QUALITATIVE REQUIREMENT (QRs) OF WATER MIST EXTINGUISHER 09/10 LTRS CAPACITY (BACK PACK TYPE/HIGH PRESSURE)

Sl	Technical Parameter	Qualitative requirements (QRs)
1	Nomenclature/Name of product/gadget/equipment	High pressure water mist CAF fire extinguisher Back-pack type, ultra-light, Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved pressure vessel 9/10 ltrs and air cylinder.
2	Conformity	The Water Mist & CAF (Back Pack) high pressure extinguisher shall be confirmed to EN 3-7:2004+A1:2007-08 standards. The complete system shall be tested for compliance from an internationally/nationally Govt. accredited laboratory for compliance to all 30 clauses (3.2, 3.15, 4.2, 4.3, 4.4, 4.5, 6.1, 6.2, 6.3, 7.1.1, 7.1.2, 7.2, 7.3, 7.4, 8.1, 8.2, 9.2, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6.1 & 10.6.2, 14.1, 14.2, 15.2, 15.3, 16.1, 16.2) of EN 3 – 7:2004 + A1: 2007-08 (E) Standard mandatorily applicable for the complete system."
3	Mounting type	Backpack
4	Configuration/Description	It shall be mounted on a sturdy frame suitably cushioned for comfort, provided with shoulder pads for carrying as a backpack and a handle to be carried by hand. All materials used shall be of a fire-retardant type. Backpack shall be supplied with air cylinders.
5.	Model & make	Model Number shall be permanently marked as declared in Accredited Laboratory Test Report.
6.	Main Components:	Pressure vessel shall be hold the media with safety valve, compressed air cylinder coupled with a reducer, hose pipes for discharge of water mist media, extinguishing gun.

CONSTRUCTION: -

7.	Air Cylinder Material	Ultra light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approval

8.	Type of Foam	Special AFFF Compound conforming for higher fire rating A55, B233, spreading coefficient for special AFFF Compound shall be +5 minimum, concentrations shall be 6%.
9	Commercial Brand Name, laboratory test report, fire ratings with foam	Commercial Brand Name of the Special foam (fire extinguishing medium) as per accredited laboratory test report wherein higher fire ratings i.e. A55, B233, E1000 V (Die Electric Suitability) achieved, to be declared.
10	Characteristics of extinguishing medium of AFFF Compound with infrared spectrogram (to be furnished)	Characteristics of extinguishing medium of Special AFFF Compound shall be- Density: 1.04 (kg/cm^3, Viscosity: 1.35 (m^2/s, pH Factor 7.8, Refractive Index 1.34 @ 20+/- 2° C (accredited laboratory test report required)
11	Pressure Vessel Material & Capacity (Nominal Charge)	Ultra light Carbon Composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved of 09/10 litre capacity.
12	Minimum wall thickness of pressure vessel (mm)	Minimum wall thickness of pressure vessel should be 5 mm
13	Extinguishing gun material	Stainless Steel
14	Weight of extinguishing gun.	Shall not more than 750+/- 50 gram.
15	Length of Standard of Hose for backpack system.	Hose shall be EN marked, not less than 1.3 meters for backpack system.
16	Weight of fully charged Backpack system	Weight of fully charged Ultra light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved Backpack system shall be not more than 20kg.

PERFORMANCE:-

17	Air Cylinder Capacity (Ltrs)	2 litres
18	Air Cylinder pressure (Bar)	300 bar
19	High Pressure Type	High Pressure Type (Dynamic Operating pressure to be tested in the Govt. accredited laboratory test report which will be considered as high pressure for as per clause No. 3.15 of EN 3 – 7:2004 + A1:2007-08 (E) Standard.) ≥ 37.6 Bar for Ultra-light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved vessel.
20	Lancing Distance of Gun	More than 15 +/- 2 meter
21	Minimum operating time	25 +/- 2 second
22	Operating temperature	System shall be designed for 60°C or more and minimum 5° C or less and certified by the manufacturer as per Clause 7.4 of EN 3-7:2004+A1:2007-08 standards as per the accredited test report for backpack system.
23	Fire Rating	Class A, Class B and Electrical Fire Rating with Special AFFF Compound for back pack 55A, 233B, E1000V (Die Electric suitability) with commercial brand name of fire extinguishing medium as per accredited laboratory test report for Backpack System.

