

**QUALITATIVE REQUIREMENTS (QRS)/ SPECIFICATION OF  
MAHILA POLYCARBONATE LATHI**

S. no.	Name	QR Specifications	Trial Directives
1.	<b>Nomenclature</b>	Mahila Polycarbonate Lathi	
2.	<b>Uses</b>	1) Mahila PC Lathi shall be used by Mahila troops during their deployment. It is self defence equipment for troops during their deployments in Riots or Riot like situations. 2) PC Lathi for Mahila troops required to be light weight and made of good quality material. It should have the resistance, flexible and easy to carry.	
3.	<b>Colour</b>	Should be Black	To be checked by BOO/Line Committee
4.	<b>Weight</b>	290-300 gm	
5.	<b>Carriage</b>	Hand Held / Integrated into polycarbonate shield	
6.	<b>Shelf life</b>	06 years ( polycarbonate part minimum) Operational Life of LED: Approx 24hrs upon charging once Life of Continuous Spark:30minutes(minimum) Life of Battery: Minimum 1000charging cycles	
7.	<b>Shape</b>	Cylindrical shape.	
8.	<b>Dimensions</b>	Diameter	Inner :19mm Outer:25mm
		Length	900 mm with tolerance + 15 mm and - 10mm including handgrip and shoe.
		Wall thickness	3mm

  
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9.	<b>Materials of construction</b>	1) The main body of polycarbonate lathi shall be made of high impact resistant/ natural polycarbonate material. It may contain additives, processing aids and stabilizers (for example UV absorbers).		Certification from any NABL accredited Lab for the test conducted as per IS specified at column-4 with results as per values shown in column-3 (a), (b), (c), (d) & (e) of the table at SI No 8.		
		2. The material used for manufacture of polycarbonate sheet shall comply with the requirements as per column-3 when tested as per the prescribed IS of Column – 4				
		Sl. No.	Characteristics		Requirement	Method of test, Ref to IS/Annx
		(a)	<b>Melt Flow Index</b> , gram/10 min. ( at 300° C under 1.2 Kg load when measured after pre-drying of the material at 120 ± 5°C upto 4 hrs.)		i)1.5 to 8 (for extrusion/ Thermoforming)  ii)8 to 15 (for injection moulding)	IS 13360 (Part 4 / Sec 1 )
		(b)	<b>Specific Gravity</b>		1.19 to 1.22	IS 13360 (Part 3 Section 1)
		(c)	<b>Flexural Modulus</b> , Min, Mpa ( With crosshead speed of 1.2 mm/min and a span to depth ratio of 16 to 1 (test specimen size, 04 mm x 10 mm)		2200	IS 13360 (Part 5 Section 7)
		(d)	<b>Izod Impact Strength</b> , notched , min, kJ/m <sup>2</sup> (test specimen thickness of 03 mm and notch radius of 0.25 mm)		60	IS 13360 (Part 5 Section 4)
(e)	<b>Deflection Temperature</b> under load at 1.82 MPa, Min, °C	120	IS 13360 (Part 6 Section 17)			



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10.	<b>Polycarbonates sheet characteristics</b>	<p>1) Polycarbonate sheet formed from the above specified material shall comply with the requirements as per column-3 when tested as per the prescribed IS of Column-4 in the table below:-</p> <table border="1" data-bbox="536 338 1225 927"> <thead> <tr> <th>Sl. No.</th> <th>Characteristics</th> <th>Requirement</th> <th>Method of test, Ref to IS/Annx</th> </tr> <tr> <td>(1)</td> <td>(2)</td> <td>(3)</td> <td>(4)</td> </tr> </thead> <tbody> <tr> <td>(a)</td> <td>Dart drop Impact, Minimum J (at 27degree C)</td> <td>150</td> <td>Annx B of IS 14443</td> </tr> <tr> <td>(b)</td> <td>Light Transmission, percent, Minimum</td> <td>83</td> <td>IS 13360 (Part -9 Section - 5)</td> </tr> <tr> <td>(c)</td> <td>Flammability Test (test specimen thickness 3.18 mm +/- 0.13 mm)</td> <td>94 HB class</td> <td>IS 13360 (Part - 6 Section - 5)</td> </tr> </tbody> </table>	Sl. No.	Characteristics	Requirement	Method of test, Ref to IS/Annx	(1)	(2)	(3)	(4)	(a)	Dart drop Impact, Minimum J (at 27degree C)	150	Annx B of IS 14443	(b)	Light Transmission, percent, Minimum	83	IS 13360 (Part -9 Section - 5)	(c)	Flammability Test (test specimen thickness 3.18 mm +/- 0.13 mm)	94 HB class	IS 13360 (Part - 6 Section - 5)	
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11.	<p><b>(a) Protective Shoe/Stud specifications</b></p> <p><b>(b) Handgrip</b></p> <p><b>(c) Wrist band</b></p>	<p>(i) Length 25mm +/- 5mm. Ring shape,  (ii) Properly fixed with lathi, firm, fire and water resistant.  (iii) Made of Polymeric/Fibre or Rubber.  (iv) Water should not be able to enter from bottom side., when used in zones with water clogging, puddles, etc</p> <p>(i) Length 14cm +/- 10 mm.</p> <p>(i) A wrist band made of cotton/ nylon shall be providing on the top of handgrip for providing security from lathi snatching.  (ii) Length- loop diameter should be 6 to 8 inch</p>	<p>1) To be check by BOO/ Line committee  2) Certificate from any NABL accredited lab for fire/Water resistant of hand grip and protective shoe</p>																				

  
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12.	Performance requirements of Mahila PC Lathi	(a)Resistance to Environmental Stress Cracking:- Environment Stress Cracking Resistance (ESCR) test shall be performed on polycarbonate body of the Lathi (with Protective coating) by constant strain method as per IS 1336(Part 8/Sec 9).	Certificate from any NABL accredited Lab
		(c)Resistance to Surface Abrasion:- The resistance of Polycarbonate lathi to surface abrasion shall be tested in accordance with ASTM D 1044 for 100 cycles under 500g load. Haze of test specimen shall not be more than 20 percent.	

