

Cold Store Clothing

An Expert Guide

Jackets
Salopettes
Gloves

Boots
Head Protection
Thermal Underwear





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Cold Store Clothing

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Arco is the UK’s leading supplier of personal protective equipment, workwear and workplace safety products offering a world-class range of over 170,000 products.

As Experts in Safety we are widely recognised as a provider of specialist advice through our branch network and this is further supported by our training and consultancy division ARC Safety Services. We reach our customers through an extensive product catalogue, interactive website and 40 strong local Sales office and trade counter network. We pride ourselves on providing customers with great availability, performance and price.

Founded in 1884 Arco has a heritage spanning four generations. With traditional family values at the heart of the business we pride ourselves on our core values; respect, hard work, enterprise and excellence in reputation. We fully subscribe to the ETI’s Nine Principles Base Code and have fully incorporated this internationally recognised code of labour practice into our own ethical policy. In 2007 Arco was the first distributor in our industry to become a member of the Ethical Trading Initiative (ETI) and in 2010 we became a member of Sedex, the Supplier Ethical Data Exchange. Our supply chain management has recently been re-awarded a ‘Big Tick’ Award for Excellence from Business in the Community. At Arco we are dedicated to our Corporate Social Responsibility programme and continually demonstrate this by supporting local communities and charities donating in excess of 1% of pre-tax profits annually.

As we are members of the BSIF Registered Safety Suppliers Scheme you can be confident that we will supply safety equipment which is genuine and compliant with the relevant standards and regulations. The BSIF monitor and regulate members of the scheme by conducting regular standards audits.



Our Service

As part of our commitment to safety we have worked with our customers to research and develop a new range of cold store clothing.

Those who work in occupations which involve spending time in cold environments are at risk of hypothermia or ‘cold stress’ and need to be issued with workwear that will provide sufficient thermal protection.

Arco has now developed a full range of clothing, footwear, gloves, head protection and thermal base layers which will keep workers who operate in cold storage areas safe.

Relevant European Standards
The new Arco cold store clothing range has been independently tested by third parties. The garments bear CE marking to demonstrate compliance with EC directive EC 89/686 Protective Equipment Annex II Health & Safety Requirements.

- **EN 342: 2004 Protective clothing, ensembles and garments against cold**
Garments in the new Arco cold store clothing range satisfy the requirements of EN 342: 2004. This standard specifies the requirements and test methods for performance of clothing ensembles (i.e. salopettes and jackets) or for single garments for protection in cold environments. The tests determine that adequate protection is provided by the protective clothing at temperatures lower than -5°C.
- **EN 340: 2003 Protective clothing, general requirements**
The Arco cold store range also meets the requirements of the European Standard EN 340: 2003 which specifies requirements including:
 - **Ergonomic requirements:** including comfort, weight and design considerations.

- **Performance requirements:** after ageing including colour alteration, cleaning and dimensional change.
- **Sizing requirements:** according to wearer height, chest and weight circumference.

Working with Our Customers
In order to best understand customer needs we worked with a number of our key cold store customers, conducting research to understand the conditions they work in, the jobs they do within them, and how their cold store clothing and PPE performed for them.

We looked at different pieces of workwear and PPE worn from head to toe in cold stores and other areas with extremely cold temperatures. Items included jackets, trousers, thermal underwear, headwear, gloves and footwear.

Customer Feedback	Arco Solution
Cold store garments can become scuffed, torn and damaged reducing their thermal protection.	Garments are robust, hard wearing and water repellent using a strong, durable and hard wearing 300D ripstop fabric, designed not to rip or tear.
Many items of workwear suitable for use in cold environments are not easily washed or laundered.	Garments are machine washable.
Cold store garment components such as zips crack at extreme low temperatures.	Branded YKK plastic moulded zips are used and tested to perform at such temperatures.
Cold store clothing can feel bulky when worn and the cut leads to a tight fit. This restricts movement when working and doesn’t allow for layering below.	Garments have been specifically designed to enable good freedom of movement and to allow for base layers to be worn comfortably.
It was difficult to be confident that their cold store clothing would provide adequate thermal protection.	Garments are made with double layers of 3M Thinsulate Wadding to keep you warm and comfortable whilst you work, and protect at above -50°C.

