कार्यालय संचालक, मध्यप्रदेश राज्य बांस मिशन

खेल परिसर 74 बंगला, भोपाल (मध्यप्रदेश)

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क्रमांक / बांसमिशन / 2023 / 271 भोपाल, दिनांक : 07/02/2023

प्रति,

अपर प्रधान मुख्य वनसंरक्षक
(सूचना प्रौद्योगिकी)
मध्यप्रदेश वन विभाग, सतपुड़ा भवन, भोपाल।

विषयः– विज्ञापन जारी करने के संबंध में – मध्यप्रदेश में निजी क्षेत्र में कार्यरत बांस के ट्रीटमेंट एवं सीजनिंग प्लान्ट को एसोसिएट करने के संबंध में।

––00––

कृपया संलग्न विज्ञापन वन विभाग व बांस मिशन की वेबसाईट पर अपलोड करवाने का कष्ट करें।

संलग्नः–उपरोक्तानुसार

(डॉ. यू.के. सुबुद्धि) 7/2/2023
अपर प्रधान मुख्य वनसंरक्षक एवं
मुख्य कार्यपालन अधिकारी,
म.प्र. राज्य बांस मिशन

कार्यालय संचालक, मध्यप्रदेश राज्य बांस मिशन

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मध्यप्रदेश शासन के वन विभाग द्वारा वन क्षेत्रो में कराये जा रहे रोपण कार्यो के लिये फेंसिंग कार्य के लिये बांस पोल्स का उपयोग किया जा रहा है। बांस पोल्स की गुणवत्ता एवं मापदण्ड तथा वर्तमान में निर्धारित क्रय दर निम्नानुसार है–

क्र.	बांस पोल्स	मापदण्ड एवं गुणवत्ता		दर प्रति पोल रू.	टीप
1	2	3	4	5	6
1.	ग्रेड 'ए'	लंबाई 2.10 मी. पतले सिरे की न्यूनतम गोलाई 25 से. मी.	मोटे सिरे से क्रमशः 60 से.मी. , 90 से.मी. 120 से.मी. 160 से.मी. तथा 200 से.मी. दूर पर 2 मि.मी. को होल तथा मोटे सिरे पर 50 से.मी. तक डामर से पेंट	106.70	बांस पोल्स का उपचार IS 9096:2006 के बिंदु 5.2 की तालिका 1 अनुसार किया जावे (संलग्न)
2.	ग्रेड 'बी'	लंबाई 2.10 मी. पतले सिरे की न्यूनतम गोलाई 17 से. मी.		105.00	

उपरोक्त दरों में बांस उत्पाद निर्धारित जी.एस.टी. तथा परिवहन व्यय सम्मिलित नहीं है। निजी क्षेत्र में स्थापित बांस ट्रीटमेंट एवं सीजनिंग प्लांट यदि निर्धारित गुणवत्ता एवं मापदण्ड (परिशिष्ट – 1) के बांस पोल्स उपरोक्त दरों पर वन विभाग को प्रदाय करना चाहते है तो बांस मिशन में पंजीयन करवाने के लिये दिनांक 28.02.2023 तक निम्नलिखित पते पर अपना आवेदन भेजे–

कार्यालय मिशन संचालक,
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परिशिष्ट–1

बांस पोल के मापदण्ड व गुणवत्ता

बांस पोल दो श्रेणियो में ग्रेड ए. व ग्रेड बी. अनुसार निम्नानुसार मापदण्डो के तहत बनाये जायेंगे–

