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Background to the Science and Policy Report for Tensile Membrane Structures

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Abstract

Nowadays, comprehensive design standards for tensile membrane structures exist neither on European level nor in most European countries on national levels. Currently, the development of a European design standard for membrane structures made from technical textiles and foils is under way. One of the first steps towards a new Eurocode for membrane structures is the preparation of a "Science and Policy Report", so-called "SaP-Report". It is published by the Joint Research Centre (JRC). The SaP-Report for the structural design of membranes was drafted by CEN/TC 250/WG5 "Membrane structures", titled "Prospect for European guidance for the Structural Design of Tensile Membrane Structures". This is an important milestone. The SaP-Report will be the basis of discussions and specifications in the process of creating a new standard throughout the next years. This paper gives background on the meaning, structure and content of the SaP-Report as well as the state of the art regarding the code development.

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1. Introduction

The Eurocodes are a set of European Standards for the design of buildings and other civil engineering works. The preparation and publication of the Eurocodes is mandated by the European Commission to CEN, the European

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Committee for Standardization. They are drafted by the CEN Technical Committee 250 (CEN/TC250 “Structural Eurocodes”) [1]. CEN/TC250 itself organizes a bunch of Sub Committees (SCs) and Working Groups (WGs), one for every structural field, see Fig. 1. Up to now, 10 Eurocodes with in the sum 58 separate parts are published, see Fig. 2. They are currently introduced in most of the member states, together with the National Annexes (NAs), which give details on how to apply the Eurocodes in the relevant country. At the same time the former national codes are withdrawn.

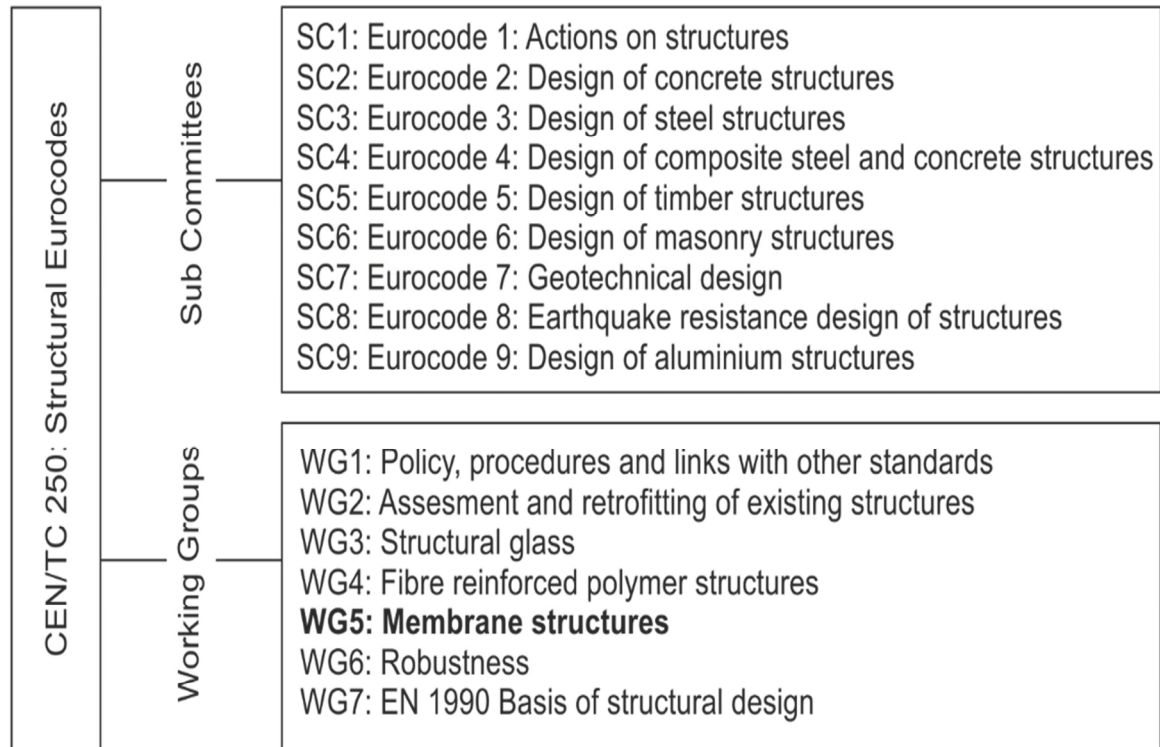


Fig. 1. Sub Committees and Working Groups of CEN/TC 250.

The wish for a harmonized European standard on Tensile Membrane Structures was brought up by the membrane structure industry, science bodies related to textile architecture and civil engineering and the TensiNet Association, a European association for tensioned membrane constructions. As a result, CEN/TC 250 “Structural Eurocodes” has implemented the Working Group (WG) 5 “Membrane Structures”.

One of the first steps towards a new Eurocode on Tensile Membrane Structures is the development and publication of the so called “Science and Policy Report” (short: SaP-Report). The present paper illustrates how the SaP-Report is embedded in the development of the new Eurocode. It gives background on the meaning, structure and content of the SaP-Report. This paper is an updated version of [2].

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