



# User Guide for Oberon Arc Flash Suits Applicable for all CAT, LCI and ARC Series Models

Pictures shown are Oberon's ARC40 Model Part Number #IFR4B-XL+HVS 49 cal/cm<sup>2</sup> Coat, Bib-Overall 43 cal/cm<sup>2</sup> Hood FR Hood Ventilation System

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# Arc-Rated Arc Flash Suit Specifications, Care, Use and Maintenance as per Industry Best Practice Workplace Electrical Safety Standards

Minimum Specifications	Reference Standards
Hood	CSA-Z94.3-07, Eye
<ul> <li>Arc rating of the arc flash suit hoods shall comply with ASTM F2178.</li> </ul>	and Face Protectors
<ul> <li>Recommend dedicating hard hat to arc-rated arc flash suit hood to avoid constant need to install before each use.</li> <li>Recommend ordering all suit hoods with LED lamp mounting strap allowing for the addition of this accessory in the future if required for low light conditions.</li> <li>Arc-rated arc flash suit hoods require approved safety glasses to be worn under the faceshield or arc flash suit hood for primary eye protection.</li> <li>Safety glasses shall be antifogging, anti-scratch and antistatic with 99.9% UV protection, and meet CSA Z94.3 Standard or ANSI Z87.1.</li> <li>Arc-rated arc flash suit hood windows with low impact ratings shall not be used.</li> <li>High impact rated arc-rated arc flash suit hoods are superior and shall be used. ANSI Z87.1+ (plus symbol indicates high impact models) shall be used for hood windows for maximum protection from shrapnel, projectiles and flying debris.</li> </ul>	ASTM F2178, Standard Test Method for Determining the Arc rating of Face Protective Products ANSI Z87.1, Practice for Occupational and Educational Eye and Face Protection.
<ul> <li>Select hood windows with the highest amount of visual light transmission. Obtain the ANSI Z87.1 manufacture spectral scan when comparing different models.</li> <li>Arc flash suit hood should be specified with a hood ventilation system.</li> </ul>	
<ul> <li>External components shall be completely covered by arc- rated materials equal to the protection level of the hood fabric, or constructed of FR plastic or non-melting material to avoid non-FR component ignition in the event of an arc flash accident.</li> </ul>	
<ul> <li>Coat and Bib-Overall or Coverall</li> <li>Shall meet the requirements of ASTM F1506.</li> <li>Materials shall be arc-rated using inherently flame resistant fabric or Flame Retardant treated cotton</li> <li>The arc rating of FR clothing shall be determined by testing</li> </ul>	ASTM F1506-10a, Standard Performance Specification for Textile Material for Wearing Apparel for Use by Electrical