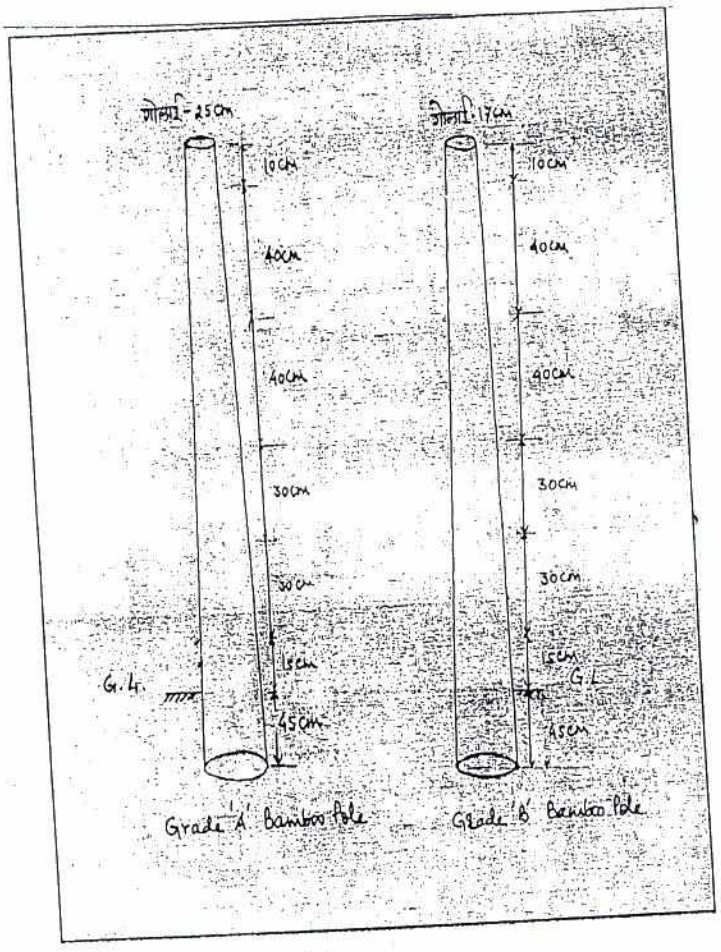
1- बांस की लंबाई 2.1 मीटर, पतले सिरे की गोलाई ग्रेड ए. पोल के लिए न्यूनतम 25 से.मी. तथा ग्रेड बी. पोल के लिए न्यूनतम 17 से.मी. होगी। यथा संभव पोल सीधा होगा।

2- दी गयी डिजाईन अनुसार इसमें मोटे सिरे से क्रमशः 60 से.मी., 90 से.मी., 120 से.मी., 160 से.मी. तथा 200 से.मी. दूरी पर 2 मि.मी. व्यास का छेद किया जायेगा जिसमें बांस की कीले फॅसाकर बाइडिंग वायर के साथ बार्बेडस वायर बांधा जा सकेगा।

3- बांस का उपचार बैक्यूम–प्रेशर–इम्प्रेगनेशन इकाई द्वारा किया जायेगा जिसमें प्रत्येक इंटर नोड में छेद कर (यदि बिंदु 2 अनुसार छेद किया गया है तो आवश्यक नहीं) बोरेक्स–बोरिक एसिड के 3% घोल में इसे 3–4 घंटे उपचारित किया जायेगा।

4- पोल के मोटे सिरे से 50 से.मी. लंबाई तक डामर से पेंट किया जायेगा। इसका 45 से.मी. लंबाई तक का हिस्सा जमीन में सीमेंट कांक्रीट के साथ जाम किया जायेगा।

5- पोल के ऊपरी सिरे को गांठ के ऊपर से इस प्रकार काटा जायेगा जिससे इसमें वर्षा ऋतु का पानी न भरने पाये यदि ऊपरी सिरे में किसी प्रकार का गढ्ढा है तो ऊपरी सिरे पर बांस के ठोस टुकड़े से इसे इस प्रकार पैक किया जायेगा जिससे इसमें पानी न भरने पाये।



(बी. बी. सिंह)
भा.व.से.

IS 9096 : 2006

भारतीय मानक

संरचनात्मक प्रयोजनों के लिए बाँस का संरक्षण — रीति संहिता

(पहला पुनरीक्षण)

Indian Standard

PRESERVATION OF BAMBOO FOR STRUCTURAL PURPOSES — CODE OF PRACTICE

(First Revision)

ICS 71.100.50; 79.020

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Price Group 2

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Timber and Timbers Stores Sectional Committee had been approved by the Civil Engineering Division Council.

Bamboo which occupy a prominent place in every day life, is used for structural purposes like posts, pole fencing, scaffoldings, house buildings, etc. Bamboo compares favourably with such timber as 'sal' and 'teak' in strength properties. But bamboo has low natural durability (1 to 3 years) against attacks by fungi and insects. They are very difficult to be treated by normal preservative methods in dry condition since their outer and to some extent inner membranes are impermeable to liquids. The treatment of bamboo is, therefore, best carried out in green condition.

