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भारतीय मानक मसौदा
नदी घाटी परियोजनाओं में कार्य मापन की पद्धति
(बाँध और संबंधित संरचनाएं)
भाग 12 स्थलाकृतिक सर्वेक्षण
(IS 9401 भाग 12 का पहला पुनरीक्षण)

Draft Indian Standard

METHODS OF MEASUREMENT OF WORK IN RIVER VALLEY PROJECTS
(DAMS AND APPURTENANT STRUCTURES)

PART 12 TOPOGRAPHICAL SURVEYS

[First Revision of IS 9401 (Part 12)]

Measurement and Cost Analysis of Works for River
Valley Projects Sectional Committee, WRD 23

Last date for Comments:
03 April 2025

FOREWORD

(Formal clauses of the foreword will be added later)

In measurement of works of river projects a large diversity of methods exist at present according to local practices. This lack of uniformity creates complications regarding measurements and payments. Keeping in view the large amount of financial outlay involved in river valley projects and also the fact that the authorities responsible for completing these projects, are of the state level or national level, it is felt that a suitable methodology is needed for adopting uniform practices towards the measurement of works so that the scope of complications and misinterpretation of items of work is reduced, as far as possible. This standard is intended to provide a uniform basis for measuring the work done in respect of topographical surveys for river valley projects.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (second revision)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Draft Indian Standard**METHODS OF MEASUREMENT OF WORK IN RIVER VALLEY PROJECTS
(DAMS AND APPURTENANT STRUCTURES)****PART 12 TOPOGRAPHICAL SURVEYS**

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Measurement and Cost Analysis of Works for River
Valley Projects Sectional Committee, WRD 23Last date for Comments:
03 April 2025**1 SCOPE**

This standard covers the methods of measurement in respect of topographical surveys to be carried out for river valley projects.

2 REFERENCES

The standards given below contain provisions, which through reference in this text constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
IS 5497 : 2008	Guide to topographical surveys for river valley projects (<i>second revision</i>)

3 GENERAL**3.1 Clubbing of Items**

Items may be clubbed together provided the detailed description of the surveys carried out in accordance with the items enumerated in IS 5497.

3.2 Booking of Dimensions

In booking dimensions the sequence order shall be consistent and generally in the sequence of length, breadth or width and height or depth or thickness.

3.3 Unit of Measurements

All work shall be measured net in decimal system subject to the following limitations, unless otherwise stated:

- a) Linear dimensions measured to the nearest 0.01 m;
- b) Areas to the nearest 10 m^2 ; and

- c) Cubic contents shall be worked out to the nearest 0.01 m^3 .

3.4 The following work shall not be measured separately and allowance for the same shall be deemed to have been made in the description of the main item:

- a) Control surveys including control points;
- b) Laying and fixing of permanent bench marks to be linked up with the nearest Survey of India bench mark (see IS 5497);
- c) Collection of appropriate and adequate field data;
- d) Field control charts and records;
- e) List of survey bench marks and stations, duly identified. Topographical survey plans as submitted/shown, should clearly indicate the reduced level of railways PWD, CPWD, Geological Survey of India or Survey of India wherever each references are available (see IS 5497);
- f) Maintenance of proper survey records, including sketches and survey computations;
- g) Topographical and other surveys as required;
- h) Survey and other maps to requisite scale;
- j) L-sections and cross section of rivers, canals or highways, etc; and
- k) Handing over all the above records in a complete manner including the originals.

4 MEASUREMENTS OF RIVER VALLEY SURVEYS

4.1 Area Survey

The measurement of area surveys shall be done in hectares and it shall include all items as mentioned in **3.4**. These surveys shall include reservoir survey, site survey, flood control survey, catchment area survey, command area survey, and other similar surveys.

4.2 Longitudinal Section Survey

The measurement of longitudinal section survey shall be done on linear basis and it shall include all items as mentioned in **3.4**. These surveys shall include alignment of canals, drains, highways and other similar features.

4.3 Cross Section Survey

The measurement of cross section survey shall be done on linear basis and it shall include all items as mentioned in **3.4**. These surveys shall include alignment of canals, drains, highways and other similar features.