

Q: I'm setting up a car switch list and wonder how much time I should allow to unload a car? For example, how long does it take to unload a 30,000 gallon tank car or a covered hopper full of grain?

A: The length of time required to empty a tank car depends on the viscosity of the liquid and whether you are relying strictly on gravity or if a pump is being used to accelerate the process.

A 30,000 gallon tank car with a thin liquid like alcohol can be emptied in about 10 to 15 minutes if the valve is fully opened. Thicker liquids, like corn syrup or caustic soda, take much longer, and often need to be heated to establish a steady flow.

Many modern industries use inbound tank cars for storage and draw liquid

from them on an as-needed basis – so it can take a week or more for the car to be emptied.

Discharge devices for powders and dry pellets used vacuum systems to facilitate rapid unloading.

Grain hoppers generally have gravity outlets that allow the bay to be emptied in 10 to 15 minutes. Smaller or older facilities with augers that cannot handle a high flow rate may require 30 minutes or more to unload.

— *Richard Bale and Scott Chatfield*

Q: Is card stock a good construction material for structures?

A: Yes, card stock is one of the oldest, strongest and most inexpensive construction materials available to model