US Army Corps of Engineers®
Engineer Research and Development Center

Laboratory Testing of Flood Fighting Products

Description

Within the United States, sandbags have traditionally been the product of choice for temporary, barrier type flood fighting structures. Sandbags are readily available and familiar to the general public. However, sandbag structures are labor-intensive and time consuming to construct. The U.S. Army Corps of Engineers (USACE) was therefore tasked to examine more expedient, cost effective, temporary flood fighting technologies. The USACE continues to encourage the development of innovative products to decrease long-term costs and increase the effectiveness of flood fighting.

RDFW levee during laboratory overtopping testing

Objective

In the 2004 Energy and Water Development bill, Congress recognized the need for expedient, temporary barrier type flood fighting technology. The USACE was directed to develop a comprehensive laboratory and field-testing program for the scientific testing of Rapid Deployment Flood Wall (RDFW) and other promising alternative flood-fighting technologies.

Issue

In response to this directive, the Engineering Research and Development Center (ERDC) developed a comprehensive laboratory and field-testing program for RDFW and two other alternative flood fighting products. These three commercially available flood fighting products plus sandbags were tested in the laboratory and at the Vicksburg, Mississippi, Harbor field site. Laboratory testing of Portadam, Hesco Bastion concertainer, RDFW, and sandbag structures was conducted in a specially modified wave research basin at ERDC. The products were tested in a controlled laboratory setting but under conditions that emulated real world flood fighting. The laboratory testing included the construction of skewed u-shaped structures. Each structure had an approximate length of 80 ft. Due to the restrictive height of the research basin walls; the height of each structure was limited to approximately 3 ft.

Sponsors

USACE Headquarters, Office of Homeland Security

Point of Contact

Donald Ward, PhD, ERDC Coastal and Hydraulics Laboratory, CEERD-HN-HS, 3909 Halls Ferry Road, Vicksburg, MS 39180-6199 email: Donald.L.Ward@usace.army.mil. Additional information can be found at *http://chl.erdc.usace.army.mil*.