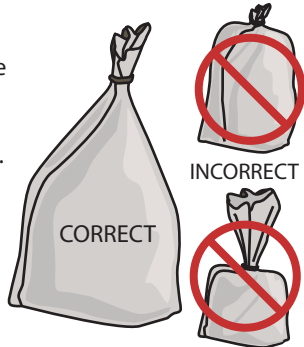


Sandbagging 101

Sandbagging is a seasonal ritual in flood-prone cities and towns. In places like Fargo, N.D., up to 3 million bags are filled, readied and made into levees according to methods developed for saving lives, homes and property. Here's a look at how it's done.

1 SANDBAGS

Most sandbags are made of woven polypropylene and are 14 inches wide and perhaps 2 feet deep. They're usually filled about halfway with sand or clay and tied or stapled. They weigh about 35 pounds.



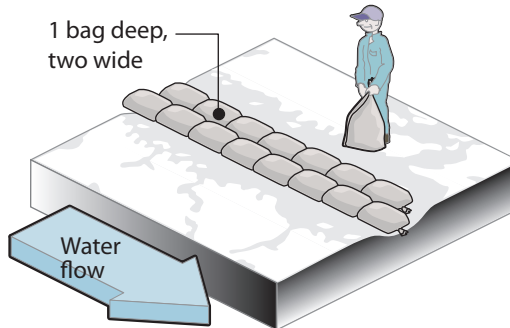
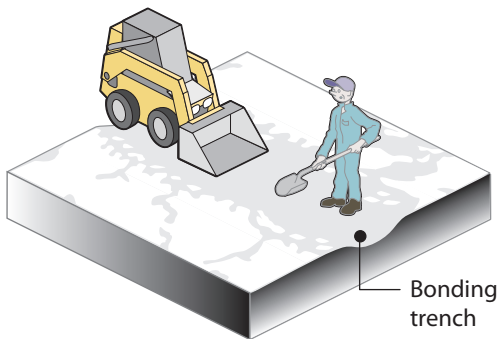
2 FILLING BAGS

It usually takes two people to fill one sandbag. Crews often use funnels (like the one shown), but mass production sometimes involves conveyors and chutes.



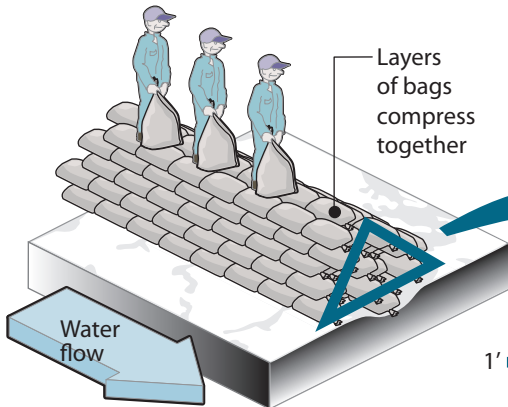
3 SITE PREP

Site preparation begins with scraping away ice, snow and topsoil, if possible. A shallow trench sometimes helps hold the levee in place.



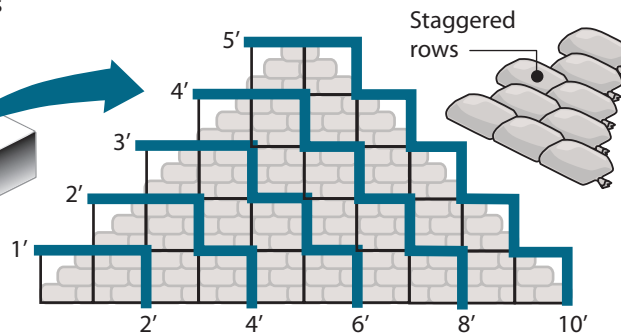
4 THE LEVEE

Levees are usually built at least a foot higher than the predicted crest.



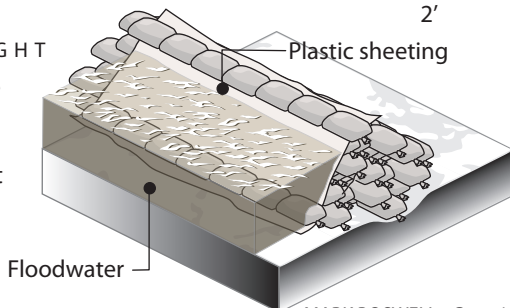
5 CONSTRUCTION RATIOS

The U.S. Army Corps of Engineers recommends that a levee have a base three times wider than its height. Other sources say a 1:2 ratio is adequate for a solid levee. Bags are staggered, like bricks in a wall. The water's weight helps hold a levee in place.



6 WATERTIGHT

Plastic sheets are often wrapped under and over levees to prevent seepage.



Floodwater is polluted, so used sandbags are considered contaminated.

Sources: North Dakota State University Extension Service and the U.S. Army Corps of Engineers, St. Paul