•	in accordance with ASTM F1959. Arc rating as tested to ASTM F1959 will be recorded on the garment as ATPV or EBT	Workers Exposed to Momentary Electric Arc and Related
•	Arc-rated clothing must be labelled as follows (See label	Thermal Hazards.
	Example): ✓ Manufacturer	ASTM F 1959,
	✓ Arc Thermal Performance Value (ATPV) or EBT rating in calories per square centimetre	Standard Test Method for
	✓ Care instructions	Determining the Arc
	<ul> <li>✓ Fabric fiber content (e.g. oz weight/sq yard) (optional)</li> <li>✓ Garment size</li> </ul>	Rating of Materials for Clothing.
	✓ Manufacturer Identification tracking code	Ŭ
•	<ul> <li>✓ Meets requirements of Performance Specification F1506</li> <li>When incident energy calculations are completed and</li> </ul>	
-	detailed Arc Flash and Shock Warning labels available or	
	access to the engineering report then arc-rated protective clothing must be specified with an arc rating equal to or	
	greater than the incident energy.	
•	When using the Table Method of Arc Flash Hazard Analysis arc flash protective clothing is specified based on	
	Hazard/Risk Category (H/RC). H/RCs are correlated to an	
	<ul> <li>equivalent minimum arc rating.</li> <li>H/RC2, 8 cal/cm<sup>2</sup></li> </ul>	
	H/RC3, 25 cal/cm <sup>2</sup>	
-	> H/RC4, 40 cal/cm <sup>2</sup>	
•	Layering – Consult Oberon to determine the Total System Arc Rating of the multi-layer protective system (e.g. you	
	need to confirm the equivalent ATPV or EBT by reviewing	
	manufacturer`s ASTM F 1959 test results). You CANNOT just add the ATPV values of the layers of clothing.	
•	Tight fitting suits should be avoided. Loose fitting clothing	
	provides additional thermal insulation by creating an air gap between the skin and clothing, and layers of clothing.	
•	An arc flash suit should fit properly such that it does not	
•	interfere with the intended task. All company requirements for additions to the garment (e.g.	
	name tags, company logos) should be applied with	
•	inherently FR thread, consult with Oberon for instructions. Any damage shall be repaired using the same arc-rated	
-	materials as the original garment and inherently FR thread.	
	Multi-layer suits can only be repaired by Oberon. Sewing layers together can compromise worker safety.	
•	High visibility trim (stripping) sewn on arc-rated clothing	
	should be arc-rated and/or flame resistant	



### How to Store your Arc Flash Suit

- Store in storage bag or storage locker in a clean dry environment. Never store with sharp objects, or in dusty areas.
- To avoid colour fading and loss of strength never store under direct sunlight or other UV light sources (UV-radiation does not affect heat and flame protection)
- Front flap of the hood should be used to protect the window inside of the storage bag; otherwise hood storage bags are available.
- Recommend folding the arc flash suit coat, biboverall or coverall before placing in storage.
- To ensure the hood ventilation system fan does not turn on while using a storage bag, disconnect the fan unit from the coupling (turn fan counter clockwise), open battery storage compartment cover and remove one battery. Replace the battery compartment cover and store in a pouch inside of the overall storage bag.



### How to Launder your Arc Flash Suit

**NOTE:** Always follow the instructions on the care label found inside of your Oberon PPE.

- Always completely disassemble your hood before laundering (see instructions below).
   Do not launder hood with window and hard hat in place.
- Close all hook & loop fasteners before laundering to avoid unwanted pilling or clogging the hook portion of the fastener
- Fabrics may either be washed or dry cleaned
- Suits shall always be washed or cleaned separately from any other clothing

**WASHING PROCEDURES:** The following instructions apply to domestic as well as Industrial washing. Load of washing machine 2/3 of volume of the drum in order to avoid





crumples.Pre-washing at temperatures up to 40°C with a washing bath relation of 1:10. Main washing at temperatures up to 40°C with a washing bath relation of 1:10.

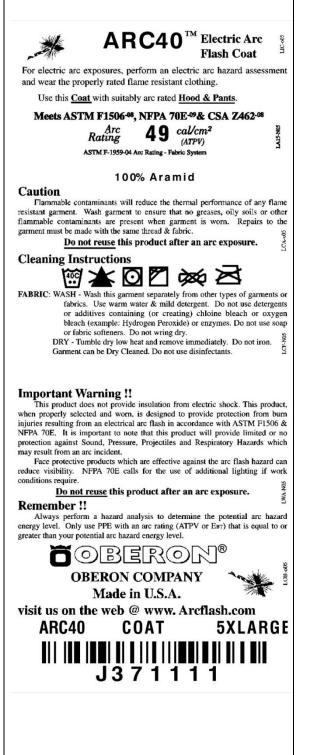
**DETERGENTS:** To wash PPE in a correct way, the bath should have a ph-value <10. Generally usual commercial detergents for colored clothing should be used which should be proportioned according to the detergent manufacturers` information. Full detergents contain brighteners and are therefore not suitable. Do not use bleaching agents or products which contain bleaching agents. Do not use softener.