CERTIFICATION:-

24	Approval	PED (Pressure Equipment Directives) approval as per 97/23/EC (Encumbrance Certificate)
25	Pressure Gauge	Pressure Vessel shall be fitted with a pressure gauge (CE-Marked)
26	NOC (No Objection Certificate)	No objection certificate (NOC) for Air cylinder and its valve & Pressure Vessel containing body No. from Petroleum and Explosives Safety Organization (PESO)/approval of CCE Nagpur is mandatory.
27	Pressure Vessel	Pressure Vessel shall be CE marked from Notified body.
28	Consent from OEM	Specific consent of the OEM for the value additions made along with a confirmation that fire ratings of the equipment would not be affected by these value additions.

29	Test Reports	Test Report No. should be declared/mentioned with date.
30	Declaration about Govt. Accredited Laboratory where Test Conducted	Name of NABL/Central Govt. Accredited Laboratory where Test Conducted is required.
31	Pre dispatch inspection	Pre Dispatch Inspection (PDI) of product shall be carried out by CISF Fire officers as per specifications, at the vendor site where all the testing facilities are available.

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Sh. Binay Kumar
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Sh. Amit Sarah
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Sh. Vijay Prakash, IPS
ADG (HQ)/CISF
Chairman

Director General/CISF

TRIAL DIRECTIVES (TDs) OF WATER MIST EXTINGUISHER 09/10 LTRS CAPACITY (BACK PACK TYPE/HIGH PRESSURE)

Sl	Technical Parameter	Qualitative requirements (QRs)	Trial Directives
1	Nomenclature/Name of product/gadget/equipment	High pressure water mist CAF fire extinguisher Back-pack type, ultra-light, Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved pressure vessel 9/10 ltrs and air cylinder.	To be checked physical by BOOs at vender site.
2	Conformity	The Water Mist & CAF (Back Pack) high pressure extinguisher shall be confirmed to EN 3-7:2004+A1:2007-08 standards. The complete system shall be tested for compliance from an internationally/nationally Govt. accredited laboratory for compliance to all 30 clauses (3.2, 3.15, 4.2, 4.3, 4.4, 4.5, 6.1, 6.2, 6.3, 7.1.1, 7.1.2, 7.2, 7.3, 7.4, 8.1, 8.2, 9.2, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6.1 & 10.6.2, 14.1, 14.2, 15.2, 15.3, 16.1, 16.2) of EN 3 – 7:2004 + A1: 2007-08 (E) Standard mandatorily applicable for the complete system."	To be checked and verified with relevant EN certificates.
3	Mounting type	Backpack	Fitment to be checked physically.
4	Configuration/Description	It shall be mounted on a sturdy frame suitably cushioned for comfort, provided with shoulder pads for carrying as a backpack and a handle to be carried by hand. All materials used shall be of a fire-retardant type. Backpack shall be supplied with air cylinders.	To be checked physically by the BOOs.
5.	Model & make	Model Number shall be permanently marked as declared in Accredited Laboratory Test Report.	To be checked physically and verified with relevant certificates by the BOOs.
6.	Main Components:	Pressure vessel shall be hold the media with safety valve, compressed air cylinder coupled with a reducer, hose pipes for discharge of water mist media, extinguishing gun.	To be checked physically by the BOOs.

CONSTRUCTION: -

7.	Air Cylinder Material	Ultra light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approval	To be checked physically and verified with relevant certificates by the BOOs.
8.	Type of Foam	Special AFFF Compound conforming for higher fire rating A55, B233, spreading coefficient for special AFFF Compound shall be +5 minimum, concentrations shall be 6%.	To be checked physically by the BOOs.
9	Commercial Brand Name, laboratory test report, fire ratings with foam	Commercial Brand Name of the Special foam (fire extinguishing medium) as per accredited laboratory test report wherein higher fire ratings i.e. A55, B233, E1000 V (Die Electric Suitability) achieved, to be declared.	To be checked physically and also to be verified with relevant certificates from Govt. Approved lab.
10	Characteristics of extinguishing medium of AFFF Compound with infrared spectrogram (to be furnished)	Characteristics of extinguishing medium of Special AFFF Compound shall be- Density: 1.04 (kg/cm^3, Viscosity: 1.35 (m^2/s, pH Factor 7.8, Refractive Index 1.34 @ 20+/- 2° C (accredited laboratory test report required)	To be verified with relevant certificates from Govt. Approved lab.
11	Pressure Vessel Material & Capacity (Nominal Charge)	Ultra light Carbon Composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved of 09/10 litre capacity.	To be physically checked and verified with relevant certificates by the BOOs.
12	Minimum wall thickness of pressure vessel (mm)	Minimum wall thickness of pressure vessel should be 5 mm	To be checked and verified with relevant certificates
13	Extinguishing gun material	Stainless Steel	To be checked and verified with relevant certificates