Jackets

Clothing should be selected to suit the temperature, weather conditions, the level and duration of activity, and job design. These factors are important to consider so that you can regulate the amount of heat and perspiration generated while working.

If the work pace is too fast or if the type and amount of clothing is not properly selected, excessive sweating may occur. The clothing next to the body will become wet and the insulation value of the clothing will decrease dramatically.

The new Arco cold store jacket has been designed to provide thermal protection and maximum comfort whilst working in extreme temperatures of up to -50°C. Cotton is not recommended for cold store clothing as it tends to get damp or wet quickly, and loses its insulating properties. Synthetic fibres, on the other hand, retain heat when wet so are perfect for working in cold environments. This is why we made the lining of our new jackets from 100% polyester. The outer of our jackets are also constructed from 100% polyester ripstop fabric making the jackets strong, durable and hard wearing, they are also water repellent.

Multiple layers provide better protection than a single thick garment. The air between layers of clothing provides better insulation than the clothing itself. Our new cold store jackets are insulated by two layers of 150g 3M Thinsulate wadding.

Relevant Standards

These garments bear CE marking to demonstrate compliance with the PPE Directive 89/686/EEC which ensures that all PPE placed on the market within the EU meets set safety standards.

When worn together with the salopettes these jackets meet the requirements of:

- EN 342: 2004 Protective clothing, ensembles and garments against cold
- EN 340: 2003 Protective clothing, general requirements

Cold Store Jacket Features



Collar lined with fleece with adjustable fastener – provides comfort and warmth and prevents rubbing



YKK plastic moulded zips – prevent cracking



Stud poppers – for ease of access



Adjustable waist channel with draw cord – for comfort



Radio loop and pad/pen pocket



Easy reach arm shaping panel – allows freedom of movement



2 deep front pockets with side access – for hand warming, either with or without gloves

Cold Store Jackets



Cold Store Jacket – Navy and Yellow

Sizes: S – 5XL
Ref: 18T0600



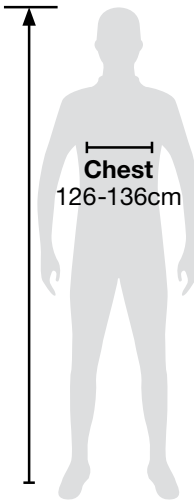
Cold Store Jacket – Navy and Grey

Sizes: S – 5XL
Ref: 18T0700

Sizing Guide

- Fit according to chest size.
- Overmeasure: Allowance built in for comfort and to allow the garment to be worn over suitable layers of clothing.

Height
172-180cm



Size	Chest (cm)	Height (cm)
S	116-126	164-172
M	126-136	172-180
L	136-146	180-188
XL	146-156	188-196
XXL	156-166	196-204
3XL	166-176	196-204
4XL	176-186	196-204
5XL	186-196	196-204

Garment Combination

	Light Activity		Medium Activity	
	8hrs	1hr	8hrs	1hr
Cold Store Protective Suit:				
ACS18T06 Jkt Navy/Yellow	-20.9°C	-42.6°C	-47.3°C	-68.1°C
ACS18T07 Jkt Navy/Grey				
ACS18T08 Salopette Navy				

Salopettes

Our new Arco cold store salopettes have been constructed from a hard-wearing, strong, durable and water repellent, fabric, incorporating features to ensure they are as comfortable as possible for the wearer and designed to complement the new cold store jackets.

These salopettes have also been designed with the wearer in mind and have additional features so that they are easy to wear, for example the concealed leg opening allows the wearer to remove the garment easily over their boots.

Relevant Standards

These garments bear CE marking to demonstrate compliance with the PPE Directive 89/686/EEC which ensures that all PPE placed on the market within the EU meets set safety standards.

