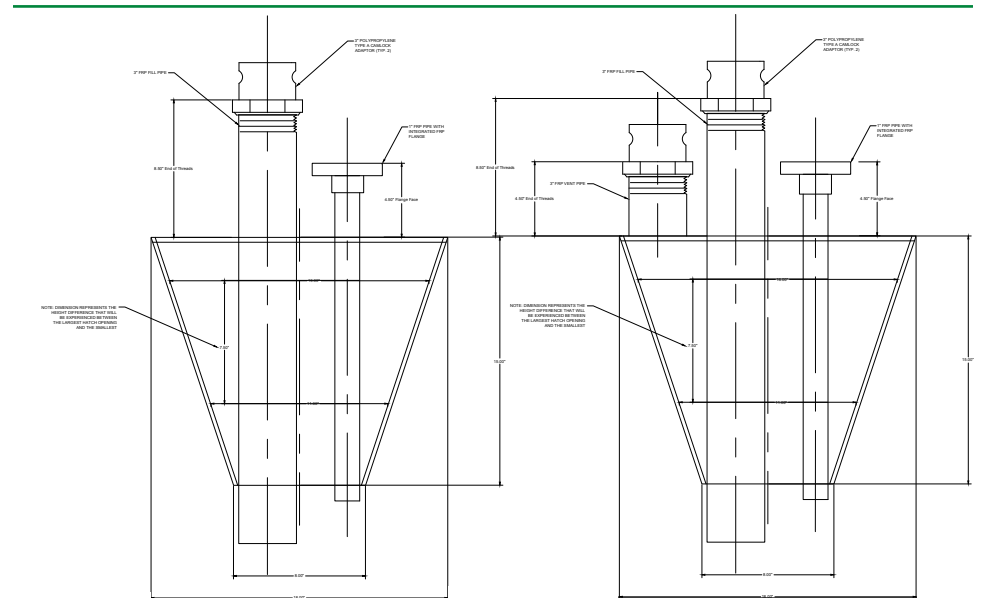
The Peerless team of engineers took an already successful design and improved upon it by designing a cone to be made from Fiberglass Reinforced Polyester Resin (FRP). FRP is a material that is as corrosion-resistant in a multitude of environments as it is physically durable.



FRP Cone in use in a HCL tank truck loading application

An added benefit to this method of construction is that the cones are fully customizable to the customer’s loading area arrangement.

The FRP Cone concept has been so well received by customers, that secondary requests for different designs and customer referrals have given Peerless the opportunity to do what they truly do best, assess customer needs and leverage their knowledge, skills and abilities to develop products and solutions that are safe, practical and long lasting.

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Customer Feedback on the FRP Cone Solution

Peerless asked the end-user chemical manufacturers to provide their feedback on their experience with the FRP Cone solution.

Manufacturer A:

"I like the cone. So far it has worked well for a number of trucks. I may actually be looking to have another one made with a smaller opening and shorter overall height – the cone is a bit too top heavy for the smaller openings – sits too high.

Overall though I think the quality of the product is good."

Based on this feedback, a second cone was designed to accommodate a smaller opening. The revised design was well received.

"The [second] cone is working out well. I was pleased with the construction and it turned out just as good as the original."

Manufacturer B:

"We haven't started using the railcar one yet, but the truck one for the most part has been working out well. We just have one truck that comes in with a dome size that is too small for it, but that truck comes through maybe once every week or two."

Peerless responded by asking:

"Do you think if we squeezed the cone in about 2" on both top and bottom it would work for all? We'd like to refine and dial in the perfect sized cone for you."

"After talking to the operators and getting some measurements, it looks like yeah, this would work for all the trucks we see.

We also had to extend the high level switch tube to 11" total length from the bottom of the cone in order to completely cover our high level switch, so that should be amended in the design as well."

Design modifications from this client's feedback will be applied moving forward.

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