

Filter Compaction and Other Practicalities of Filter/Drain Design and Construction

John W. France, P.E., D.GE, D.WRE, Independent Consultant, JWF Consulting LLC; Christina Bennetts, P.E., Geotechnical Engineer; and Harry C. Donaghy, E.I.T, Staff Geotechnical Engineer, AECOM

Guidance on gradation design of filters for dams is available from several Federal agencies and is widely used, although often not fully understood. However, successful design and construction of filters and drains is dependent not only on appropriate gradation design, but also on a number of practicalities - filter compaction methods and requirement; filter and drain zone dimensions and placement methods; material sources for filters and drains; filter fines content; drain pipe configurations; drain pipe materials; among others. Sources of definitive guidance information on many of these practicalities are more limited and less widely understood and applied. This paper will be a consolidation of available information on these topics, where published information is available, and a presentation of the author's opinions on topics where published information may not be available. The January 2020 ASDSO webinar included discussion regarding filter/drain practicalities, and it generated more questions than could be answered during the webinar. For conference presentation, this paper could be summarized in a standard 30 minute presentation, or it could be expanded into a 90-minute mini-workshop with audience participation in a Q&A/discussion session.