



West Bengal State Electricity Distribution Company Limited

(A Government of West Bengal Enterprise)

CIN no: U04109WB2007SGC113473

Website: www.wbsedcl.in

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CIRCULAR

Sub: Specification, standards, requisite quantity, required place of installation &/ availability along with some other relevant information of Personnel Protective Equipment (PPE) and Safety Equipment including Fire Extinguishers.

To ensure availability & use of proper PPE and Safety Equipment during erection, repair, operation & maintenance works in WBSEDCL's power distribution network including power stations, substations & that of Fire Extinguishers at WBSEDCL's various establishments yardsticks furnished in this Circular are to be followed scrupulously. Precisely, yardstick of PPE & Safety Equipment is for the workforce of WBSEDCL as well as for the workforce of agencies engaged by WBSEDCL for erection, repair, operation & maintenance work.

A. Safety Equipment & Personnel Protective Equipment to be used by Technical Staff / Agency Workers during execution of various works at Distribution Network, Substations, Generation Units etc. :

Sl No.	Equipment / Accessories	Short Specification & Standards	Requisite Quantity to be kept at each worksite
1	Industrial Safety Belt	IS:3521 & all its amendments compliant Full body harness with waist belt, fall arrest attachment, adjustable straps, dorsal D-ring, shock-absorbing lanyard and other accessories	60% of total workforce per worksite
2	Industrial Safety Helmet	IS:2925 compliant Helmet with adjustable ratchet, sweatband, head strap & chin strap fittings	100% of total workforce per worksite
3	Hand	IS:4770:1991 compliant	100% of total



Sl No.	Equipment / Accessories	Short Specification & Standards	Requisite Quantity to be kept at each worksite
	Gloves(pair)	<p>Made of rubber of 15 kV insulation grade suitable up to 11 kV system : For LT mobile van</p> <p>Made of rubber of 36 kV insulation grade suitable up to 33 kV system : For HT mobile van and substation</p>	workforce per worksite
4	Rubber Gum Boot (Pair)	<p>IS: 5557 compliant</p> <p>Made of PVC or rubber, knee-length, anti-slip sole, chemical and water resistant</p>	30% of total technical workforce per worksite and 100% operational workforce at 33/11/6.6 kV substation.
5	Discharge cum Earthing Rod	<p>a) For working up to 11 kV: Highly insulated FRP Telescopic type with 3 sections & self locking arrangement, total length \geq 5.5 M; Aluminum C Clamp at top, Crocodile Clip for earthing; \geq12 M 10 sqmm PVC insulated Cu cable. [Cu cable with socket clamped at one end to enable tight fixing on earth spike is preferable to avoid sudden disconnection amid work execution]</p> <p>b) For working up to 33 kV: Highly insulated epoxy resin telescopic type with 3 sections & self locking arrangement, total length \geq 5.5 M; Aluminum C Clamp at top, Crocodile Clip for earthing; \geq15 M 10 sqmm PVC insulated Cu cable [Cu cable with socket clamped at one end to enable tight fixing on earth spike is</p>	Two sets with inter phase shorting arrangement at each worksite.



SI No.	Equipment / Accessories	Short Specification & Standards	Requisite Quantity to be kept at each worksite
		preferable to avoid sudden disconnection amid work execution]	
6	Earth Spike	Solid Galvanized Iron (GI) Rod; Length: 1.83 M; Diameter : 20 mm	Two spikes at each worksite
7	Earth Chain	Chain made of Brass of suitable length (Atleast 3.5 M in length)	Two chains per worksite
8	Bamboo Ladder	Made of matured seasoned bamboo; Length: 20 ft; Steps of ladder shall be guarded by GI wire binding.	One for each worksite
9	Lifting Rope	High quality Nylon/Manila rope Length: 100 M; Diameter: 1"	6 bundles for each worksite
10	High Voltage Detector (HVD)	<p>Suitable for detection of liveness of electrical infrastructure including overhead bare conductor distribution lines. The HVD shall start annunciation with flashing Red LED display and buzzer beeps indicating that the line / infrastructure is LIVE and, not safe to earth and/or carry out any operation. Sensing distance shall have to be at least 3 M for 33 kV and 1 M for 11 kV lines and 5" for 415 V lines.</p> <p>Detailed Technical Specification is available in WBSEDCL's own website (www.wbsedcl.in) (TENDER=> Technical Specification => 9. Instrument => 9.05 High Voltage Detector)</p>	One at each worksite (shall be at each substation and each LT & HT mobile van)



