

DB-2

2020

Types of Dams Common to New Hampshire

The types of dams generally built in New Hampshire include earth, earth/stonewall, rockfill, concrete gravity, concrete buttress, and timber dam. The most common type of dam found in New Hampshire is the earthen embankment dam, which has some form of concrete, stone, or timber spillway section. Masonry gravity dams are also fairly common, and concrete gravity and buttress dams are also seen in the state. Typical examples of New Hampshire dams are described below.

Embankment Dams: A dam constructed of earth or rock fill that relies on its weight and various material characteristics to control seepage for its stability.

Earthfill Dam: A dam in which more than 50 percent of the volume consists of soil.

Homogeneous Earthfill Dam: A dam constructed of uniform soil material throughout.

Zone Embankment Dam: A dam composed of zones of selected materials having different degrees of permeability. Used in most modern dams.

Rockfill Dam: A dam in which more than 50 percent of the volume consists of rock. Zoned construction is required with an impervious core or upstream blanket.

Timber Crib Dam: Generally, a dam built up of boxes, cribs, or crossed timbers filled with earth or rock and covered with timber planks.

Stone Wall Dam: A dam consisting of earth embankment within masonry rubble rock faces. The rock wall on the downstream face is usually vertical. Upstream rock walls are sometimes present and are generally vertical.

Gravity Dams: A dam constructed of concrete and/or masonry that relies on its weight for stability. (Strictly speaking, an embankment dam is a gravity dam. The term, however, has evolved to apply primarily to masonry or concrete dams.)

Concrete Dam: A dam constructed mainly of cast in place concrete.

Masonry Dam: A dam constructed mainly of shaped stone, brick or concrete blocks that may or may not be joined by mortar.

Rubble Dam: A dam constructed of unshaped, coarse stone or fragments of stones not placed in courses that may or may not be joined by mortar.

Buttress Dam: A dam consisting of a water tight upstream face, usually concrete, supported at intervals on the downstream side by a series of buttress walls perpendicular to the face. A buttress dam relies on the bracing action from the buttress for stability. There are three main types of buttress dams, these are; Ambursen (flat slab) dam, arch buttress dam, and the solid head buttress dam.

For more information relative to the design, construction, maintenance and operation of dams, please contact the NHDES Dam Bureau at (603) 271-3406 or email damsafety@des.nh.gov. General information is available at NHDES Dam Bureau Webpage. You may also visit our office at 29 Hazen Drive, Concord, NH.

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