The standard was first published in 1979. This revision is based on experience gained since publication of the standard. In this revision, preservatives such as copper-chrome-zinc-arsenic composition and chromated zinc chloride have been deleted. Copper-chrome-zinc-arsenic (CCZA) composition has been deleted as it is similar to copper-chrome-arsenic (CCA) composition and additional zinc will not have any difference in toxicity. Chromated zinc chloride has been deleted as zinc has a lower toxicity than copper. Zinc chloride being hydroscopic, any unreacted salt in wood causes sweating of treated bamboo products. Further, the recommended practice with regard to preservatives, their concentration, absorption and methods of treatment for various structural uses have also been redefined.

In the formulation of this standard due weightage has been given to international co-ordination among the standards and practices prevailing in different countries in addition to relating it to the practices in the field in this country.

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 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

PRESERVATION OF BAMBOO FOR STRUCTURAL PURPOSES — CODE OF PRACTICE

(First Revision)

1 SCOPE

1.1 This standard covers types of preservatives and treatment procedures of bamboos used for structural purposes like post, scaffoldings, house building, walls, trusses, etc. It also includes recommendations on the choice of treatment depending upon the various uses to which the bamboo is put.

1.2 This standard does not cover the treatment of bamboo for non-structural purposes, which is covered in IS 1902.

2 REFERENCES

The following standards 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:

IS No.	*Title*
218 : 1983	Specification for creosote oil for use as wood preservatives (*second revision*)
401 : 2001	Preservation of timber — Code of practice (*fourth revision*)
1902 : 2006	Preservation of bamboo and for non-structural purposes — Code of practice (*second revision*)
10013	Specification for water soluble type wood preservatives:
(Part 1) : 1981	Acid-copper-chrome (ACC) wood preservative
(Part 2) : 1981	Copper-chrome-arsenic (CCA) wood preservative
(Part 3) : 1981	Copper-chrome-boron (CCB) wood preservative

3 RECOMMENDED PRESERVATIVES

The following are the various preservatives recommended for treatment of bamboos (*see also* IS 401)

a) *Coal Tar Creosote* — This is a fraction of coal tar distillate with a boiling point range above 200°C and is widely used admixed with fuel oil. A creosote fuel oil mixture in the ratio of 50 : 50 is found suitable. The fuel oils ensure stability to creosote against evaporation and bleeding from the treated bamboo. The creosote used shall conform to IS 218.

b) *Copper-Chrome-Arsenic Composition* — A typical composition of this preservative comprises of copper sulphate ($CuSO_4.5H_2O$), arsenic pentoxide ($As_2O_5.2H_2O$) and sodium or potassium dichromate ($Na_2Cr_2O_7.2H_2O$ or $K_2Cr_2O_7 2H_2O$) in proportion of 3 : 1 : 4; conforming to IS 10013 (Part 2).

c) *Acid-Curpric-Chromate Composition* — A typical composition of this preservative comprises of 1.68 parts chromic acid (Cr_2O_3) (equivalent to 2.5 parts of sodium dichromate), 50 parts of copper sulphate ($CuSO_4.5H_2O$) and 47.5 parts of sodium dichromate ($Na_2Cr_2O_7.2H_2O$); conforming to IS 10013 (Part 1).

d) *Copper-Chrome-Boron Composition* — A typical composition of the preservative comprises of boric acid (H_3BO_3), copper sulphate ($CuSO_4.5H_2O$) and sodium or potassium dichromate ($Na_2Cr_2O_7.2H_2O$ or $K_2Cr_2O_7.2H_2O$) in the proportion of 1.5 : 3 : 4; conforming to IS 10013 (Part 3).

e) *Boric-Acid-Borax* — This has been used successfully against lyctus borers. A mixture in ratio of 1 : 1.5 is found more suitable.

f) *Copper-Zinc-Naphthenate/Abietates* — These are copper and zinc salts of naphthenic/abietic acid.