SI No.	Equipment / Accessories	Short Specification & Standards	Requisite Quantity to be kept at each worksite
11	Traffic Cone with Nylon Rope & Caution/Danger board	Cone: PVC made Cone with florescent strip and logo of WBSEDCL; Height :2'6" Rope: Yellow Color ½" Diameter Nylon Rope	For LT mobile van : Four no. of Cones and 50 M of Rope For HT mobile van: Eight no. of Cones & 100 M of Rope
12	Safety Vest	Material: Mesh Polyester; Weight : Minimum 55 GSM; Colour: Blue; Size: Chest- 42" & Length 25.5" (approx); Reflective Tape: GLD; Tape width: 2"; Design: One Horizontal & two vertical reflective tapes with black piping , WBSEDCL logo will be stitched in back and front side; Style: Front opening with Velcro attachment.	100% of total workforce per worksite
13	First Aid Box	Sterilized Dressings including Burn Dressings, Sterilized Cotton Wool, Bottle of Antiseptic Solution, Sealed Packs of Sterilized Eye Pads, Aspirin or any other Analgesic Tablet, Scissor, Adhesive Plaster Roll, Roller Bandage, Triangular Bandage, Potassium Permanganate Crystal, Snake Bite Lancet, Bottle of Spirit, Boric Powder, Silver Nitrate Gel etc. (as mentioned in new Safety Manual)	One set per worksite



B. Safety Equipment & Personnel Protective Equipment used by Technical Staff / Agency Workers during execution of various works at PPSP Site and Hydel Plants in addition to items listed above:

Sl No.	Equipment / Accessories	Short Specification & Standards	Requisite Quantity to be kept at each worksite
1	33 kV Insulating Mat	Made of Rubber. Insulation grade suitable for usage up to 33 kV IS Code: 15652	In front of Electrical Panels **
2	Safety Goggles	Clear, Anti Fog; Polycarbonate screen, flexible PVC frame and woven elastic strap	05 (for personal eye protection against chemical splash, medium energy shock of particles in area exposed to splashes of chemicals etc.)
3	Protective Apron		02 (for handling Battery Bank)
4	Safety Ear Plug	Hearing Protection Ear Plug; Foam or Silicone plugs with SNR \geq 34 dB; Corded for convenience	100% of the operational work force (for noise reduction and protection against long term exposure to medium noise levels.)
5	Safety Shoe	IS 14544:1998 Compliant, S1-SRA Steel toe, anti-slip, oil & heat resistant, water-repellent leather upper	100% of total workforce per site
6	Decibel Meter	Handheld device, range 30 – 130 dB, A/C weighting, digital display	01 per work site
7	Radium Sticker / Paint for Zero Deck Level	Retro-reflective tape or glow-in-dark paint; Weatherproof and abrasion-resistant	At every work site



Sl No.	Equipment / Accessories	Short Specification & Standards	Requisite Quantity to be kept at each worksite
8	Wireless Communication system	Wireless walky talky – Covering 200-400 meters, rugged, low-power sensors for easy communication at work floor	05 per work site

** To be used in front of all the electrical panels of all 33/11 kV substations also.

Note:

- 1) The items are to be used till in serviceable condition and to be replaced immediately with new ones after loss of serviceability.
- 2) To ensure continuous availability, 10% of requisite quantities of all the listed items to be provided & maintained by Agencies are to be stocked by them at strategic locations.
- 3) Similarly, 10% of requisite quantities of all the items to be provided and maintained by WBSEDCL are to be kept in stock in each of the Divisional Stores.
- 4) Items under sl no. 1,2,3,4,5,6,7,8,9 & 13 are to be provided & maintained by agency for hired workforce and by WBSEDCL for its own employees.
- 5) Items under sl no. 10,11 & 12 are to be provided and maintained by WBSEDCL both for hired workforce and own employees of WBSEDCL.
- 6) Reference for sl no. 10 is Memo No. Safety/1/242 dated 21.02.2022 of Director(HR)
- 7) Reference for sl no. 11 is Memo No. Safety/01/192 dated 13.12.2021 of the Director(HR) and subsequent Circular
- 8) Reference for sl no. 12 is Memo No. Safety/01/123 dated 31.08.2021 of Dir(HR)

C. Fire Extinguisher:

a) For 33/11/6.6 kV Substations:

33 kV substations are prone to fire hazard like fire from electrical installations, flammable oil of transformer, oil circuit breaker etc. and also from solid combustible materials. Considering the type of fire hazards, the following types of fire extinguishers along with sand bucket suitable to combat fire at 33/11/6.6 kV substation are suggested.



SI.No.	Type of Fire Extinguisher	Portable type (Capacity)	Required No.
1.	Carbon Dioxide (CO ₂) Type (BC) [IS Code:15683:2006] Use: Designed to extinguish Class B and Class C fires. These fires involve flammable liquids & gases and	4.5 Kg (Minimum)	02
2.	a) Dry Chemical Powder Type (BC) or b) Dry Powder Type (ABC) [IS Code:15683:2006] Use: a) is designed to extinguish Class B and Class C fires. These fires involve flammable liquids & gases and electrical & electronic equipment respectively. b) is designed to extinguish Class A, Class B and Class C fires. These fires involve ordinary combustibles, flammable liquids & gases and electrical & electronic equipment respectively.	5.0 Kg (Minimum)	02
SI. No.	Type of Fire Extinguisher	Portable type (Capacity)	Required No.
3.	Mechanical Foam Type (AB) [IS Code : 15683:2006] Use: Designed to extinguish Class A and Class B fires. It is suitable for extinguishing fires involving ordinary combustibles, flammable liquids & gases. Not suitable for extinguishing fire on electrical & electronic equipment.	9.0Litres	01



4.	Water (Gas Cartridge) Type (A) [IS Code :940 or 15683:2006] Use: Designed for extinguishing Class A fire. It is suitable for fires involving ordinary combustibles. Not suitable for fire of electrical &electronic equipment until that is made dead/de-energized isolating from power source.	9.0Litres	01 To be kept at left side of the main entrance of the Control Room.
5.	Clean Agent Fire Extinguisher (Stored Pressure) Type (ABC) [IS Code : 15683:2006] Use: Designed to combat fires with minimal residue and environmental impact and for extinguishing Class A, Class B and Class C fires.	2.0 Kg	01
6.	Sand Bucket with Stand [IS Code : 2546] Use: For all types of fire.	9.0 liter	04 Buckets are to be kept under shed by the side of entrance gate coming from Switchyard to Control Room.

b) For various Office Establishments including CCCs:

The office establishments including CCCs are exposed to fire hazard like electrical fire from electrical wiring, involving electrical equipment and delicate equipment, i.e., Computer and its accessories, UPS, AC machine, Xerox machine etc. and also fire from solid combustible materials. Considering the above type of fire hazard, the following types of fire extinguishers are suggested to combat fire.