When worn together with the jackets these salopettes meet the requirements of:

- EN 342: 2004 Protective clothing, ensembles and garments against cold
- EN 340: 2003 Protective clothing, general requirements



Salopettes

Sizes: S – 5XL
Ref: 18T0800

• EN 342: 2004



- 0.529 (B) = Resultant Effective Thermal Insulation
- X = Effective Thermal Insulation (not tested)
- 1 = Class 1 Air Permeability
- X = Water penetration resistance (not tested)

Salopette Features



- Fabric: 100% polyester ripstop – water repellent
- Lining: 100% polyester
- Wadding: 3M Thinsulate – 2 layers x 150g



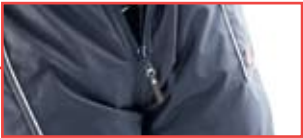
High waist with centre front zip fastening – for ease of pulling on and off



Concealed leg opening with zip – for ease when taking on and off over boots



Elasticated braces with plastic buckles – easy to adjust and comfortable for the wearer



YKK plastic moulded zips to prevent cracking



Two deep fabric pockets – for notepads etc



Articulated knee panel – for ease of movement

Footwear



Choosing the right safety footwear is important. Comfort is a key aspect when working on your feet all day as a worker suffering from discomfort is less likely to be alert and more likely to act unsafely resulting in an accident. We carry a large range of safety footwear to cover a variety of applications and all our safety footwear is tested to EN ISO 20345.

When working in cold environments footwear that keeps the foot dry and warm is key for wearer comfort. The rubber soled footwear in our cold store range provides SRC slip rating which is the maximum slip resistance in the European standards. Fur lining also helps to keep the feet warm.

Leather footwear performs well as leather is porous aids breathability and the build up of moisture. Good circulation helps to keep the feet warm so footwear that is well fitted is essential. All our sales team are at hand to assist with selecting the right footwear for the environment in which you are working.

Arco Cold Store Safety Boot

Lined boot to keep feet warm in the coldest temperatures.

- Full-grain leather uppers for durability
- Recycled insole board
- Shock absorbing lightweight PU midsole
- PU/rubber sole unit for excellent abrasion and slip resistance
- Fur lined
- Aluminised insole to keep the underside of the feet warm when the boot is in contact with cold floor surfaces
- PU/rubber construction for a long lasting boot

200 joule EN ISO 20345

Sizes: 6 – 12
Ref: 6M2100



Category	Anti-static	Heat Rating °C	Joule	Slip
S2	✓	300	200	SRC

Gloves

Frostbite, occurs when your body tissues freeze. This happens when the temperature of the skin reaches below 0°C. Toes, fingers, ears and nose are at greatest risk because these areas do not have major muscles to produce heat.

In cold conditions the body will preserve heat by favouring the internal organs, reducing the flow of blood to the extremities under cold conditions.

Hands and feet also tend to get cold more quickly than the torso because they are more likely to be in contact with colder surfaces than other parts of the body.



All PPE placed on the market in EU Member States must comply with directive 89/686/EEC and carry the CE Marking.

PPE covered by this directive is divided into three categories: –

Category I – ‘Simple’ design – e.g. gloves and eye wear
The manufacturer can take responsibility for ensuring that the product complies with the PPE Directive and can attach the CE Marking.

Category II – ‘Intermediate’ design – e.g. helmets and high visibility clothing.
To attach the CE Marking the Manufacturer must ensure either the product complies with harmonised European Standards or with verified technical specifications. Then assemble and submit technical documentation to the Notified Body, who would approve and draw up an EC Type Examination Certificate.

Category III – ‘Complex’ design – e.g. Firemen’s helmets, respiratory protective equipment.
The Manufacturer must carry out similar procedures to Category II with the additional procedure for checking of PPE manufacture. The manufacturer either –

Requests a Notified Body to ensure that the PPE conforms with the EC Type Examination Certificate by checking random production samples at least once a year. The Notified Body then issues the manufacturer with a test report.
Or the manufacturer has his quality control system approved by a Notified Body.

Arco SUP 95 Hide Insulated Glove
Premium quality leather waterproof cold store/ chillroom glove.

- Thinsulate™ lining for enhanced warmth
- Elasticated knitted wrist for secure fit

Cat I Simple Design – 89/686/EEC directive.

Sizes: 9 or 10
Ref: 1211600



Arco Chill Gloves Blue c/w Red Dots
Red dotted chill gloves.

- Thermal acrylic/wool for warmth
- PVC dots for good grip
- Elasticated wrist for secure fit

Cat I Simple Design – 89/686/EEC directive.

Size: 10
Ref: 12T5300



Arco Thermo Fast Grip Dotted Glove
Perfect in cold, dry environments.