**RINSING:** After washing PPE shall be rinsed carefully in order to delete all remains of alkaline and/or possibly flammable residues of the detergent. 2-3 rinsing cycles may be necessary.

**DRYING:** Garments may be spin-dried and dried in a cylinder drying machine with low or normal temperatures until a remaining humidity of 10-20%.

**IRONING:** Garments may be ironed with the highest temperature (3 points) without steam.

DRY (CHEMICAL) CLEANING: Chemical drying is recommended when clothing became very dirty by e.g. oil or grease. Dry cleaning shall be done according to the care labeling by usual 2-bathprocedure. Boosters should only be used in extreme situations and only with reduced mechanism. Dry cleaning shall only be executed by experts. Before PPE is re-used it shall be completely free of solvents. Therefore the clothing should ventilate for at least one day after being cleaned.





## How to Perform a Visual Inspection of an Oberon Arc Flash Suit (Coat, Bib-Overall, Hood, Ventilation System)

**Hard Cap**: Check shield adapters, ensure no cracks and correctly fitted inside cap side slots. Inspect for cracks, shell not out of date and suspension adjusting mechanism works

**Hood**: Inspect hood window inside/out for excessive scratching, cracks or other damage; replace if necessary. Ensure rubber washers are seated on fastening pins. Ensure fabric inside/out is not ripped, torn, no holes, other damage or contamination

**Coat**: Ensure fabric inside/out is not ripped, torn, no holes, other damage or contamination. Check Zipper and/or Hook and Loop Closure; confirm no visible signs of damage.

Suit Shown in Picture #IFR4B or ARC40 Series Ventilation System: Perform system check by turning fan on. Replace batteries if needed. Check fan connection to coupling, ensure fully engaged into locked position. Fan unit fully secured inside pocket, loop or strap (located at back)

**Bib-Overalls**: Ensure fabric inside/out is not ripped, torn, no holes, other damage or contamination. Check suspenders, inspect for signs of excessive wear and confirm no visible signs of damage. Confirm buckles are operable and suspender strap is flat inside of the adjustment mechanism. Inspect synch strap(s) for hook and loop seal



### How to Wear an Oberon Arc Flash Suit (Coat, Bib-Overall, Hood)

#### Donning

**NOTE:** All Oberon products shall be used in accordance with all labeling, the CSA Z462 and NFPA 70E Standard. The following "How to Wear" instruction is only an example. Worker instruction is the sole responsibility of their Supervisor.

### Hood Preparation

-Open storage bag, remove hood, and perform visual inspection

-If the hood is equipped with a hood ventilation system, perform a battery check by turning the fan switch to "ON". If the fan does not operate, change the batteries and repeat this step. Switch fan to "OFF" before proceeding to the next step -Remove the can of Disinfectant spray and soft cloth from inside of the storage bag -Holding the can 18" away from the hood surface, lightly spray the inside of the hood with the can of Disinfectant being careful to never spray the outside of any part of the arc flash suit or over spraying creating pooling on the inside of the hood and hard hat.

-Avoid spraying the inside of the hood window -Using a clean, lint free soft cloth, clean the outside of the hood window to ensure best possible visibility (remove any dirt, finger prints, etc.). Using the same cloth, wipe out the inside of the hood window (lens).

-Place the hood down on a clean surface with the hood opening facing up, allowing the inside of the hood to completely dry before use

### **Bib-Overalls**

-Remove bib-overalls, perform visual inspection Optional: Don arc flash cooling vest over top of DailyWear and underneath the bib-overalls. -If bib-overall suspender buckles are open, close buckles

-Don bib-overalls by using a bare wall or chair to







take the weight of your legs, once balanced, place one leg through the pant legs at a time -While donning the bib-overalls point your toes to the floor allowing your work boots to slide through the opening. If your work boots are excessively soiled remove them before putting on the bib-overalls.