Sl.No.	Type of Fire Extinguisher	Portable type (Capacity)	Required No.
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Sl.No.	Type of Fire Extinguisher	Portable type (Capacity)	Required No.
1.	Carbon Dioxide (CO ₂) Type (BC) [IS Code:15683:2006] Use: Designed to extinguish Class B and Class C fires. These fires involve flammable liquids & gases and electrical & electronic equipment respectively.	4.5 Kg (Minimum)	03 no. of extinguishers per 1000 sq. ft. floor area *The extinguishers shall be placed in conspicuous locations over the entire floor area especially at cash counters, collection kiosks, computer rooms etc. and shall be readily accessible for immediate use at the time of emergency.
2.	Water (Gas Cartridge) Type (A) [IS Code:940 / IS Code: 15683: 2006] Use: Designed for extinguishing Class A fire. It is suitable for fires involving ordinary combustibles. Not suitable for fire of electrical & electronic equipment until that is made dead/de-energized isolating from power source.	9.0 Litres	Total 02 nos. in any Office Establishment * To be kept at any side of the main entrance to the Office under covered & protected area and shall be readily available at the time of emergency.
3.	Sand Bucket with Stand [IS Code : 2546] Use: For all types of fire.	9.0 Litres	04 Buckets are to be kept under shed by the side of entrance gate or at any location, accessible and visible by all.

c) For Divisional, Zonal & Central Stores:

For ensuring fire safety at all store establishments following type of portable fire extinguisher can be used for combating the fire from inflammable liquid of Transformer, Oil Circuit Breaker(OCB) etc.



Sl.No.	Type of Fire Extinguisher	Portable type (Capacity)	Required No.
1.	Mechanical Foam Type (AB) [IS Code: 15683:2006] Use: Designed to extinguish Class A and Class B fires. It is suitable for extinguishing fires involving ordinary combustibles, flammable liquids & gases. Not suitable for extinguishing fire on electrical & electronic equipment.	9.0 Litres	No. of Fire Extinguishers will vary depending upon the size of the Stores Will be placed at strategic locations in storage space.
2	Carbon Dioxide (CO ₂) Type (BC) [IS Code:15683:2006] Use: Designed to extinguish Class B and Class C fires. These fires involve flammable liquids & gases and electrical & electronic equipment respectively.	4.5 Kg (Minimum)	03 no. of extinguishers per 1000 sq. ft. floor area.
3.	Sand Bucket with Stand [IS Code: 2546]	9.0 liter	04 Buckets are to be kept under shed by the side of entrance gate or at any location, accessible and visible by all.

d) For Hydel Plants & PPSP Site:

For ensuring fire safety at hydel plants & PPSP following type of fire extinguishers can be used.

Sl.No.	Type of Fire Extinguisher	Portable type (Capacity)	Required No. of Cylinders
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1.	Dry Powder Type (BC) [IS Code : 15683:2006] Use: Designed to extinguish Class B and Class C fires. These fires involve flammable liquids & gases and electrical & electronic equipment respectively.	5.0 Kg	05
2.	Dry Powder Type (BC) [IS Code: 15683:2006] Use: Designed to extinguish Class B and Class C fires. These fires involve flammable liquids & gases and electrical & electronic equipment respectively.	6.0 Kg	02
3.	Dry Powder Type (BC) [IS Code : 15683:2006] Use: Designed to extinguish Class B and Class C fires. These fires involve flammable liquids & gases and electrical & electronic equipment respectively.	10.0 Kg	62
4.	Dry Chemical Powder (Stored Pressure N ₂) Type (ABC) [IS Code: 15683:2006] Use: Designed to extinguish Class A, Class B and Class C fires. These fires involve ordinary combustibles, flammable liquids & gases and electrical & electronic equipment respectively.	9.0 Kg	11



5.	<p>Mechanical Foam(Cartridge) Type (AB) [IS:15683:2006]</p> <p>Use: Designed to extinguish Class A and Class B fires. It is suitable for extinguishing fires involving ordinary combustibles, flammable liquids & gases. Not suitable for extinguishing fire on electrical & electronic equipment.</p>	9.0 Litres	18
6.	<p>Carbon Dioxide (CO₂) Type (BC) [IS:15683:2006]</p> <p>Use: Designed to extinguish Class B and Class C fires. These fires involve flammable liquids & gases and electrical & electronic equipment respectively.</p>	4.5 Kg	42
7.	<p>Water Stored Pressure Type (A) [IS Code: 15683: 2006]</p> <p>Use: Designed for extinguishing Class A fire. It is suitable for fires involving ordinary combustibles. Not suitable for fire of electrical & electronic equipment until that is made dead/de-energized isolating from power source.</p>	9.0 Kg	02
8.	<p>Sand bucket with Stand [IS Code : 2546]</p> <p>Use: For all types of fire.</p>	9.0 liter	12