As specified in the figure, the Mahila Polycarbonate Lathi has some added features by means of its electrical components, providing better deterrence against violent mob.

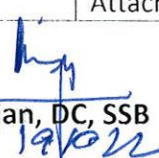
The Lathi comes well equipped with features meant to deter and discourage the mob and mischief mongers, with its electrical discharge making a buzzing noise, threatening the approaches around. Also it contains a charged source (battery) that comes with inbuilt charger for easy recharging.

The details of the same are as follows:

#### SPECIFICATIONS FOR ELECTRICAL COMPONENTS

1. Power Supply	3.7 Volts 3000 mAH, Lithium ion rechargeable Cell
2. Resistance Wires Glass Sleeves Output Wire Push Buttons	100 Ohms (2 Nos.) 0.5 sq mm multi strand copper core flexible insulated 3 Types with different ID 1.0 mm, (19 G) super enamelled Copper 12 * 12 * 10 MM
3. Operational Life of LED Life of Continuous Spark Life of Battery	APPROX. 24 HRS. CONTINUOUS 30 Minutes (Minimum) Minimum 1000 charging cycles.
4. Hand Grip, Wire Separator & Bottom Shoe Material	Through Injection Moulds Polycarbonate (Virgin)
5. Baton Material	POLYCARBONATE PIPE
6. Sizes: As Per Drawings Enclosed	Attached

  
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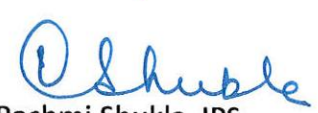
  
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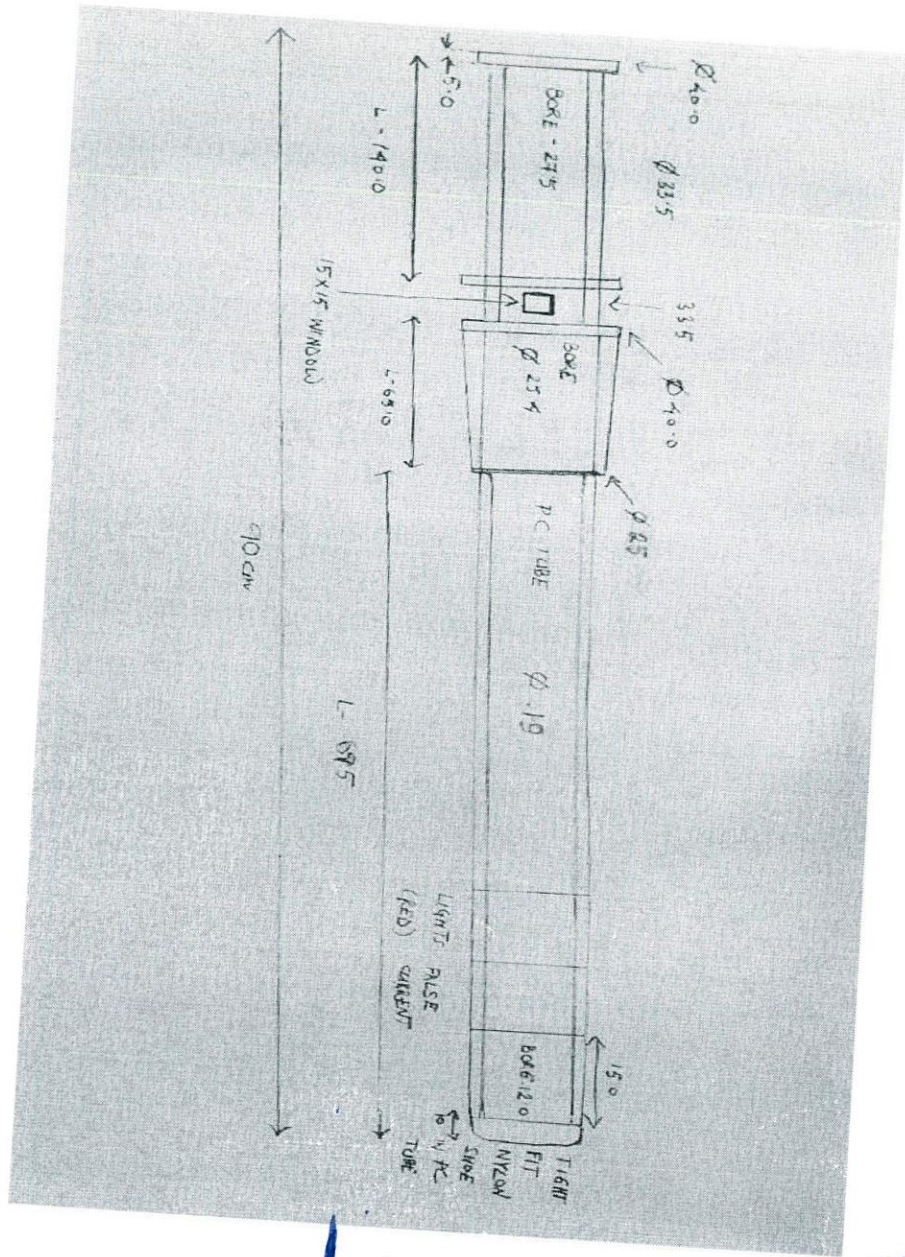
  
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# DIPAS MAHILA POLYCARBONATE LATHI



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