-Once both legs are through stand up and pull the suspender straps over your shoulders and adjust the tension for a comfortable fit, removing any excess slack in the suspenders.

-If possible, close the side synch straps with hook and loop closures

-Close the lower synch straps using the hook and loop tabs at your ankles to ensure the suit legs do not fall down under your heals, avoiding a potential tripping hazard

#### Coat

-Remove the coat from the storage bag, perform visual inspection

-Put on the coat over top of the bib-overalls -Place the can of Disinfectant spray and soft cloth back inside of the storage bag, stow bag in a safe location

-Completely zip up the front coat closure and seal the zipper using the hook and loop placard, including the strap at the neck to ensure all open areas have been fully sealed

#### **Other Personal Protective Equipment**

-Don approved Safety Glasses or Goggles -Don appropriate Hearing Protective Device(s) -Don any other PPE that is appropriate for the hazard (respiratory protection, overboots, etc.)

### Hood

Pick up the hood and inspect inside using your bare hand touching the surfaces to ensure the Disinfectant spray has completely dried.
Don the hood by first turning the hard hat ratchet suspension knob opening the suspension so the hard hat will generously fit on top of your head

-Place the hood over top of your head. While





holding the bottom of the lens pull the window/shield close to your mouth and reactivate the anti-fog coating on the inside of the hood by breathing over the entire inside surface of hood window

-Once the hood is on, reach your hand up inside the back of the hood and tighten the ratchet suspension knob to the point at which the hard hat does not slip or easily pull off your head

#### Gloves

-Complete testing and inspection procedures -Put on the gloves one hand at a time, ensuring the cuff of the suit coat or coverall is well inside of the inner most gloves, ie. Rubber insulating (Voltage Rated) or Arc-rated gloves, lying flat in a natural position and not rolled or bunched up.

#### Final Check

-After the hood is on and the hard hat suspension is properly adjusted, make sure the lower hood flaps are not folded inwards and are lying flat over top of the coat. Do not tuck the hood inside of the collar.

-Double check all closures, sealing any gaps and inspecting for correctness of fit

-Reach your hand around to the back of the hood and switch the fan back to "ON" before proceeding to use your arc flash suit



### Doffing

#### Hood

-Remove hood, turn fan switch to "OFF"

-Retrieve the suit storage bag; remove the can of Disinfectant spray and soft cloth -Holding the can 18" away from the hood surface, lightly spray the inside of the hood with the Disinfectant being careful to never spray the outside of any part of the arc flash suit or over spraying creating pooling on the inside of the hood window -Always avoid spraying the inside of the hood window

-Immediately wipe accidental spray off the inside of the hood window using soft cloth -Place the can of Disinfectant spray and soft cloth back inside of the storage bag -Place the hood down on a clean surface with the hood opening facing up, allowing the inside of the hood to completely dry before storing



#### Coat

-Remove your coat and fold lengthwise before placing back inside of the storage bag -Proceed to removing the bib-overalls by opening the synch straps on the sides and at the ankles, then pulling the suspender straps over your shoulders

#### **Bib-Overalls**

-Find a bare space on a wall or by sitting on a chair, balance your weight and pull your legs through the bib-overalls. It is helpful to use your opposite hand to hold the bottom of the bib-overall pant legs allowing your work boot to easily pull through. Remember to point your toes down. If your work boots are excessively soiled remove them before removing the bib-overalls.