4 METHODS OF TREATMENT

Details of the method of treatment of bamboo by surface application (brushing, dipping), vacuum/ pressure process, hot and cold process, Fast fluctuating pressure (FFP) process and Boucherie process are given in IS 401. In addition to the above, diffusion process, modified Boucherie processes and Steeping or Butt end treatment method as applicable to the treatment of bamboo (non-structural) given in IS 1902 may also be employed.

5 CHOICE OF PRESERVATIVE AND METHOD OF TREATMENT

5.1 The choice of preservative and the method of treatment depend upon the use to which the treated material is put.

5.2 The recommended practice with regard to preservative, their concentration, requisite absorption and method of treatment of bamboo are given in Table 1.

6 SAMPLES

6.1 Representative samples for test of preservative shall be cut from the treated bamboos for purpose of chemical analysis. The weight of the sample shall be about 100 g for every 100 kg of bamboo treated.

6.2 The sample obtained as in 6.1 shall be powered either by hand file or by means of a suitable powdering machine or converted into small chips (about 10 mm long, 2 mm wide and 1 mm thick) by using a knife. The powder or chips thus prepared shall be thoroughly mixed and a liquid of 10 to 20 g taken for chemical analysis.

7 TESTING OF PRESERVATIVE IN TREATED MATERIAL

Testing of preservative in treated material shall be carried out in accordance with IS 1902.

Table 1 Recommended Preservatives, Their Concentration and Absorption and the Method of Treatment of Bamboo for Structural Purposes

(Clause 5.2)

Sl No.	Structural Uses of Bamboo	Recommended Preservatives (see 3)	Concentration of Preservatives percent	Absorption of Preservatives kg/m³	Method of Treatment
(1)	(2)	(3)	(4)	(5)	(6)
i)	Posts, pole fencing, etc, exposed to weather and in contact with ground:				
	a) Dry bamboo	a	—	80-128	Hot and cold, vacuum/Pressure process
		b	6-8	8-12	Vacuum/Pressure process
		c and d	8-10	10-14	Vacuum/Pressure process
	b) Green bamboo	b	8-10	8-12	Diffusion, Boucherie process
		c and d	8-10	10-14	Modified Boucherie process, Butt end treatment
ii)	Scaffoldings, ladders, bridges, etc, exposed to weather but not in contact with ground				
	a) Dry bamboo	a	-	48-80	Hot and cold, vacuum/pressure process
		b	5	5-8	Vacuum/Pressure process
		c and d	6-8	6-10	Vacuum/Pressure process
	b) Green bamboo	b	6-8	5-8	Modified Boucherie process for 6 h and diffussion process for 20-25 days, FFP process
		c and d	6-8	6-10	
iii)	Housing, building, walls, rafters, trusses, purlins, etc, under cover				
	a) Dry bamboo	d		48-80	Hot dipping, hot and cold, vacuum/pressure process
		c and d	5	6	Steeping, hot and cold, vacuum/ pressure process
		c	4	5	Steeping, hot and cold, vacuum/ pressure process

Table 1 (*concluded*)

Sl No.	Structural Uses of Bamboo	Recommended Preservatives (*see* 3)	Concentration of Preservatives percent	Absorption of Preservatives kg/m³	Method of Treatment
(1)	(2)	(3)	(4)	(5)	(6)
		f	5 percent as copper (for Copper Napthanate/ Abietates)	0.4 as Cu	Dipping, brushing
			6 percent as Zinc (for Zinc Napthanate/ Abietates)	0.6 as Zn	Dipping, brushing
	b) Green bamboo	c, d and e	5	5-6	Diffusion process, Modified Boucherie process, FFP process
iv)	Ceiling, door and door panelling:				
	a) Dry bamboo	c, d	3	4	Steeping, hot and cold, vacuum/ pressure process
		e	4	5	Steeping, hot and cold, vacuum/ pressure process
		f	4 percent as copper (for Copper Napthanate/ Abietates)	0.4 as Cu	Dipping, brushing
			5 percent as Zinc (for Zinc Napthanate/ Abietates)	0.6 as Zn	Dipping, brushing
	b) Green bamboo	c, d, e	5	4	Diffusion process, Boucherie process, FFP process

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed, if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc : No. CED 9 (7211).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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