

Kansas Administrative Regulations

Kansas Department of Agriculture—Division of Water Resources

Article 40.—Design of Earth Dams

5-40-56. Maximum design velocity for an auxiliary spillway.

(a) The maximum velocity in feet per second during the design storm for water flowing in a vegetated earthen auxiliary spillway shall be determined from the following table:

	Slope of the exit channel			
Vegetation	Erosion-resistant soils		Easily erodible soils	
	0% to 5%	5% to 10%	0% to 5%	5% to 10%
Bermuda grass and Bahia grass	8	7	6	5
buffalo grass, Kentucky blue grass, smooth brome grass, tall fescue, and	7	6	5	4

reed canary grass				
sod-forming grass-legume mixtures	5	4	4	3
weeping love grass, yellow bluestem, and native grass mixtures	3.5	3.5	2.5	2.5

(b) The maximum design velocities specified in subsection (a) may be increased by not more than 10 percent if the design frequency of use of the auxiliary spillway is not more than two percent. The maximum design velocities may be increased by not more than 25 percent if the design frequency of use of the auxiliary spillway is not more than one percent.

(c) For exit channel slopes greater than 10 percent, the applicant shall provide analyses showing both of the following:

(1) There is no more than 0.5 foot of erosion depth within 20 feet of the control section for the one-percent chance storm.

(2) The auxiliary spillway does not fail by breaching during the spillway stability design event indicated in the following table:

Hazard class	Size class	Spillway stability design event
A	1, 2, or 3	0.3 PMP
A	4	0.4 PMP
B	1, 2, 3,	0.5 PMP

	or 4	
C	1, 2, 3, or 4	PMP

(d) The provisions of paragraphs (c)(1) and (2) may be used for slopes of 10 percent or less in lieu of the maximum values specified in the table in subsection (a).

(e) The maximum allowable design velocity for water flowing over the following types of materials shall be determined from the following table:

Material	Maximum velocity allowed in feet per second
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stratified rock	8.0
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sound rock	13.0
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(f) Channel lining materials not reliant on vegetation, including concrete, riprap, and grouted riprap, may be used if the applicant demonstrates that the lining will not fail during the spillway stability design event specified in paragraph (c)(2).

(Authorized by K.S.A. 2006 Supp. 82a-303a; implementing K.S.A. 2006 Supp. 82a-302 and 82a-303a; effective May 18, 2007.)

***** Authenticated Kansas Administrative Regulation *****