



NATIONAL PETROCHEMICAL COMPANY STANDARDS

MATERIAL STANDARD FOR METER PROVER NPCS-MS-IN-08 REVISION : 0

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OCTOBER 1992

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1 GENERAL

1.1 SCOPE

1.1.1 This standard covers the minimum requirements for the design, materials, nameplate marking, testing and shipping of meter provers.

1.1.2 The related standards referred to herein and mentioned below shall be of the latest editions prior to the date of the purchaser's enquiry.

- ANSI B 2.1 Pipe Threads.
- ANSI B 16.5 Pipe Flanges and Flanged Fittings.
- ANSI B16.20 Ring Joint Gaskets and Grooves for Steel Pipe Flanges.
- ISA Instrumentation Society of America.
- IEC International Electrotechnical Commission.
- CENELEC Comite European de Normalisation Electrotechnique.
- ASTM American Society of Testing and Materials,
- BS British Standards.
- API Manual of petroleum measurement standards, Chapter 4, proving systems.

The meter prover system shall be classified for use in hazardous locations.

1.1.3 In the event of any conflict between this standard, data sheets, codes, etc., vendor should refer the matter to the purchaser for clarifications and only after obtaining the same should proceed with the manufacture of the items in question.

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- 1.1.4 Purchaser's data sheets indicate the material for body, tube material and element: etc. However, this does not absolve vendor of the responsibility for proper selection of materials for these parts and instrument accessories with respect to the fluid and its operating conditions.
- 1.2 BIDS
- 1.2.1 Vendor's quotation shall include a detailed specification sheets for each instrument wherein should be provided all the details regarding type, construction materials for body, tube material, element, etc., and details of transmitter, switch, accessories, etc., concerning each meter prover.
- 1.2.2 All the units for various items in the vendor's specification sheets shall be the same as those in purchaser's data sheets.
- 1.2.3 All the material specifications for various parts in the vendor's specification sheets shall be to the same standards as those followed in purchaser's data sheets, e.g. ASTM, BS, etc.
- 1.2.4 Vendor shall attach a list of meter provers tag numberwise, summing up all the deviations from the purchaser's data sheets and general specifications, if there are any. Also vendor should provide reasons for these deviations wherever possible.
- 1.2.5 Vendor shall enclose catalogues given detailed technical specifications and other information for each type of meter provers covered in the bid.
- 1.2.6 Vendor's quotations, catalogues, drawings, operating and maintenance manuals, etc., shall be in the English language.
- 1.2.7 Vendor shall also quote for two years' operational spares for each meter prover and its accessories. Vendor shall also quote for any special tools needed for maintenance work.
- 1.2.8 Vendor shall also provide complete informations and details for grounding.

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1.2.9 Vendor shall quote power consumption regarding supply voltage and frequency and type of coils connection.

1.3 DRAWINGS AND DATA

1.3.1 Detailed drawings, data, catalogues and manuals required from the vendor are indicated by the purchaser in vendor data requirement sheets. The required number of reproducibles and prints should be despatched to the address mentioned, adhering to the time limits indicated.

1.3.2 After placement of purchase order, vendor shall submit final drawings for each meter prover which shall specially include the following details:

- a) Overall dimensions of the completely assembled instrument.
- b) Dimensions of clearance space required for maintenance work.
- c) Weight of the complete assembly.
- d) Any other special maintenance requirement.

All dimensions except flange size, shall be given in millimeters.

1.3.3 Additional Data to be Supplied

1.3.3.1 Purchaser shall specify maximum hourly flow rate with the volume between detector switches based on 1/2 of 1% of the maximum hourly flow rate as specified by vendor.

1.3.3.2 Vendor shall specify at the maximum flow rate the velocity of the spheroid and size and wall of measuring section and wall launching chamber. Four-way diverter valve size and rating shall also be specified.

1.3.3.3 Vendor shall specify size and type of spheroid.

1.3.3.4 Size of drain valves and drain header.

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1.3.3.5 Application data for design of a bidirectional meter prover are as follows:

a) Type of Meter to be Proved

Size:

Manufacturing & Model Number:

Pulses per cubic meter of registration:

Flow rate: Maximum
Normal
Minimum

Pressure : Maximum
Normal
Minimum

Note: Prover to be sized for maximum flow and maximum pressure.

b) Metered Liquids

Type	API Gravity	Viscosity
_____	_____	_____
- -	_____	_____
_____	_____	_____

c) Temperature

	Product	Ambient
Maximum	_____	_____
Normal	_____	_____
Minimum	_____	_____

d) Space Limitations

. Length _____
Width _____
Height _____

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