

वसई विरार शहर महानगरपालिका
मुख्य अग्निशमन कार्यालय
आचोळे.
ता.वसई, जि.पालघर, पिन-४०१ ३०५.



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मुख्य अग्निशमन कार्यालय
दिनांक : / /२०२४

Specification Chart for FIRE PROTECTIVE CLOTHING

अनु. क्र.	तपशील	ACCORDING TO EITHER EN OR BIS STANDARD	१	२	३	टिप्पण
CONSTRUCTION OF JACKET						
१	Outer layer : Flame retardant fabric Good thermal heat protection High abrasion resistant	75% m-aramid 23 % p-aramid 2% anti static fiber. Weight not more than 195 g/m2 (±5%) (Composition as per either EN or BIS standard approved.)				
२	Moisture barrier Moisture Barrier shall be Fire resistant and breathable in nature.	The construction should be micro porous in nature like non-woven substrate/ felt / PU / spun lace aramid - suitably laminated with PTFE / PU like membrane or treated with compound to ensure that no water ingress from outside besides allowing perspiration and heat to escape from inside. Weight not more than 105 g/m2(±5%)				

		LIGHT WEIGHT without compromising the protection level (composition as per either EN or BIS standard approved)				
३	Thermal Liner fabric with most stability and breathability	liner should be made of stable and breathable fabric aramid fleece 60 gm/m ² + aramid / viscose 130 g/m ² (±5%) preferred (composition either EN or BIS standard approved.)				
४	Thread for stitching	Meta aramid (composition as per either EN or BIS standard)				
५	Color of suit	As per sample approved by department.				
६	Reflective yellow silver tape. Heat pressed and not stitched	As per sample approved by department.				
७	Fully flexible, acceptable breathing and thermal performance to wearer.	Either EN469 level 2 protection or BIS Certified as per IS 16890:2018, EN ISO 13688:2013, EN ISO 1149-5:2018. Certification of standard				
८	Approval	Either EN469-2020 or BIS Certified as per IS 16890:2018, EN ISO 13688:2013, EN ISO 1149-5:2018				

अनु. क्र.	तपशील	ACCORDING TO EITHER EN OR BIS STANDARD	१	२	३	टिप्पण
DESIGN OF JACKET						
१	Zipper extending to collar	Quick release				
२	Sleeve	Raglan offering superior mobility preferred (as per Either EN or BIS standard)				
३	Reinforcement for jacket the shoulder, elbow and Hem of cuffs	to provide high abrasion resistance and maximum protection for wearer. (Either EN or BIS APPROVED BRAND				
४	Pull tables for pocket	Pull tabs should be made of para aramid (Either EN or BIS APPROVED BRAND)				
५	cuff	Knitted with thumb hole				
६	Inspection zipper between outer and mb/liner	As per sample approved by department.				
७	Front flap extension	Provided for collar seam				
८	Drain holes	Provided at the pockets and hem of the jacket to drain water from the jacket				
९	Trim	Lime/grey/lime or distinctly visible triple trim in 5cm width, in sleeves, bottom, back and chest of the jacket. (The offered trim to be				

		from Either EN or BIS APPROVED BRAND) providing superior comfort for the wearer. Trim Certified to withstand 30+ washes				
१०	Pockets in jacket	Radio pocket in the left front, 2 box pockets with flap equipped with metal snap hook and 1 D-Ring. The jacket also consists of 2 inner side pockets.				
११	Additional accessories	Snap hook 1 brass + 1 D-ring + 2 straps.				
१२	Types of placement of straps	Light strap breast, right mic strap under breast, left				
अनु. क्र.	तपशील	ACCORDING TO EITHER EN OR BIS STANDARD	१	२	३	टिप्पण
CONSTRUCTION OF PANT						
१	Outer layer : Flame retardant fabric Good thermal heat protection High abrasion resistant	75% m-aramid 23 % p-aramid 2% anti-static fiber with weight not more than 195 g/m ² (±5%) (Composition as per either EN or BIS standard approved.)				
२	Moisture barrier Moisture Barrier shall be Fire resistant and breathable in nature.	The construction should be micro porous in nature like non-woven substrate/ felt / PU / spun lace aramid - suitably laminated with PTFE / PU like membrane or treated				

		with compound to ensure that no water ingress from outside besides allowing perspiration and heat to escape from inside. Weight not more than 105 g/m2(±5%) (composition as per Either EN or BIS standard)				
३	Inner liner	Aramid fleece 60 g/m2 + Aramid / Viscose 130g/m2 (composition as per either EN or BIS standard)				
४	Thread for stitching	Meta aramid (composition as per either EN or BIS standard)				
५	Color of suit	As per sample approved by department.				
६	Weight	485 gms/m2 (+/- 5%), light weight pant with high thermal protection and high Abrasion resistance (composition as per either EN or BIS standard)				
७	Fully flexible, acceptable breathing and thermal performance to wearer.	Either EN469 level 2 protection EN ISO 13688:2013, EN 1149-5:2018. Or BIS Certified as per IS 16890:2018, Certification of standard				
८	Approval	Either EN469-2020 EN ISO 13688:2013, EN 1149-5:2018 or BIS Certified as per IS 16890:2018,				

अनु. क्र.	तपशील	ACCORDING TO EITHER EN OR BIS STANDARD	१	२	३	टिप्पण
DESIGN OF PANT						
१	Insulation	Suitable for short jacket to waist				
२	Adjuster design	Elastic with strap towards at the back of the waist and should be designed with high bib for bib for overlapping protection				
३	Hem	Reversed boot cut				
४	Hem reinforcement	Hem reinforcement should be of para aramid (Either EN OR BIS APPROVED BRAND)				
५	Seam reinforcement	seam reinforcement should be of para aramid (Either EN OR BIS APPROVED BRAND)				
६	Knee reinforcement providing superior abrasion resistance to the pant and enhanced protection to wear	Both knee reinforcement should be of para aramid (Either EN OR BIS APPROVED BRAND)				
७	Knee pads	Detachable knee pads with cushion (7mm) preferred				
८	Zipper	Zipper with fly front closing with strap for front closing- strap, hoop/loop				