Note :

- i. Fire Extinguisher shall be mounted on supporting wall or in cabinets in such a way that their bottom should be 750 mm to 1000 mm above the floor level / platform.
- ii. All extinguishers are to be re-filled immediately after discharge and atleast 2 days before the expiry date. (Necessary administrative actions are to be taken duly & well in advance.)
- iii. All firefighting equipment shall be subjected to routine maintenance, inspection and testing with record which shall be earned out by properly trained person.



- iv. All employees/agency workers shall be conversant with the operation & use of Fire Extinguisher.
- v. CO₂, Dry Powder & Mechanical Foam Type extinguishers are to be kept hanging on wall at easily accessible position and in 33/11 kV substations in front of the switchgear & panels also.
- vi. Mechanical Foam & Water (Gas Cartridge) Type are to be used in "Power off" condition.
- vii. Operation of all such kits to be made by departmental employees and by the contractor's employees wherever it is out sourced. Training and mock drill shall be organized by the concerned Office or EETIs of WBSEDCL.

This Circular is issued superseding the below mentioned Circulars & Office Orders and with immediate effect. The additions & changes, if any, incorporated in specification, requisite quantity etc. are to be adopted within two months from the date of issue of this circular.

Subject of Circular/Corrigendum	No.	Date	Issued By
Design, Quality and other parameters of PPE for observing safety norms	Circular No. 05/2011	01-03-2011	D Goswami, Director(HR)
Change in specification in Fire Extinguisher	Circular No. : 01	03-02-2014	T K Rudra, Director(HR)
For Installation of Mechanical Foam type fire extinguisher at Divisional, Zonal & Central Stores	Circular vide Memo No. Safety/26/04	05-04-2014	T K Rudra, Director(HR)
Installation of Mechanical Foam type fire extinguisher at Divisional, Zonal & Central Stores	Corrigendum vide Memo No. Safety/34/74	31-05-2014	T K Rudra, Director(HR)
Specification, quality and other parameters of PPEs for observing safety norms	Circular No. 02/2022	03-11-2022	Avijit Kumar Latua, Director(HR)

(Avijit Kumar Latua)

Director(HR), WBSEDCL

Distribution:

1. Director (R&T)/ Director (HR) /Director (Dist)/ Director (Fin)/ Director (Projects)/ Director (Generation) / Adviser(S&V), WBSEDCL.
2. Legal Advisor, WBSEDCL .
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5. ChiefEngineer:P&E/Projects-I/Project-II/Project- III/ Project IV/ Commercial/ Hydrel/ EMD/ PTP/ Regulation/ CRM/ P&C/ DTD/ PIDD/ PPSP/ PSPD/ Turga/ R&EM/ SPGD/ S&LP/ Hydrel./ Communication/ Corp.Monitoring, WBSEDCL
6. Chief Engineer (IT),WBSEDCL- **with request for uploading this Circular in the Website of the Company**
7. Chief Engineer & Project Manager, PPSP HQ, WBSEDCL
8. General Manager:(HR&A): Corp./T&D and PM/Planning, WBSEDCL.
9. General Manager(F&A): Corp. Planning/IA/Operation, WBSEDCL.
10. Company Secretary, WBSEDCL.
11. Officer on Special Duty, WBSEDCL.
12. Chief Vigilance Officer, WBSEDCL.
13. Project Manager, PPSP Site/RHP/TCFHP/TPSP/JHP/M&M Hydrel, WBSEDCL.
14. Addl. Chief Engineer, S&LP/DSM Cell, WBSEDCL.
15. Zonal Manager: Kolkata/ Burdwan/Midnapur/ Berhampur/ Malda/Siliguri Zone, WBSEDCL.
16. Addl. Genl. Manager (HR&A): SSC/ CLM/Corp./ ES&ER-I/ Dist./ Legal/ Vigilance/ ES&ER-II/ PTP/ PSPD/ Common Service Cell/ HCM Core Team/ HRDD/ Project-II/ Land Acquisition/ Board Cell, WBSEDCL.
17. **Project Manager:** South 24 Parganas-I / South 24 Parganas II/ North 24 Parganas/Howrah / Hooghly/Burdwan/Birbhum/Bankura/Purulia/PurbaMidnapur/PaschimMidnapur/Nadia/Murshidabad/Malda/DakshiDinajpur/UttarDinajpur/Jalpaiguri/Darjeeling/CoochbeharProject Office
18. Addl. Genl. Manager (F&A): Corp.-Finance/B&A/MIS-ESTB/Indirect Tax Cell/ Terminal Claims Hydrel/Dist./Project-IV/ P&C/ Internal Audit/Project-II/ IT, WBSEDCL
19. AGM(HR&A)- (Corporate Communication & CPRO), WBSEDCL.
20. Chief Medical Officer, WBSEDCL.
21. Advisor, Liaison Office, New Delhi, WBSEDCL.
22. Chief Security Officer, WBSEDCL.
23. Chief Land Officer, Land Acquisition Cell, WBSEDCL.
24. Sr. Manager (F&A)/(HR&A), Indirect Taxes/ Budget/ Estb. Corp/ CMC/ EMD, WBSEDCL
25. **Regional Manager :** North 24-Parganas/ South 24-Parganas/ Bidhannagar /Howrah /Hooghly/ Purba Bardhaman/ PaschimBardhaman/ Birbhum/ Purba Medinipur/ Paschim Medinipur/ Jhargram/Bankura/ Purulia/ Nadia/ Murshidabad/ Malda/ Uttar Dinajpur/ Dakshin Dinajpur/ Jalpaiguri/ Darjeeling/Kalimpong/ Alipurduar/ Coochbehar Region, WBSEDCL.
26. **Divisional Manager:** Behala/ Baruipur/Garia/ Diamond Harbour/ Canning/ Joynagar/Bidhannagar-I/Bidhannagar-II/ Howrah-I/ Howrah-II/Uluberia/Barrackpore/ Naihati/ Barasat/ Basirhat/ Baduria/Habra/ Bongoan/ Serampore/ Singur-Haripal/ Tarakeswar Arambag/ Chandannagar/ Mogra/ Kalna/ Katwa/ Memari/ Burdwan North/ Burdwan South/ Durgapur/ Asansol/ Suri/ Rampurhat/ Bolpur/ Tamluk/ Contai/ Haldia/ Ghatal/ Midnapur/ Kharagpur/Bankura/ Bishnupur/ Purulia/ Raghunathpur/ Kalyani/ Krishnagar/ Tehatta/ Berhampur/ Kandi/ Raghunathganj/ Malda/Gajol/Chanchol/Jalpaiguri/ Domkal/ Jagunj/ Alipurduar/Dinhata/ Coochbehar/ Darjeeling/ Siliguri Town/ Siliguri Suburbon/ Kurseong/ Islampur/ Kalimpong/ Mal/ Mathabhanga/ Belda/ Egra/ Jhargram/ Khatra/Nakashipara/ Kakdwip/ Bhangar/ New Town/ Balurghat/ Buniadpur/Islampur/Raiganj/Ranaghat Division, WBSEDCL. **They are requested to circulated the same to the Station Manager under their respective jurisdiction**
27. Sr. P.S. to Chairman and Managing Director/ Director (R&T)/ Director (HR)/ Director (Dist)/ Director(Fin)/ Director (Projects)/ Director (Generation)/ ED(Distribution)/(Commercial)/(Projects), WBSEDCL.