-Once the bib-overalls are removed fold them lengthwise and place them on top of the coat inside of the suit storage bag

#### Storage

-Pick up the hood, using the lower flap from the front, fold up and over the outside of the hood window to prevent shield damage while being stored

-Fold the back of the hood including the fan unit inside of the hard hat and place the hood into the storage bag

-Zip closed the storage bag and store in a safe dry location

Product Image	Part Number	Description	Pricing (US Dollars)
	KITBAG	Deluxe Storage Bag, hard molded bottom to protect Arc Flash suit from water damage while in transport. ArcX Logo Identification	\$80.30/EA
	BACKPACK-L	Deluxe Back Pack, Nylon construction, multiple storage compartments for Electrical Gloves, Tools, etc.	\$115.00/EA
	HOODBAG	Canvas Carry Bag for Arc Flash Suit Hoods. Features full zipper for ease of use.	\$56.10/EA

# Arc Flash Suit Storage Bag Options



Product Image	Part Number	Description	Pricing (US Dollars)
	STORAGEBAG- NAVY	Economy Storage Bag for Arc Flash Suit. Large size accommodates for Hood, Coat, Bib-Overall	\$19.80/EA

# Arc Flash Suit Comfort and Cooling Options

Product Image	Part Number	Description	Pricing (US Dollars)
	HVS-4B-PM	Hood Ventilation System, pocket mounted fan unit. System includes FR Fan, FR Hose and Air Bladder. FR Fan unit requires 4 X 'AA' Batteries (not included)	\$229.00/EA
	CV-ARC-REG (Regular Size) CV-ARC-TALL (Tall Size)	Vest Style Arc Flash Cooling Vest w/8 Cooling Packs. Cool packs are non-toxic and non-flammable. Designed to be worn over Arc-rated DailyWear, under Arc- rated Arc Flash Suit	\$189.00/EA
	CVE-ARC-REG (Regular Size) CVE-ARC-TALL (Tall Size +\$7)	Pull Over Style Arc Flash Cooling Vest w/8 Cooling Packs. Cool packs are non-toxic and non-flammable. Designed to be worn over Arc-rated DailyWear, under Arc- rated Arc Flash Suit	\$143.00/EA



# Arc Flash Suit Hood Lighting Options

Product Image	Part Number	Description	Pricing (US Dollars)
	+LAMP	Super Bright LED Lamp installed on an arc flash suit hood. Includes 3 "AAA" batteries. Multiple settings to provide extreme light to any environment. Not compliant with mining regulations.	\$60.00/EA
	LED_LAMP	Super Bright LED Lamp only. Hood requires +LOOP_LED for mounting. Ordered separately, mounting loop must be installed by Oberon factory.	\$45.00/EA
	+LOOP_LED	Oberon factory installed LED Lamp mounting loop. LED Lamp sold separately (LED_LAMP). Must not be ordered with +UMLA, both accessories can't work together.	\$15.00/EA
	+UMLA	Universal Miner's Lamp Adapter (UMLA) accessory factory mounted on any arc flash suit hood or faceshield. Must be ordered with the hood, shield modification is required. Miner's Lamp not included. Compliant with Mining Regulations.	\$35.00/EA



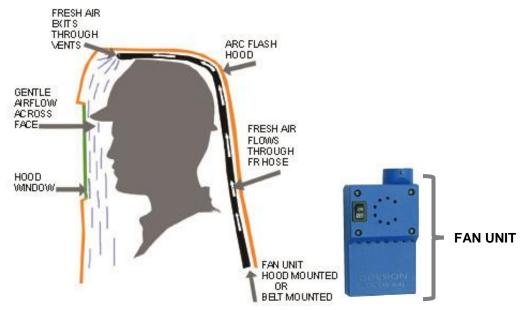
# Arc Flash Suit Replacement Parts Listing

