

DAMS & BASINS

A dam is a flood control structure that impounds water. Dams generally serve the primary purpose of retaining water, while other structures such as floodgates or levees (also known as dikes) are used to manage or prevent water flow into specific land regions. Hydropower and pumped-storage hydroelectricity are often used in conjunction with dams to generate electricity. A dam can also be used to collect water or for storage of water which can be evenly distributed between locations.

References:

Engineering Regulations

- ER 1105-2-101 Planning - Risk Analysis for Flood Damage Reduction Studies
- ER 1110-2-1150 Engineering and Design for Civil Works Projects
- ER 1110-2-1806 Earthquake Design and Evaluation for Civil Works Projects
- ER 405-1-12 Real Estate Handbook CH 1-31

Engineering Manuals

- EM 1110-1-1804 Geotechnical Investigations
- EM 1110-1-1904 Settlement Analysis
- EM 1110-1-1905 Bearing Capacity of Soils
- EM 1110-1-2907 Rock Reinforcement
- EM 1110-1-2908 Rock Foundations
- EM 1110-1-3500 Chemical Grouting
- EM 1110-2-301 Guidelines for Landscape Planting at Floodwalls, Levees & Embankment Dams
- EM 1110-2-1420 Hydrologic Engineering Requirements for Reservoirs
- EM 1110-2-1421 Groundwater Hydrology
- EM 1110-2-1602 Hydraulic Design of Reservoir Outlet Works
- EM 1110-2-1603 Hydraulic Design of Spillways
- EM 1110-2-1605 Hydraulic Design of Navigation Dams
- EM 1110-2-1619 Risk-Based Analysis for Flood Damage Reduction Studies
- EM 1110-2-1901 Seepage Analysis and Control for Dams
- EM 1110-2-1902 Slope Stability
- EM 1110-2-1908 Instrumentation of Embankment Dams and Levees
- EM 1110-2-1911 Construction Control for Earth & Rock-Fill Dams
- EM 1110-2-1914 Design, Construction and Maintenance of Relief Wells
- EM 1110-2-2000 Standard Practice for Concrete for Civil Works Structures
- EM 1110-2-2002 Evaluation and Repair of Concrete Structures
- EM 1110-2-2005 Standard Practice for Shotcrete
- EM 1110-2-2006 Roller-Compacted Concrete
- EM 1110-2-2100 Stability Analysis of Concrete Structures
- EM 1110-2-2102 Waterstops and Other Preformed Joint Materials for Civil Works Structures
- EM 1110-2-2104 Strength Design for Reinforced - Concrete Hydraulic Structures

- EM 1110-2-2105 Design of Hydraulic Steel Structures
- EM 1110-2-2300 Engineering and Design - General Design and Construction Considerations for Earth and Rock-Fill Dams
- EM 1110-2-2302 Construction With Large Stone
- EM 1110-2-2400 Structural Design and Evaluation of Outlet Works
- EM 1110-2-2503 Design of Sheet Pile Cellular Structures Cofferdams & Retaining Structures
- EM 1110-2-2504 Design of Sheet Pile Walls
- EM 1110-2-2607 Planning and Design of Navigation Dams
- EM 1110-2-2611 Engineering for Prefabricated Construction of Navigation Projects
- EM 1110-2-2705 Structural Design of Closure Structures for Local Flood Protection Projects
- EM 1110-2-2901 Tunnels and Shafts in Rock
- EM 1110-2-2902 Conduits, Culverts and Pipes
- EM 1110-2-2906 Design of Pile Foundations
- EM 1110-2-3400 Painting: New Construction and Maintenance
- EM 1110-2-3506 Grouting Technology
- EM 1110-2-3800 Systematic Drilling and Blasting for Surface Excavations
- EM 1110-2-4000 Sedimentation Investigations of Rivers and Reservoirs
- EM 1110-2-4300 Instrumentation for Concrete Structures
- EM 1110-2-5025 Dredging & Dredged Material Disposal
- EM 1110-2-6053 Engineering and Design - Earthquake Design and Evaluation of Concrete Hydraulic Structures
- EM 1110-2-6054 Inspection, Evaluation and Repair of Hydraulic Steel Structures

Please note that some Engineering Manuals supersede each other, hence care must be used applying requirements of the Engineering Manuals. In addition, engineering judgment is required in the application of these manuals to certain structures. The manuals listed above can be obtained at <http://publications.usace.army.mil/publications/eng-manuals/>