



The Complete Hair Containment Training Module

This Guide will provide you with the knowledge and tools to be able to enable significant reductions in hair complaints and ensure that you are compliant with all of the relevant standards



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With specialist research conducted by the University of Bolton and the President of the Trichological Society 2014-2016 Professor Barry Stevens FTTS

Information in this guide has been obtained from Professor Barry Stevens, FTTS, President of the Trichological Society 2014-16, University of Bolton, England. Under the direction of Professor Subhash Anand, MBE, Professor in Technical Textiles Institute of Materials Research and Innovation. As well as Technical Managers from a cross section of the food industry and Aburnet Ltd.

It is intended to assist personnel in hygiene critical environments to enable significant reductions in hair complaints. Industry has reported reductions of between 67% and 80% in hair complaints using our products guides and tools.

What This Guide Covers

1. Hair containment and food safety regulations
2. The cause of hair complaints
 - Hair shedding
 - Irreparable damage and severance
3. The impact of hair contamination
 - Health risk of food contamination
 - Consumer reactions to hair contamination
4. Why hair protrudes hair coverings
5. Effective containment of shed and damaged loose hairs – HACCP International certified
6. Sources of hair contamination and how to solve them
7. Effective training and compliance inc. FREE visual training aids
8. Demonstrating effective hair containment to customers
9. Product selection, usage and replacement frequency
10. Cost effective hair containment products & systems – HACCP International certified



1. Hair Containment and Food Safety Regulations

Food safe programs such as Safe Quality Food (SQF), British Retail Consortium (BRC), Food Safety System 22000 (FSSC 22000) and the Food Safety Modernization Act (FSMA) all state similar requirements that food handlers of non-packaged / non- sealed foods must have hair effectively contained using effective products used in an effective manner to contain loose hair.

Within HACCP Systems (Hazard Analysis Critical Control Point) risks from hair contamination should be controlled by implementing effective pre-requisite procedures. To achieve this requires implementation of effective products and controls to reduce the risk with compliance monitored usually as part of a robust pre-requisite program.

Compliance to the various regulations can be achieved using the following:

- Use of an effective hair restraint:-
ABurnet product selection guides and risk assessment tools help you to select the right product
- Evidence that the products used are effective.
ABurnet products are independently tested and certified to contain the loose hair found on all non-bald scalps
- Clear simple staff training with compliance to best practice.
ABurnet HACCP International certified ware guides
- Monitoring that the procedures in place are affective.
ABurnet HACCP International Certified Audit Tools are designed to monitor compliance

2. The Cause of Hair Complaints

According to Professor Barry Stevens, FTTS, President of the Trichological Society 2014-16, loose hair found to contaminate food is a consequence of two main factors:

Hair Shedding

Hair shedding is a constant occurrence for all non-bald people.

In Caucasoids, an average of 40-130 hair-shafts will be lost to natural cyclical processes per day. This equates to 13-43 hairs naturally shed from the scalp of each employee during an 8 hour period equating to 1,300-4,300 hairs per 100 people.

Irreparable damage and Severance

Modern hair care practices and styling causes irreparable damage to hair which often leads to blistering and eventual severance. This is believed to be the cause of most hair contamination in the food and drink we all eat.

Professor Stevens explains, “ these (hair shedding) figures can be **significantly augmented** by thermal injury and severance (following exposure to excessive heat from hair dryers, curling tongs etc) and chemical insult – e.g. bleaching, colouring, permanent waving, chemical relaxing or chemical straightening”. Conditioners do NOT repair this damage, often referred to as split ends. “These figures will be further increased by the daily losses of beard, nasal and ear hairs, eyebrows and eyelashes”.

Consider our daily grooming habits of showering in the morning, using higher settings on hair driers and straighteners or showering at night. Combine this with the knowledge that combing and showering does not remove all previously shed and loose severed hairs and we can understand why the many loose and severed hairs frequently cause hair complaints if NOT effectively contained.