Oberon Product	Replacement Part Number	Description	Pricing (US Dollars)
	ARC12AFH	12 cal/cm <sup>2</sup> Replacement Window For ARC12 Hood	\$32.90/EA
	ARC15AFH	15 cal/cm <sup>2</sup> Replacement Window For ARC15 Hood	\$35.10/EA
	ARC25AFH	25 cal/cm <sup>2</sup> Replacement Window For ARC25, LCI3 or CAT3 Hood	\$42.10/EA
	ARC40AFH	40 cal/cm <sup>2</sup> Replacement Window For ARC40, LCI4 or CAT4 Hood	\$49.00/EA
Hood Components	ARC65AFH	65 cal/cm <sup>2</sup> Replacement Window for ARC65 Hood	\$63.80/EA
	ARC100AFH	100 cal/cm <sup>2</sup> Replacement Window for ARC100 Hood	\$70.40/EA
	ARC140BAFH	140 cal/cm <sup>2</sup> Replacement Window For ARC140B Hood	\$70.40/EA
	SF-5000	Oberon Hard Hat Adapters	\$7.36/EA
	FASTENER-KIT	Nylon Pin & Rubber Washer Set	\$2.42/EA
	HC6P-WHT-R	Oberon Polycarbonate Hard Cap, CSA Z94.1 Type 1, ratchet susp.	\$12.38/EA
	SF-1000	Adapter that fits most Bullard, Willson, and Jackson models	\$7.36/EA
Alternative Hard Hat	SF-3000	Adapter that fits most MSA V-GARD models	\$7.36/EA
Adapters for Oberon Hoods	SF-4000	Adapter that fits most MSA Top-Gard, Dynamic Safety, North Safety models	\$7.36/EA



Oberon Product	Replacement Part Number	Description	Pricing (US Dollars)
	HVS-MOTOR-4B	Fan Motor Unit (not including batteries)	\$120.00/EA
	HVS/AIR/BL-PM	Zip in Air hose & bladder for Pocket Mounted Systems (requires port hole at the back of hood)	\$75.00/EA
Arc Flash Suit Hood Ventilation System	HVS/AIR/BL-HM	Zip in Air hose & bladder for Hood Mounted Systems (no port hole at the back of hood)	\$75.00/EA
	HVS/AIRBLAD/BM	Zip in Air hose & bladder for Belt Mounted Systems (requires belt)	\$130.00/EA
	HVS/AIRBLAD/ BM+	Zip in Air hose & bladder for TALL Belt Mounted Systems (requires belt)	\$141.00/EA
	HVS/BELT	Replacement Belt for Belt Mounted System (BM)	\$20.00/EA

## Hood Ventilation System Cross Section





#### How to Assemble & Dis-Assemble an Oberon Arc Flash Suit Hood

#### Hard Cap

- Remove the Hard Cap by pushing the tab or fingers of the adapters through the slot of the Hard Cap to free the cap. [Figure 1]
- Repeat on the other side, remove Cap from within hood

#### Hood Ventilation System (if installed)

- Unzip the bladder from the inside crown of the hood [Figure 2]
- Uncouple the hose from the Blue Fan Motor. [Figure 3]
- Remove the Fan Motor from the strap on the back of the hood
- With care, push the loose end of the hose through the vent in the back of the hood into the inside of the hood [Figure 4]
- Remove HVS Bladder from within hood

#### Additional accessories (if installed)

Remove LED Lamp

#### Adapters

- From within hood, unscrew the Grey Wing nuts on either side of the hood window [Figure 5]
- Remove Black Rubber Washers on either side of the hood window
- Set aside both rubber washers and wing nuts for reassembly
- Push White Nylon Bolt out from tab on hood window [Figure 6]
- Set aside the Adapter Sub-assembly (which include the Hard Cap Adapters, Nylon Bolts and White Shield Stops). There is no need to disassemble this sub-assembly further unless there is a damaged piece present.





### **Hood Window**

- The hood window is held into the hood by means of a pocket in the hood
- shell and a series of fasteners (quantity varies by the model)
- From within the hood, peel off the Black Rubber Washers from the fasteners [Figure 7]
- Push the fasteners through the fabric of the hood shell and the window to free the fasteners
- With all the fasteners removed, the hood window is now free to remove
- From within the hood, carefully push against the top of the hood window to free it from the top of the pocket
- Pull the Hood Window vertically to free from bottom of pocket
- To ensure you don't lose the Fasteners and Rubber Washers, reinstall into the hood after the window has been completely removed

