



उत्पाद मैनुअल
भा. मा. 6034: 1989 के अनुसार
ऊष्मा रोधन तेल अनुकूलन संयंत्र के लिए
दस्तावेज़ संख्या-पी एम/आई एस 6034/1/मई 2023

भारतीय मानक ब्यूरो की स्कीम-1 (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिश्रिता की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसि द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

**PRODUCT MANUAL FOR
INSULATING OIL CONDITIONING PLANTS
ACCORDING to IS 6034:1989**

Document No.-PM/IS 6034/1/ May 2023

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, ९, बहादुर शाह ज़फ़र मार्ग
Manak Bhawan, 9, Bahadur Shah Zafar Marg
नई दिल्ली- ११०००२
New Delhi – 110002



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1.	Product	:	IS 6034: 1989
	Title	:	Insulating Oil Conditioning Plants
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	<ul style="list-style-type: none"> ➤ Electric motor shall conform IS 12615:2018 ➤ All other component shall conform as per requirement of CL 5 of IS 6034:1989, as applicable <p><i>(Motors as per IS 12615 is under mandatory BIS Certification and manufacturer shall ensure that only ISI Marked Motors shall be used.)</i></p>
b)	Grouping guidelines	:	Please refer ANNEX –A
c)	Sample Size	:	<ul style="list-style-type: none"> • 6 liter of Insulating Oil shall be drawn for independent testing for following tests as per Cl. 6.2 of IS 6034: Break down voltage; Moisture content test; Gas content (3 liter before conditioning : to ascertain the initial quality of the oil +3 liter after conditioning: to ascertain the final quality of the oil) <p><i>(Notes: sample of oil should be drawn in 1 liter packing of DGA SS Container or glass bottle.)</i></p> <p>No sample of Conditioning plant shall be drawn for independent testing. However, Construction Requirements (Cl. 3), Oil conditioning system (Cl. 5), marking (Cl. 7) and evaluation of declared parameters as per Cl. 8 of IS 6034: 1989 shall also be checked on conditioning plant, during factory inspection.</p> <ul style="list-style-type: none"> • Same sampling guidelines is to be followed during surveillance inspections also.
3.	List of Test Equipment	:	Please refer ANNEX –B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX –C
5.	Possible tests in a day	:	All tests except Gas content test
6.	Scope of the Licence	:	Please refer ANNEX –D

ANNEX A

GROUPING GUIDELINES

1. “Insulating Oil Conditioning Plants” may be categorized into different varieties based on following parameters:
 - Rated Output of the plant in litres per hour
 - Minimum Suction Head in meters at rated output
 - Full-load heater rating in kW
 - Power requirements of the motor used
 - Quantity of oil in litres required for the filling

2. Based on the above classification, each variety shall be tested for considering GoL/CSoL. The information given by manufacturer on the above parameters, in accordance with Cl. 8 of IS 6034: 1989, will be evaluated against the values declared by the firm.

3. The Firm shall declare the varieties of “Insulating Oil Conditioning Plants” intended to be covered in the Licence. The Scope of the Licence may be restricted based on the Manufacturing and testing capabilities of the Manufacturer.

4. During the operation of the licence, BOs shall ensure that all the varieties covered in the licence are tested in rotation, to the extent possible.

Annex B
List of Test Equipment

Major test equipment required to test as per the Indian Standard

Sr. No	Tests used in with Clause Reference	Testing Equipment
1.	Break down voltage, Cl. 6.2	Break down voltage test Set up including Voltage regulator, Step up transformer, Switch system, Energy Limiting devices etc. as per IS 6792
2.	Moisture content measurement test set up, Cl. 6.2	Moisture content measurement test set up
3.	Gas content test set up, Cl. 6.2	Gas content test set up

The above list is indicative only and may not be treated as exhaustive

ANNEX C

Scheme of Inspection and Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipments.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING AND MARKING – As per the requirements of IS 6034: 1989. The Standard Mark, as given in the Schedule of the licence, shall be marked on each Conditioning Plant provided always that the Plant thus marked conforms to all the requirement of the specification.. In addition, the licence no. CM/L-_____ and details of BIS website shall be marked at an appropriate place as follows: “For details of BIS certification please visit www.bis.gov.in”

4. CONTROL UNIT- All the hoses manufactured under similar conditions from same consignment of raw material in a day, shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

6. REJECTIONS – Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1

(1)				(2)	(3)		
Test details				Test equipment requirement R: required (or) S: Subcontracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No of sample	Frequency	Remarks
		Clause	Reference				
3	Constructional requirements	3	IS 6034	R	Manufacturer shall exercise adequate levels of control to ensure that entire production should conform to the Standard. Appropriate records of testing indicating conformity shall be maintained		
4	Material	4	IS 6034 IS 12615	S	One	Each Consignment	Electric motor shall conform IS 12615:2018 <i>Motors as per IS 12615 is under mandatory BIS Certification and manufacturer shall ensure that only ISI Marked Motors shall be used</i> For other materials, No further testing is required, if material received is ISI marked or TC received. Wherever applicable, materials used shall be complied with Quality Control Orders in force.
5	Oil Conditioning system	5	IS 6034	S	Each plant		For bought out components, no further testing is required, if material received is ISI marked or TC received
6.2	Breakdown Voltage	6.2	IS 6034	R	Each plant		--
6.2	Moisture Content	6.2	IS 6034	R	Each plant		
6.2	Gas content test	6.2	IS 6034	S	Once in 6 months		
8	Evaluation of	8	IS 6034	R	Each plant		--

	parameters against declared values					
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Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.

ANNEX D
SCOPE OF LICENCE

Licence is granted to use Standard Mark as per IS 6034:1989 with the following scope:	
Name of product	Insulating Oil Conditioning Plant
Rated Output of the plant in litres per hour	
Minimum Suction Head in meters at rated output	
Full-load heater rating in kW	
Power requirements of the motor used	
Quantity of oil in litres required for the filling	