

**Minutes of meeting of Technical Specification Committee held on 18.11.2009 under the  
Chairmanship of Dr. Shiv Lal, Special DGHS (PH)**

In continuation of the earlier meeting of the Technical Specification Committee held on 15.10.2009, a meeting was again held on 18.11.2009 in view of the MOH observations to deliberate on the agenda on the technical specifications of LLINs.

The following members were present.

1. Dr. D.Kanungo, Addl. DG (Stores), MSO
2. Sh. A.K.Kamra, Director, Procurement, Dte. GHS, Nirman Bhawan.
3. Dr. V.K.Kothari, IIT, New Delhi
4. Dr.V.K.Saxena, Joint Director & Head, Centre for Medical Entomology and Vector Management, NICD Delhi
5. Dr. G.P.S.Dhillon, Director, NVBDCP

Dr. K.Raghvendra, Deputy Director, NIMR represented Dr. V.K.Dua, Director Incharge, NIMR.

**The following Technical Specifications of LLINs were finalized.**

WHOPES recommended Long Lasting Insecticidal Nets

Must be registered in India under Insecticide Act, 1968

**Dimensions**

The LLINs shall conform to the following dimensions:-

**Family size**

Length	: 180 ± 5 cm
Width	: 130 ± 5 cm
Height	: 150 ± 5 cm
Reinforcement at bottom	: 28 ± 3 cm

**Additional Requirements**

Fibre characteristics	: Minimum 100 denier
Gram per square meter	: Minimum 40
Bursting strength	: HDPE – 350 Kpa , Polyester – 250 Kpa
Mesh size	: HDPE – 56 holes per square inch, Polyester – Minimum 154 holes per square inch
Color	: White / Khaki / Blue
Wash Resistance	: up to 20 washes
Shelf life	: Minimum 2 years

## MANUFACTURE AND WORKMANSHIP

### (i) Wall and Top

The top shall be made from single joint piece of netting in case of Family size mosquito nets. The walls shall be made from one piece of netting and shall be closed with lapped seam and the seam shall be at one of the corners. One edge of the netting of the wall shall be attached to the netting at the top by means of a plain seam.

### (ii) Reinforcement at Bottom

The Height of the reinforcement should be  $28 \pm 3$  cm. The bottom edge of the walls shall be reinforced by stitching a strip of same netting fabric of matching shade as the case may be with netting by a lapped seam.

### (iii) Tying Loops

The nets shall be provided with same fabric stitched tying loops six in case of family size bed nets. The loop shall be 12-15 mm wide and made of same fabric as of the wall and top. In case of the nets ordered with bottom reinforcement, four tying loops shall be provided at the seam joining the bottom reinforcing piece.

### (i) Stitching

The nets shall be made with lock stitch of even tension throughout and loose ends securely fastened off. The number of stitches per decimeter shall be 30 to 38. The stitching shall be made by using same fabric sewing thread of matching shade.

## MARKING

### (i) Standard Mark

The LLINs shall bear the standard mark - **NVBDCP SUPPLY- NOT FOR SALE** printed or tagged on **top and each wall** of the bed net. The size of mark or tag should be 10 x15 cm and would be placed  $30 \pm 1$  cm above the bottom edge of the walls, at a distance of  $50 \pm 2$  cm. Standard marking printing is not possible as in case of HDPE Net as ink does not stay at all on these materials due to elastic and unformed shape and also due to bigger mesh size such stamps are not at all visible. Recommend to be printed on Tag.

(ii) The following information shall be indelibly marked on cloth label securely stitched at any top corner of the net.

- (a) Size of the net, namely overall length (cm), overall width (cm), overall height (cm)
- (b) Name of fibre of netting and its variety number.
- (c) Mesh size
- (d) Month and year of Manufacturer.
- (e) Any other information mentioned in Contract/PO/statutory provisions.

The above information along with number of pieces shall also be printed/stenciled on each bale.

## PACKING

The LLINs shall be packed as stipulated in the contract or purchase order. Recommended procedure is given below-

