

## ***Interactive comment on “Sandbag Replacement Systems – Stability, Functionality and Handling” by L. Lankenau et al.***

**L. Lankenau et al.**

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Dear Referee #1,

thank you very much for your review. Both articles – the published article Massolle et al. 2018 and the present manuscript Lankenau et al. – are based on the same testing series of sandbag and sandbag replacement systems (SBRS). Therefore, some repetitions are unavoidable for an understanding of the executed investigations like the description of the testing facility and the tested constructions (chapter 1. Introduction and chapter 2. Description of tests). Furthermore, both articles conclude that SBRS show clear benefits compared to conventional sandbag systems, but proper testing and certification is needed. Nevertheless, the research focus of the manuscript Lankenau

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et al. is different from that of Massolle et al. Whereas the latter is focussing on the assessment of testing results related to barrier heights, set-up times, and seepage rates of SBRS, the present manuscript offers a broader view on functionality, handling and overall applicability of the tested SBRS. In Lankenau et al. an evaluation scheme was elaborated based on the following aspects: area of application, stability, procurement and durability, installation, dismantling and maintenance as well as logistics. These aspects are highly relevant in the development of mitigation and adaptation strategies for flood defence. Not only seepage rates are important in the planning of operational flood protection, but also questions like system applicability in a specific application area with e.g. uneven ground or required storage space for SBRS have to be answered. These results are not only highly relevant for disaster control administrations but should also be included in the development of innovative and risk-adaptive civil protection strategies. Therefore, spreading of the research results not only on administration level but also among scientists would be appreciated.

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