ICS 07.060 TECHNICKÁ NORMALIZAČNÁ INFORMÁCIA August 2014

	Manuálne meranie vodnej hodnoty snehu.	**TNI CEN/TR 16588** 75 1311

Manual measurement of snow water equivalent

Táto technická normalizačná informácia obsahuje anglickú verziu CEN/TR 16588:2014.
This Technical standard information includes the English version of CEN/TR 16588:2014.

Táto technická normalizačná informácia bola oznámená vo Vestníku ÚNMS SR č. 07/14

119240

TECHNICAL REPORT

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

CEN/TR 16588

March 2014

ICS 07.060

English Version

Manual measurement of snow water equivalent

Mesure manuelle de l'équivalent en eau de la neige

Manuelle Messung des Schneewasseräquivalents

This Technical Report was approved by CEN on 3 September 2013. It has been drawn up by the Technical Committee CEN/TC 318.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. CEN/TR 16588:2014 E

Contents

Page

Foreword

This document (CEN/TR 16588:2014) has been prepared by Technical Committee CEN/TC 318 “Hydrometry”, the secretariat of which is held by BSI.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

Introduction

Snow water equivalent (SWE) measurements

Snow water equivalent (SWE), also called “water equivalent of snow”, is the depth of water that would be obtained by melting the snowpack in a given area, and is normally expressed in millimetres. In other words, SWE corresponds to the mass of snow over a given area.

Measurements of SWE in snowpack, and new snow, improve the estimation of winter precipitation, especially in areas with a sparse network of meteorological stations. The measurements are mainly made for the purpose of estimating the spatial distribution of the total water content in catchment areas, as knowledge of the SWE in river basins is fundamental for estimating the expected snowmelt runoff.

Information about snow accumulation and daily melt rate is essential in flood forecasting during the snowmelt season. SWE is also used in avalanche theory and forecasting, as well as for risk assessment of heavy snow loads. Furthermore, the data is important in glaciological mass balance studies and climate monitoring. The melt from polar ice sheets is a major factor in sea level rise.

Methods and instruments, which have been developed for determination of SWE, are listed in Annex A.

Manual SWE measurements

The first station networks with manual SWE measurements were established in the early 20th century at meteorological institutes in North America and Europe. Today the measurements are made routinely at federal and national meteorological and hydrological institutes, within the hydropower industry, and by universities, in cold climate countries all over the world. Annex B shows a list of manual SWE measuring bodies in Europe.

Automized methods have been developed to be used in remote areas, as well as to enable continuous recording, but manual measurements are still more common, as they can provide high quality data for a relatively low capital cost. The importance of manual measurements is also reflected in their use as reference to other SWE measuring methods.

1 Scope

This Technical Report defines the requirements for manual measurements of SWE over land, see ice and glaciers, under natural environmental conditions, and shows methods for calculating the spatial distribution of the data. It includes measurements with snow tubes, core drills and density cutters.