Review your returned hair complaints; naturally shed hair will have the dermal papilla attached, (minute tissue which attached the hair to the follicle) – severed damaged hair ‘split ends’ will not.

3.The Impact of Hair Contamination

Heath Risk

According to Professor Stevens, hair cannot be eliminated as disease carriers however hand contact with the scalp during food production is probably more likely to act as a carrier. It is widely acknowledged that *Genus staphylococcus aureus*, one of the pathogens known to cause food poisoning are often present on the scalp and skin of people with good standards of personal hygiene. Therefore a **complete** covering of the scalp is prudent to create a barrier in environments where open food is handled or processed. Products with **proven effective** anti-microbial properties are also beneficial.

Consumer Reactions to Hair Contamination

Most consumers will feel sick and lose their appetite when finding hair in their food often preventing a repeat purchase. This is the main reason most supermarkets and restaurants around the world want hair complaints monitored and reviewed with staff to implement effective corrective actions.

4. Why Hair Protrudes Hair Coverings

According to Professor Stevens, hair grows in a random spiral configuration away from the scalp. According to research by Bolton University, hair at 0.04 to 0.1mm diameter will be pushed up through the needle gaps in woven and knitted fabrics, and more so in the inherent larger random gaps in spun woven and spun bond lace fabrics such as those used in mob / bouffant caps.

Professor Anand explains, “Non-woven materials such as those used in mob / bouffant caps and beard covers / restraints should NOT be used as a hair barrier fabric. Due to its rigidity, it will neither hold the head of hair, nor grip hair that protrudes through ... it is a totally unsuitable material.”

According to University of Bolton research:

1. An average of **84 hairs protrude through non-woven** head coverings such as mob / bouffant caps per **person per wear**.
2. Short hair is twice as likely to protrude through head coverings as longer hair.

Containment of shed, damaged and loose hairs is essential to protecting products from contamination with hairs.

5. Effective Containment of Shed and Damaged Loose Hairs

1. To contain hair effectively, hair needs to be folded flat and held with as many contact points as possible along the hair shaft.
2. The elastics should have both the stretch and critically the power to retain hair whilst being comfortable to avoid excess fidgeting.
3. Product should be designed to encase the hair line with long hair tied up at the nape of the neck. Balaclavas were **not** found to encase the hair line effectively.
4. Staff should be kept cool and comfortable to reduce fidgeting which is known to push more hair through the gaps in standard woven, knitted and more so in nonwoven material head coverings.
5. HACCP International has tested and certified specialist hair containment products that work to fold and hold more hair and restrict the passage of hair through the head covering's material whilst wicking moisture away from the wearer's scalp for comfort.

6. Sources of Hair Containment



Sources of hair contamination - and how to solve them

Fringe

Ensure head coverings are worn correctly - download FREE wear and hygiene guides at www.aburnet.co.uk/free-tools

Short Hair

Research found that short hair is 2X more likely to protrude through head coverings than long hair. Read the research findings at www.aburnet.co.uk/increase-hair-containment to find out why and how to control it.

Neck Hair

Consider KleenCap NeckGuard and new NeckShield - designed in response to industry requests to cover neck hair - see www.aburnet.co.uk/products/hairnets-food-industry for more info.

NEW PRODUCT



KleenCap MAX Neckguard



NEW PRODUCT

NeckShield
also covers beards & moustaches!

Crown

Ensure effective coverings are used which are both designed and independently performance tested to contain hair such as HairTite HygieNets, KleenCaps, NeckShields and Beard Covers - read the independent test findings at www.aburnet.co.uk/increase-hair-containment

Eyebrows

The most difficult area to contain as any covering is likely to be both uncomfortable and reduce vision causing both staff and health and safety issues. Use ABurnet's FREE HairBarrier tools GMP advice to ensure all staff have a good level of personal hygiene and quickly monitor this with the FREE on-line Audit tools with graphical reporting.

