

BS 7843-4:2012



BSI Standards Publication

Acquisition and management of meteorological precipitation data from a raingauge network

Part 4: Guide for the estimation of areal rainfall

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Documents

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Foreword

Publishing information

This part of BS 7843 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 29 February 2012. It was prepared by Technical Committee CPI/113, *Hydrometry*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

BS 7843-4:2012 supersedes BS 7843-2.4:1996, which is withdrawn. Together with BS 7843-1:2012, it supersedes BS 7843-1.1:1996 and BS 7843-1.2:1996, which are withdrawn.

Relationship with other publications

BS 7843, *Acquisition and management of meteorological precipitation data from a raingauge network*, comprises four parts.

- *Part 1: Guide for design, development and review of a raingauge network.*
- *Part 2: Code of practice for operating raingauges and managing precipitation data.*
- *Part 3: Code of practice for the design and manufacture of storage and automatic collecting raingauges.*
- *Part 4: Guide for the estimation of areal rainfall.*

Taken together the four parts of BS 7843 provide guidance on the acquisition and management of meteorological precipitation data from a raingauge network. This part of the standard is not directly applicable to the design, development and review of a raingauge network; such guidance is given in BS 7843-1. The operation of a raingauge network is detailed in BS 7843-2, while a code of practice for the design and manufacture of storage and automatic collecting raingauges is given by BS 7843-3.

Information about this document

This is a full revision of the standard.

Use of this document

As a guide, this part of BS 7843 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.

Any user claiming compliance with this part of BS 7843 is expected to be able to justify any course of action that deviates from its recommendations.

Presentational conventions

The provisions in this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This Part of BS 7843 gives guidance on the methods commonly used in the UK for the estimation of areal rainfall. It is applicable to the use of meteorological precipitation data from a raingauge network.

This Part of BS 7843 highlights factors to be considered during the estimation of areal rainfall and presents an outline of methods (full technical details of the methodologies are not provided).

It does not cover methods using precipitation data collected by weather radars. However, discussion of their relevance is included.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 7843-1:2012, *Guide for design, development and review of a raingauge network*

BS EN ISO 772:2001, *Hydrometric determinations – Vocabulary and symbols*

3 Terms and definitions

For the purposes of this part of BS 7843, the terms and definitions given in BS EN ISO 772:2001 and the following apply.

3.1 areal precipitation

value of precipitation within a specified time interval averaged over a specified area

3.2 areal rainfall

value of rainfall within a specified time interval averaged over a specified area

NOTE UK convention is for calculations of areal rainfall to be based on total measured precipitation, where measured precipitation includes both rainfall (as measured in a raingauge; see 3.11) and the water equivalent of new snow (see BS 7843-2).

3.3 average annual rainfall (AAR)

arithmetic mean of the water equivalent of the annual sums of daily amounts of measured precipitation at a point over a period of time, usually 30 years

3.4 daily precipitation

total precipitation that accumulates over 24 h ending at 0900 UTC

NOTE For general use this total is credited against the previous day's date.

3.5 domain

geographical area with specific and common characteristics of precipitation

3.6 exposure

extent of shelter or protection from the weather

3.7 monthly precipitation

total precipitation from 0900 UTC on the first day of the month to 0900 UTC on the first day of the following month