Final Check, you should have in front of you:

- ✓ Hard Cap
- Hood Ventilation System (if hood included the optional feature)
- ✓ 2 sets of Adapter Subassemblies
- ✓ 2 sets of Grey Wing nuts and Rubber Washers
- ✓ Hood Window
- ✓ Hood Fabric Shell including Fasteners and Rubber Washers [Figure 8]



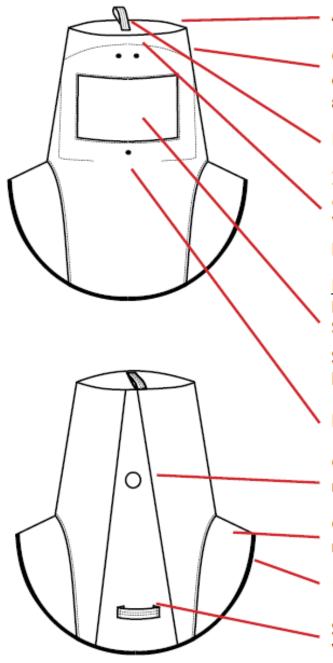








# **Hood Design Specification**



### ARC, LCI & CAT Series Hoods

Oberon Arc Flash Hoods are color coded to an Arc Rating so it is apparent which hood you have

Hanging Loop on top of Hood

Zipper inside top of Hood to fit optional Oberon Hood Ventilation System (HVS) that provides air circulation inside hood

### FACE-FIT<sup>®</sup> Hood Window

Proprietary <u>Polycarbonate</u> Material Superior VLT (Visible Light Transmission)

Scratch Resistant outside surface Permanent Antifog coating inside

Easy Disassembly for laundering

Covered Port hole for HVS does not sacrifice protection

Generous Shoulder for ease of motion

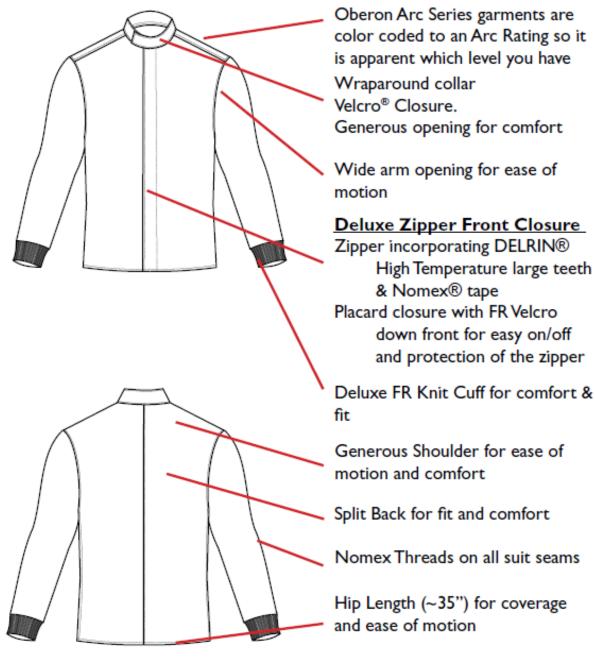
Nomex<sup>®</sup>Threads on all suit seams

