BRITISH STANDARD

BS 4485-4: 1996

Water cooling towers —

Part 4: Code of practice for structural design and construction

Confirmed December 2011

ICS 27.100:91.080

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee B/525/15, Cooling towers, upon which the following bodies were represented:

Association of Consulting Engineers
BEAMA Ltd.
Concrete Society
Electricity Association
Engineering Employers' Federation
Federation of Civil Engineering Contractors
Health and Safety Executive
Hevac Association
Industrial Water Society
Institution of Chemical Engineers
Institution of Civil Engineers
Institution of Structural Engineers
Process Plant Association
Co-opted member

This British Standard, having been prepared under the direction of the Engineering Sector Board, was published under the authority of the Standards Board and comes into effect on 15 August 1996

The following BSI references relate to the work on this standard:
Committee reference B/525/15
Draft for comment 92/17117 DC

ISBN 0 580 25544 1

Amendments issued since publication

Amd. No.	Date	Comments

Contents

Foreword

This Part of BS 4485, which has been prepared by Subcommittee B/525/15, Cooling towers, is concerned with the structural design and construction of natural draught and mechanical draught cooling towers. It is a revision of BS 4485-4:1975, which is now withdrawn.

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

This Part of BS 4485 contains three sections: a general section relating to all towers and two separate sections covering hyperboloidal shell natural draught towers and mechanical draught towers.

The method of design of concrete shells of natural draught towers has been the subject of extensive changes. This edition differs from the previous 1975 edition as follows.

a) Wind loadings are based on hourly mean winds, as derived in BS 6399-2.

b) An amplification factor to the wind loading is introduced to take account of the fluctuations in incident wind on the tower, and the effect on resulting stresses of tower resonant response in the incident wind. The factor is derived by an empirical equation, related to design wind speed and the natural frequency of the tower. It is derived from wind tunnel test results.

c) Serviceability limit states are defined more fully and include an additional equation for buckling of the shell, and limitations to which uplift of foundations may be permitted under factored wind loading.

d) Design is related to BS 8110, including the shell support system.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations. In particular, attention is drawn to the Reservoirs Act 1975 [1] and the need to ascertain at the time of the design of the cooling tower systems whether or not the cold water basin, especially if connected to other towers, comes within its scope.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 28, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.