*Handwritten signatures and dates:*

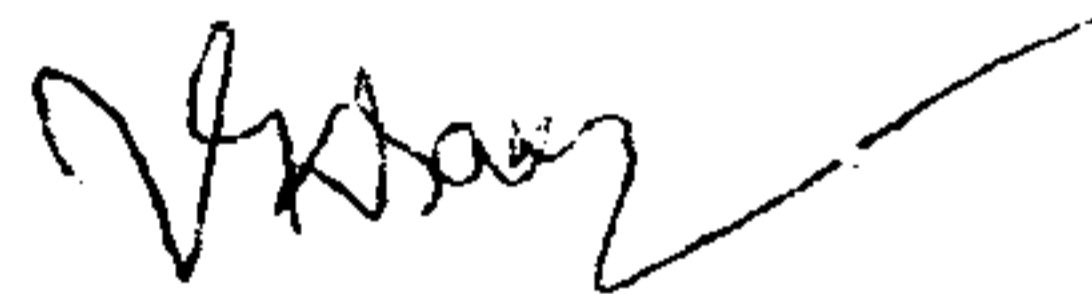
18/11/09  
18/11/09  
K.R.L.  
18/11/09

25/50 LLINs depending on size shall be placed over one another and tied with cotton/polyester/nylon/HDPE, 2-3 mm diameter twine/rope to form a bundle. 2/4 such bundles shall be wrapped in low density polyethylene film of 60µm thickness (150 gauge) or any other suitable material as agreed to between the Purchaser and the supplier. The bale shall be stitched by HDPE/Nylon twine/rope with not less than 12 stitches per dm taking care that nets do not get pierced. The bale shall be strapped along with clips.

### SAMPLING

The sampling procedure should be as per ISO, which is as follows.

Nos. of Nets in Batch	Sample size	Maximum sample extraction from each batch	<u>Accept</u> No. of faulty samples	<u>Reject</u> No. of faulty samples	Sample Size for Lab. Test	
					Polyethylene	Polyester
Up to 10,000	80	4 Nets	5 or less	6 or more	5	8
From 10,001 – 35,000	125	4 Nets	7 or less	8 or more	5	8
From 35,001 – 70,000	200	4 Nets	10 or less	11 or more	5	8
Over 70,000	Stratified sampling. Each stratum not exceeding 70,000 and use the sampling plan as above.				5	8



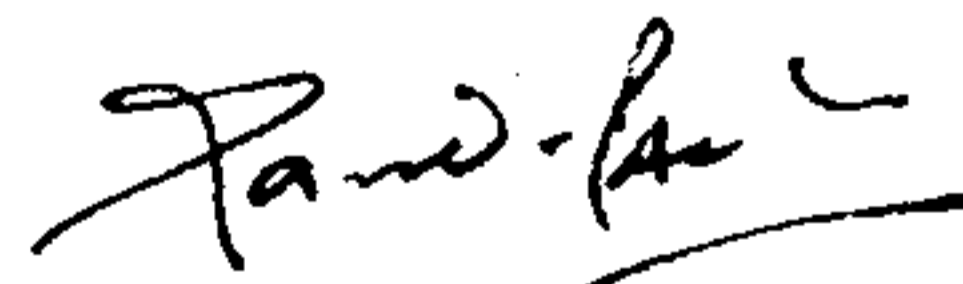
(Dr. V.K. Saxena)

CME & VC, NICD



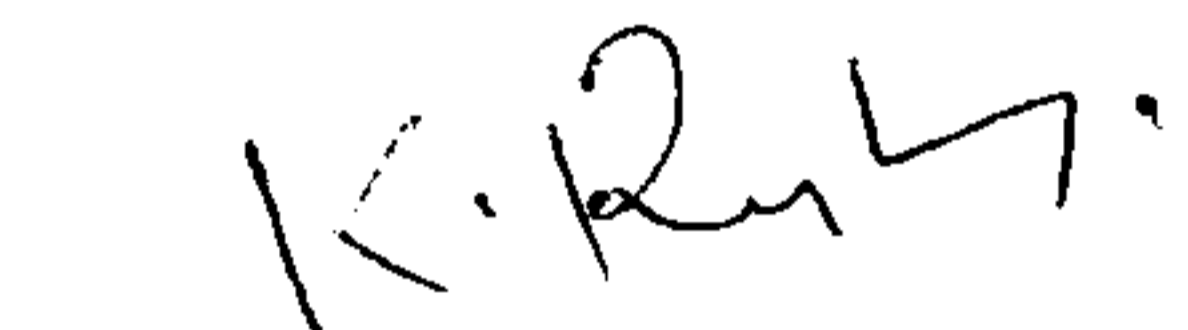
(Dr. A.K. Kamra)

Director, Procurement



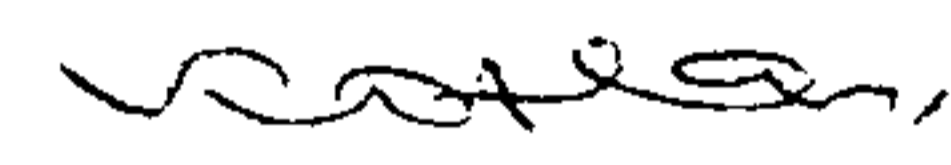
(Dr. G.P.S. Dhillon)

Director, NVBDCP



(Dr. K. Raghvendra)

DD, NIMR



(Prof. V.K. Kothari)

IIT, Delhi



(Dr. D. Kanungo)

Addl. DG (Stores)



Dr. Shiv Lal

Special DGHS (PH)