Strap to hold Oberon Hood Ventilation System Fan Motor

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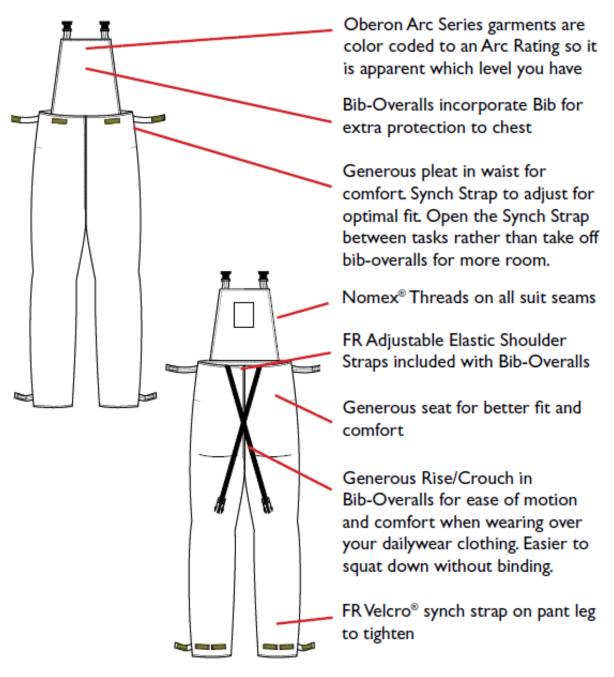
## **ARC Series Coat Design Specification**



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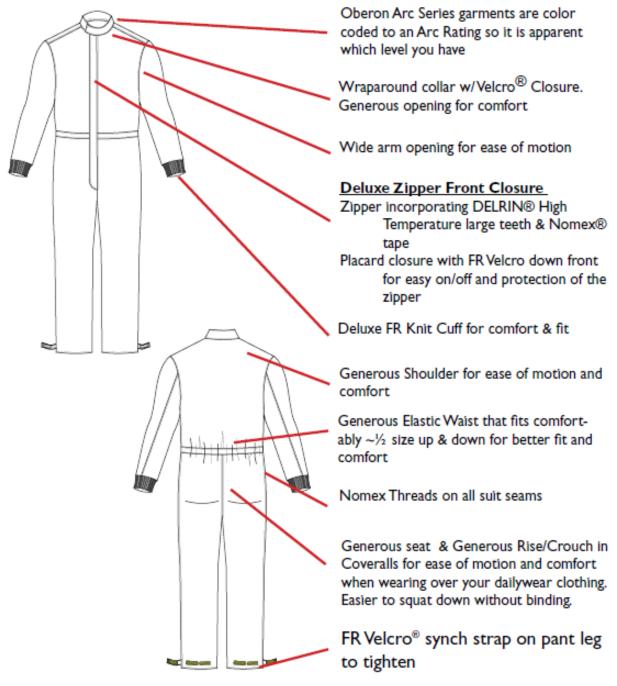
# **ARC Series Bib-Overall Design Specification**



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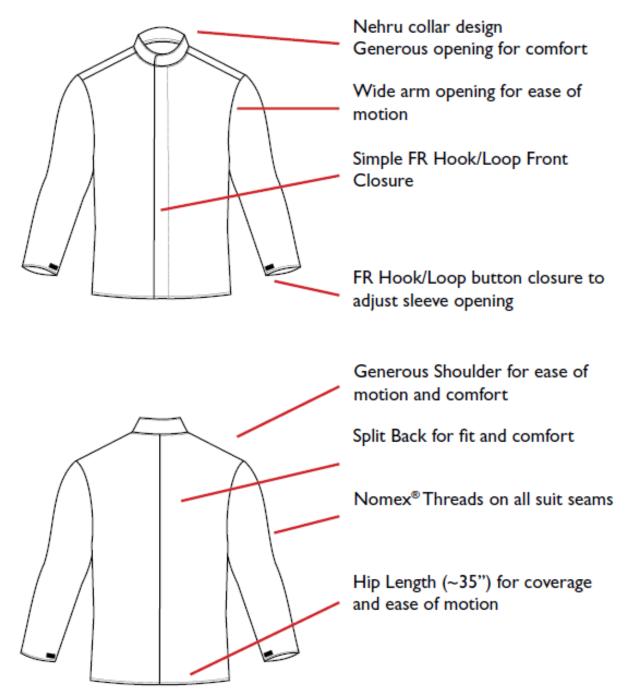
## **ARC Series Coverall Design Specification**



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# **CAT & LCI Series Coat Design Specification**



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## **CAT & LCI Series Bib-Overall Design Specification**