- Thermal lining provides comfort and warmth
- PVC dotting ensures great grip
- Breathable liner prevents build up of moisture on the hand

Approved to:

- BS EN 388: 2003 This European Standard specifies requirements, test methods, and marking for protective gloves against mechanical risks. The tests include abrasion resistance; blade cut resistance, tear resistance and puncture resistance
- BS EN 511: 2006 Protective gloves against cold. A general standard designed to be used for any glove which claims protection against cold environments.

Cat II Intermediate Design – 89/686/EEC directive.

Sizes: 7, 8, 9, 10
Ref: 1275300



Hide Cold Store Glove Yellow
Premium quality leather cold store/chillroom glove.

- Thinsulate™ lining for enhanced warmth
- Reinforced first and second fingers for longer life
- Knitted wrist for secure fit

Approved to:

- BS EN 511: 2006 Protective gloves against cold. A general standard designed to be used for any glove which claims protection against cold environments

Cat II Intermediate Design – 89/686/EEC directive.

Size: 10
Ref: 14C0100



Head Protection

It has long been recognised that the majority of heat loss in the body is through the head so this is a key area to protect when working in a cold environment. By wearing a hat or helmet liner, it allows the body to retain heat and keep warm.

When working in temperatures below 0°C the body starts to try and keep organs warm by reducing blood flow to areas furthest from the heart including, ears, fingers and toes. Ears are a key area at risk from frostbite because they do not have any muscles to produce heat and keep them warm.

Wearing a suitable helmet liner can also help bodies to stay warm in cold environments by reducing draughts to the head and neck area by forming a seal with your jacket collar allowing you to retain heat. For working in very cold environments helmet liners with face warmers are also available.

Trapper Fleece Lined Hat

Nylon Oxford weave outer fabric with Thinsulate™ insulation and fleece lining.

- Fold down ear panel for extra warmth

Size: One size
Ref: Navy 1041200



Cold Store Helmet Liner

Polycotton outer with insulation and fleece lining.

- This liner is designed to be worn with the Champion Plus Safety Helmet (purchased separately). It simply sits between the head harness and the shell

Size: One size
Ref: Navy 1040400



Refrigiwear Knit Hoods

Knitted balaclava, covers the neck and head.

- Quilted face piece protects the mouth, chin and forehead

Size: One size
Ref: Green 1037800
Orange 1037900



Xcelcius™ Balaclava

Double layer to provide extra warmth.

- 50% polyester/50% Viloft®
- Plain interlock

Cat I Simple Design – 89/686/EEC directive.

Sizes: One size
Ref: Navy 1054000



Thermal Underwear

When working in cold environments clothing should be worn in multiple layers which provide better protection than a single thick garment. The inner layer should provide insulation and be able to “wick” moisture away from the skin to help keep it dry.

Arco's thermal underwear is manufactured using a type of viscose called 'Viloft'. 'Viloft', is a natural fibre made from wood pulp and it gives better thermal performance than normal viscose because it is made from two different types of fibres. When the two types of fabric are brought together they create air pockets in between the layers, which traps warm air and allows the skin to breathe.

The fabric is also brushed on the inside to make it feel even softer to the wearer. Brushing is done to increase the speed at which moisture is absorbed into the fabric and transported through to the outside of the garment. It also increases the surface area of air pockets which retain heat.

Thermal underwear is a key layer as this is the layer that is closest to the skin. If this layer allows the skin to perspire, clothing may end up wet which will reduce thermal protection. Choosing the right thermal underwear can be the difference between staying warm or getting cold.

Xcelcius™ Men's Megatherm Underwear

Manufactured from Viloft® original fibres the Megatherm range is suitable for freezer room conditions where -15°C to -25°C is not uncommon, or severe weather conditions experienced in industries such as rail and petrochemical.

Men's Megatherm Long Sleeved Top

- 50% polyester/50% Viloft®
- 330 g/m² double jersey extra thread brushed

Sizes: M – XXL
Ref: Navy, Long-Sleeved Top 1052500

Xcelcius™ Men's Megatherm Long Pant

- 50% polyester/50% Viloft®
- 330 g/m² double jersey extra thread brushed

Sizes: M – XXL
Ref: Navy, Long Pant 1052600



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