14	Weight of extinguishing gun.	Shall not more than 750+/- 50 gram.	To be checked physically by the BOOs.
15	Length of Standard of Hose for backpack system.	Hose shall be EN marked, not less than 1.3 meters for backpack system.	To be physically checked and verified with relevant certificates by the BOOs.
16	Weight of fully charged Backpack system	Weight of fully charged Ultra light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved Backpack system shall be not more than 20kg.	To be checked physically by the BOOs.

PERFORMANCE:-

17	Air Cylinder Capacity (Ltrs)	2 litres	To be checked physically by the BOOs.
18	Air Cylinder pressure (Bar)	300 bar	To be checked physically by the BOOs.
19	High Pressure Type	High Pressure Type (Dynamic Operating pressure to be tested in the Govt. accredited laboratory test report which will be considered as high pressure for as per clause No. 3.15 of EN 3 – 7:2004 + A1:2007-08 (E) Standard.) ≥ 37.6 Bar for Ultra-light Carbon composite with liner made of PET/PA/HDPE/Aluminium or any internationally accepted liner material, compliant with PED 97/23/EC, CE marking requirements and PESO approved vessel.	To be checked and verified with relevant certificates by the BOOs.
20	Lancing Distance of Gun	More than 15 +/- 2 meter	To be tested physically by the BOOs.
21	Minimum operating time	25 +/- 2 second	To be tested physically by the BOOs.

22	Operating temperature	System shall be designed for 60°C or more and minimum 5° C or less and certified by the manufacturer as per Clause 7.4 of EN 3-7:2004+A1:2007-08 standards as per the accredited test report for backpack system.	To be checked and verified with relevant certificates.
23	Fire Rating	Class A, Class B and Electrical Fire Rating with Special AFFF Compound for back pack 55A, 233B, E1000V (Die Electric suitability) with commercial brand name of fire extinguishing medium as per accredited laboratory test report for Backpack System.	To be checked and verified with relevant certificates.

CERTIFICATION:-

24	Approval	PED (Pressure Equipment Directives) approval as per 97/23/EC (Encumbrance Certificate)	To be checked and verified with relevant certificates.
25	Pressure Gauge	Pressure Vessel shall be fitted with a pressure gauge (CE-Marked)	To be checked physically and verified with relevant certificates.
26	NOC (No Objection Certificate)	No objection certificate (NOC) for Air cylinder and its valve & Pressure Vessel containing body No. from Petroleum and Explosives Safety Organization (PESO)/approval of CCE Nagpur is mandatory.	To be checked and verified with relevant certificates.
27	Pressure Vessel	Pressure Vessel shall be CE marked from Notified body.	To be checked and verified with relevant certificates.
28	Consent from OEM	Specific consent of the OEM for the value additions made along with a confirmation that fire ratings of the equipment would not be affected by these value additions.	To be checked and verified with relevant certificates.
29	Test Reports	Test Report No. should be declared/mentioned with date.	To be checked and verified with relevant certificates as per EN.

30	Declaration about Govt. Accredited Laboratory where Test Conducted	Name of NABL/Central Govt. Accredited Laboratory where Test Conducted is required.	Firm to submit certificates from NABL accredited / Central Govt. Approved lab.
31	Pre dispatch inspection	Pre Dispatch Inspection (PDI) of product shall be carried out by CISF Fire officers as per specifications, at the vendor site where all the testing facilities are available.	To be carried out by BOOs at vendor's site.

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