९	Zipper	Inspection zipper between outer and mb/liner				
१०	Suspenders	High quality suspender in red color with X back design providing maximum comfort.				
११	Trim	Lime/grey/lime or distinctly visible triple trim in 5cm width, in sleeves, bottom, back and chest of the jacket. (The offered trim to be from either EN OR BIS APPROVED BRAND providing superior comfort for the wearer.) Trim Certified to withstand 30+ washes				
१२	Pockets	Side pockets and thigh pockets including knife pockets with easy access straps made of either EN OR BIS APPROVED BRAND fabric on pockets.				
अनु. क्र.	तपशील	ACCORDING TO EITHER EN OR BIS STANDARD	१	२	३	टिप्पण
FIRE FIGHTING HOOD						
१	Design	Inherently flame-retardant knitted fabric				
२	Protection	From any flesh of heat				
३	Approval	Either EN 13911:2017, EN 1149-5:2018 EN ISO 13688:2013 approved and CE marked Or BIS standard the Hood showing name of the Manufacturer and complete address of the place of production Certifying PPE Category III compliance is mandatory.				

अनु. क्र.	तपशील	ACCORDING TO EITHER EN OR BIS STANDARD	१	२	३	टिप्पण
FIRE FIGHTING GLOVE						
१	Construction of outer layer	Top and palm hand consist of high quality, fire – resistant and very soft cow nappa leather of 1.2 mm to 1.3 mm (composition as per either EN or BIS standard)				
२	Lining	Lining made of cut resistant double face fabric and made of 43% aramid, 37% polyester, 20% glassfibre (cut resistant fabric as per either EN or BIS standards)				
३	Design of gloves	Five finger gloves and the top and palm hand consists of high quality, fire resistant and very soft cow nappa leather of 1.2 mm to 1.3 mm (fabric as per either EN or BIS standards)				
४	Cuff	The cuff is made of split leather of 1.2 mm to 1.4 mm (adjustable by strap with Velcro) with a yellow /				

		<p>silver, flame resistant, 50 mm reflective stripe. Elastic construction at the wrist so that the glove always fits, even when crushing grip becomes necessary. There should be a metal hook and ring to attach the gloves on each other or the fireman gear. Additional protection should be provided by the knuckle padding on the top hand. A breathable and waterproof membrane additionally should be there to protect against the penetration of moisture and the chemicals required by EN 659. Should be washable at 60 deg. All seams should meta aramid thread heat resistance thread. It should give protection of hand and wrist against chemical risk in firefighting activities. Should be PPE category III. Protective gloves for fire fighters. (as per either EN or BIS standards)</p>				
4	Approval	<p>Either CE marked Certified to EN 659: 2003+A1 : 2008+AC:2009 approved to EN 420:2003+A1:2009 or BIS Standard production Certifying PPE Category III compliance is mandatory.</p>				

अनु. क्र.	तपशील	ACCORDING TO EITHER EN OR BIS STANDARD	१	२	३	टिप्पण
FIRE FIGHTING BOOTS						
१	Upper layer	Made of rubber and flame retardant plus ozone and uv resistant, should withstand mild acid and alkaline				
२	Lining	Heavy duty canvas lining for extra comfort				
३	Toe cap and midsole	Steel cap and steel midsole protection				
४	Outsole	Anti-slip and oil resistant, heat absorbing sole				
५	Shock resistance	Outsole up to 18 KV, it should meet ASTM F 2413-05 standard for electrical resistance (as per either EN or BIS standard)				
६	Padding	Extra padding for Ankle, Heel tendon and shin protection				
७	Insole	Sponge Cushion				
८	Outer design	Semicircular 2 side Rubber loop on top of the Gumboot to be provided for easy donning and doffing of the gumboot while being used by				

		Fireman. The loop should be big enough so that the hands can enter the loop.				
९	Weight	3.5-4 kg				
१०	Color	As per sample approved by department.				
११	Approval	Either EN 50321 Class 0 & EN 15090:2012 and AS/NZS 4821. EN 15090:2012 and CE Certified or BIS approved				
अनु. क्र.	तपशील	ACCORDING TO EITHER EN OR BIS STANDARD	१	२	३	टिप्पण
FIRE FIGHTING HELMET						
१	Construction	Composite fiber glass material				
२	Visor	Flame retardant and should go inside				
३	Cushion	Soft cushion head band and ratchet type adjustment				
४	Size	Adjustable according to wearer				
५	Strip	Reflective				
६	Neck protection	extra detachable neck protection of aluminized fabric, it should cover upto neck				
७	Insulation	electrically insulated E2 & E3 (either EN or BIS standard APPROVED)				
८	Approval	Either CE Marked and it is confirming to EN 443 : 2008 Type B Standard or BIS approved				

अनु. क्र.	तपशील	ACCORDING TO EITHER EN OR BIS STANDARD	१	२	३	टिप्पण
ADDITIONAL REQUIREMENTS						
१	TEMPERATURE REQUIRED					
२	TIMING FOR TEMPERATURE REACHING OUTSIDE					
३	WASHING CYCLE					
४	WEIGHT LIMIT					
५	BIS STANDARD					

NOTE: All equipment of fire suit comprising of Jacket & Trouser, helmet with knitted hood, gloves and boots each should comply either EN standard (European standard) OR BIS standard (bureau of Indian standard)