INTERNATIONAL STANDARD ISO 4064/2-1978/ADDENDUM 1

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Measurement of water flow in closed conduits — Meters for cold potable water — Part 2 : Installation requirements

ADDENDUM 1 : Parallel and multiple meter operation

Addendum 1 to International Standard ISO 4064/2-1978 was developed by Technical Committee ISO/TC 30, *Measurement of fluid flow in closed conduits*, and was circulated to the member bodies in November 1981.

It has been approved by the member bodies of the following countries :

Australia	Japan	South Africa, Rep. of
Belgium	Korea, Rep. of	Spain
Egypt, Arab Rep. of	Netherlands	Sweden
France	Poland	United Kingdom
India	Romania	USA

No member body expressed disapproval of the document.

1 Scope and field of application

This addendum to ISO 4064/2 specifies criteria additional to those given for single meter installations in ISO 4064/2 and applicable to single water meters operating either in parallel or grouped together in one location.

It is not applicable to "combined" meters for which specifications are given in ISO 7858/1.[1)]

2 Definitions

For the purpose of this addendum, the following definitions apply.

2.1 parallel operation : Operation of two or more meters grouped together and connected to a common source and a common delivery.

2.2 multiple meter operation : Operation of several meters grouped together where their inlets are connected to a common source, or their outlets to a common delivery, but not both.

3 Examples of use of meters operating in parallel and multiple meter operation

3.1 Water meters may be operated in parallel where the installation of one large meter to meet the maximum water demand or to cover the required flowrate range is impractical.

3.2 Water meters may be installed in parallel where "stand by" meters are necessary to ensure continuity of delivery and flow measurement in the case of filter blockage or water meter breakdown.

1) ISO 7858/1, *Measurement of water flow in closed conduits — Meters for cold potable water — Combined meters — Part 1 : Specification.* (At present at the stage of draft.)

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3.3 Meters are grouped together for ease of access, service and reading, where it is necessary to split a water supply into a number of branches, as for instance in a block of flats, or where it is necessary to unite a number of metered tributary flows into a common main, as in a water treatment plant.

4 Criteria for the selection of water meters

The following, together with the criteria given in ISO 4064/2, clause 2, shall be taken into account.

4.1 For meters operating in parallel, the unserviceability of one or more meters of a group shall not cause the remaining meters to operate at a flowrate in excess of their individual limit of operation.

4.2 In order to ensure that water meters of different types will operate satisfactorily in parallel, the individual characteristics of meters operating in parallel shall be compatible, for example by grouping them according to pressure loss, flowrate range and maximum working pressure. However, the installation conditions (see 4.3) for each type shall be respected.

4.3 For meters operating in parallel and multiple meter operation, the possibilities of interaction of one meter or meter type upon another to the detriment of their life and accuracy, for example pressure surges and vibration, shall be considered.

5 Associated fittings

The installation of water meters operating in parallel or in a group shall include the accessories required by ISO 4064/2 together with the following.

5.1 A means of isolating the flow through each individual water meter shall be provided. In this respect, the provisions of ISO 4064/2 concerning the requirements for isolation of the water meter installation shall apply to each individual meter.

5.2 If necessary, a filter with an isolating valve upstream may be included in the common supply.

During operation of the water meter, the upstream isolating valve shall be kept fully open.

6 Installation

6.1 Sufficient space shall be provided between and around individual water meters to permit installation, reading, servicing, *in situ* dismantling and removal of any meter, without interference from, or interfering with, the operation of any other meter in the group.

6.2 For multiple meter operation, meters shall be protected from sub-atmospheric pressure. When check valves are installed, these shall be situated downstream of the water meter.

6.3 For muliple meter operation, means shall be provided, affixed on, or immediatly adjacent to each water meter to identify the source or delivery each water meter is registering.

7 First operation of water meters

The following conditions are additional to those listed in ISO 4064/2.

7.1 When one or more water meters of a group are commencing operation, the possibility of reverse flow through other meters in the group exists. Means to avoid this happening shall be taken, for example by using pressure gauges, control valves, check valves, etc. (See clause 5 and 6.3.)

7.2 If it is necessary, in order to achieve a particular flow through an individual water meter or a particular distribution of flow through a group of water meters, to regulate the flowrate through any of the meters, this shall be achieved by means situated downstream of the water meter.