

Technical Support Through the Revision of the Technical Standard for Establishing Sabo Master plan for Debris Flow and Driftwood and Manual of Technical Standard for Designing Sabo Facilities Against Debris Flow and Driftwood, as well as Publication of Questions and Answers

Wataru Sakurai, Head
Naoki Matsumoto, Researcher
Sabo Planning Division, Sabo Department

Taro Uchida, Senior Researcher
Tsukasa Kudo, Guest Research Engineer

Keywords: Debris flow control, driftwood control, technical standard

1. Introduction

The Technical Standard for Establishing the Sabo Master Plan for Debris Flow and Driftwood describes the basic concept of countermeasures and the matters to be followed when establishing a plan for processing debris flow and driftwood in order to prevent landslide disasters caused by landslide gravel and driftwoods carried by debris flow. And the Technical Standard for Designing Sabo Facilities Against Debris Flow and Driftwood describes the matters to be followed when designing the countermeasures against debris flow and driftwood established based on the plan for processing debris flow and drift wood.

Since approximately nine years have passed since the last revision of the technical standard (March 2007), based on the knowledge obtained during that time, the lessons learned from the landslide disaster in Oshima Town, Tokyo, in October 2013, and “For the Strengthening of Countermeasures Against Landslide Disasters (Suggestion)” (July 2014), NILIM coordinated the revision and the Sabo Department of the Ministry of Land, Infrastructure, Transport and Tourism reported the revision in April 2016. In addition, technical assistance, such as the publication of questions and answers, was provided in order to organize the questions from prefectural and city governments and to disseminate the answers to prefectural and city governments, as well as construction consultants. In this document, such efforts are reported.



Figure 1 Damage to houses caused by driftwood in Izu Oshima

2. Outline of Revision

Based on the fact that a large amount of generated driftwood increased damage in many recent landslide disaster cases, as well as the past investigation and experimental results, we changed the method for calculating the designed amount of driftwood caught because it was considered that there was an upper limit to the amount of driftwood that could be caught since impermeable type sabo dams could not catch about half

of the driftwood carried. In addition, concerning the designed amount of driftwood caught by permeable and partially permeable sabo dams, it was clearly specified that a permeable or partially permeable sabo dam must be deployed, in principle, in order to catch all driftwood because the dams catch both earth, as well as rocks and driftwood simultaneously. And, the latest investigation results and methods concerning the calculation of sediment yield were described. Furthermore, it was clearly described that the designed catch amount must be secured through descaling irrespective of the type of dam.



Figure 2 Sabo dam (Left: Impermeable type, Right: Permeable type)

3. Outline of Questions and Answers published

As a result of asking regional development bureaus, as well as prefectural and city governments, for feedback with the revision of the technical standard, eight regional development bureaus and 22 prefectural and city governments asked questions. Major questions were as follows: (1) “Is the designed catching amount required to be secured by conducting descaling even for impermeable type sabo dam?” and (2) “Can a driftwood catching device be installed in the secondary dam of an impermeable type sabo dam?” To questions (1) and (2), we answered that (1) the designed catch amount must be ensured by conducting descaling irrespective of the type of dam and (2) the driftwood catching devices can be installed in the secondary dam of an impermeable type dam because they are included in the facilities with permeable structure. The questions asked and the answers were summarized and carried on the website of Sabo Planning Division in April 2016.¹

After they were published on the website, we received questions from 26 prefectural and city governments. In the future, we will continuously provide assistance to field engineers involved in planning and designing by summarizing and publishing such questions.

☞ For details, refer to the following:

1) Website of Sabo Planning Division:
http://www.nilim.go.jp/lab/rbg/tech_info.htm