

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

### **Anonymous Referee #2**

Received and published: 2 September 2019

The paper addresses a highly relevant topic: i.e. the use of alternative systems for temporary flood defence. The manuscript described a series of full scale tests. This work is relevant for a technical community, also for users (e.g. governments, consultants etc.). However, the technical and scientific novelty could be more clearly addressed (see also the comments by reviewer 1). Also, the presentation of the manuscript could be improved. I provide a number of suggestions below.

Approach:

Chapter 1 It seems that the objectives are not explicitly stated in chapter 1. Page 3 presents a lot of past studies on temporary flood defences, but a clear statement of knowledge gap and objectives seems to be missing

C1

Chapter 2: I think the approach and added value could be more clearly introduced. What are typical failure modes of these systems, and which ones are you going to test? (see for a brief discussion of some failures modes also Lendering K.T., Jonkman S.N., Kok M. (2016) Effectiveness of emergency measures for flood prevention, Journal of Flood risk Management 9 (4) , 320-334.)

I would suggest to include a sketch of the basin and the test layout

I would suggest to include a table (perhaps in appendix) with some more information on the type and other properties of the systems shown in fig.2

Chapter 3: I propose to clarify which aspects (ion table 1) are based on the tests, and which are based on “manufacturers specification or “authors considerations” (p7, line 9/10)

Table 2, formulations can be more clear, e.g. “uneven ground”, do you mean whether the system “can be applied on uneven ground?”. Also, for the aspect of height of retained water you give a score (+,-,0) based on the retaining height. Why not just mention the retaining height in the table. Some systems may be very reliable, but “just” designed for low heads.

I would propose to include a discussion section, to outline limitations and next steps of testing, further development of these systems, certification and standardization of testing of SRS’.

Presentation: In general the use of English language could be improved, review by a native speaker would be beneficial, see detailed suggestions below.

The abstract can be improved, it could be more specific on the methods & tests, and findings & results and added value of the proposed approach

Some parts can be shortened e.g. descriptions on p5/6

Fig 3 is not clear in black and white

C2

Examples of sentences which could be improved:    First sentence in abstract     
Line 21 / 22 (“their geometry in connection with. . . .” is not clear to me)    Etc.

---

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2019-164>, 2019.