



The Development of a Eurocode “Tensile Membrane Structures”

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Summary

Up to now, no comprehensive design standard for tensile membrane structures exists either on national or European level. Currently, the development for a European design standard for tensile membrane structures made from technical textiles and foils is under way, based on the principles of EN 1990 “Basis of Design”. The work aims to establish a Eurocode “Tensile Membrane Structures”, that covers the design of pneumatically and mechanically prestressed technical textiles and foils. The paper gives background information on the requirements for a new Eurocode, the structure of the current draft standard, the state of the development with regard to the content, and it gives a “road map” to reach the objective: it explains the upcoming steps on European and national levels, points out fundamentals still to be established and necessary research work still to be conducted in order to come to a comprehensive and widely accepted design standard.

Keywords: Standardisation, tensile membrane structures, Structural Eurocodes.

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 Committee for Standardisation. 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 *Figure 1*. Up to now, 10 Eurocodes with in the sum 58 separate parts are published, see *Figure 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 At the same time the former national codes are withdrawn.

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 incorporated the Working Group (WG) 5 “Membrane Structures”.