Nasal Hair

Register on the ABurnet website to review HairBarrier tools GMP advice on personal hygiene www.aburnet.co.uk/free-tools to ensure best practice is incorporated into staff handbooks, contracts of employment and agency agreements. Consider use of ABurnet's Beard Mask and Neck Shield incorporating HairBarrier and StayCool technologies which can be worn over the nose to safeguard food quality.

Ears

Ensure head coverings incorporate HairBarrier fabrics designed to contain shed hairs and that head coverings are both sized and worn to cover the ears. Use ABurnet's FREE audit tools and wear and hygiene guides to help train staff and quickly monitor their adherence to your policies.

Nape

In addition to using ABurnet's FREE wear and Hygiene guides, check your product's elasticity is both strong enough to encase and hold longer hair.

Arms

Contain arm hair by using shields appropriate for the work task. Workers often complain that plastic covers are hot to wear. Due to requests we are currently producing a trial quantity of arm covers in our HairBarrier and StayCool technology fabric. HairGon compatible, these Arm Shields are more comfortable than plastic next to the skin. Contact us now to reserve your trial stock. www.aburnet.co.uk/contact

Long Hair

Long hair has been found to tear mob cap material and drag head coverings away from the nape if not contained properly. Use ABurnet's blue HairTite HairTies and Bun Nets with super strong elasticity to effectively tie and hold long hair in a bun making the head covering effective. Available in both metal-free and, same cost, ferrous metal detectable for your due diligence.

For further information contact

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 Ilkeston, Derbyshire DE7 8EF Tel: +44(0)115 944 5909



7. Effective Training and Compliance including FREE HACCP International certified Visual Training Aids

The global food industry often employs many part time and temporary staff together with a significant proportion of migrant labour often making language a training communication problem. Therefore:-

- Training needs to be visual, relevant to audit findings and monitored to best practice with corrective actions where necessary.
- People get 'blind' to the same message. Rotate key messages to a time plan in line with audit findings and brief staff regularly
- FREE training and on-line audit material with instant graphical reporting can be found at www.aburnet.co.uk/free-tools/

8. Demonstrating Effective Hair Containment to Customers

Most national retailers and supermarkets want to see evidence of an effective hair containment policy as stipulated by the various safe food organisations.

- Risk-Asses all areas and process steps to identify risk. Review any non-compliances and conduct a root cause analysis to solve problems, implementing corrective actions. This can be as simple as team briefings and rotating key best practice posters in line with audit findings.
- Regular audits monitor performance keeping actions relevant and preventing larger scale problems. Use the FREE ABurnet on-line audit tools with instant graphical reporting to identify areas of the sequential manufacturing process to focus where attention is needed www.aburnet.co.uk/free-tools/. Food processors have found these graphics to be best practice useful in demonstrating effective hair containment practices to key customers allowing them to grow their businesses at the expense of those that don't.

9. Product Selection, Usage & Replacement Frequency

- To contain hair, hair coverings should be placed on first and taken off last, on site, away from the work environment.
- Ideally, hair coverings should NOT be moved or removed throughout the work shift.
- Microbial and allergen risks need to be risk assessed and the following table can be used to assist the site's individual risk assessments and replacement frequency policy. Hair containment products incorporating tested anti-microbial treatments are used by industry day long where microbial risks are present.

Once risk areas are identified, ABurnet have HACCP International Certified solutions for all your hair containment needs in various sizes including:

Products	Uses
Hair Nets	Head
Hair Nets with Neck Guard	Head and Back of Neck
Caps	Head Covering
Caps with Neck Guard	Head and Back of Neck
Neck Shields	Neck
Arm Shields	Lower Arm
Head Bands	Long Hair
Hair Ties	Long Hair
Bun Nets	Long Hair
Beard Nets	Beards and facial hair
Beard Shields	Beards and facial hair

The following table and flow diagram can be used to aid in the assessment. Once risk areas are identified ABurnet have solutions for all your hair containment needs

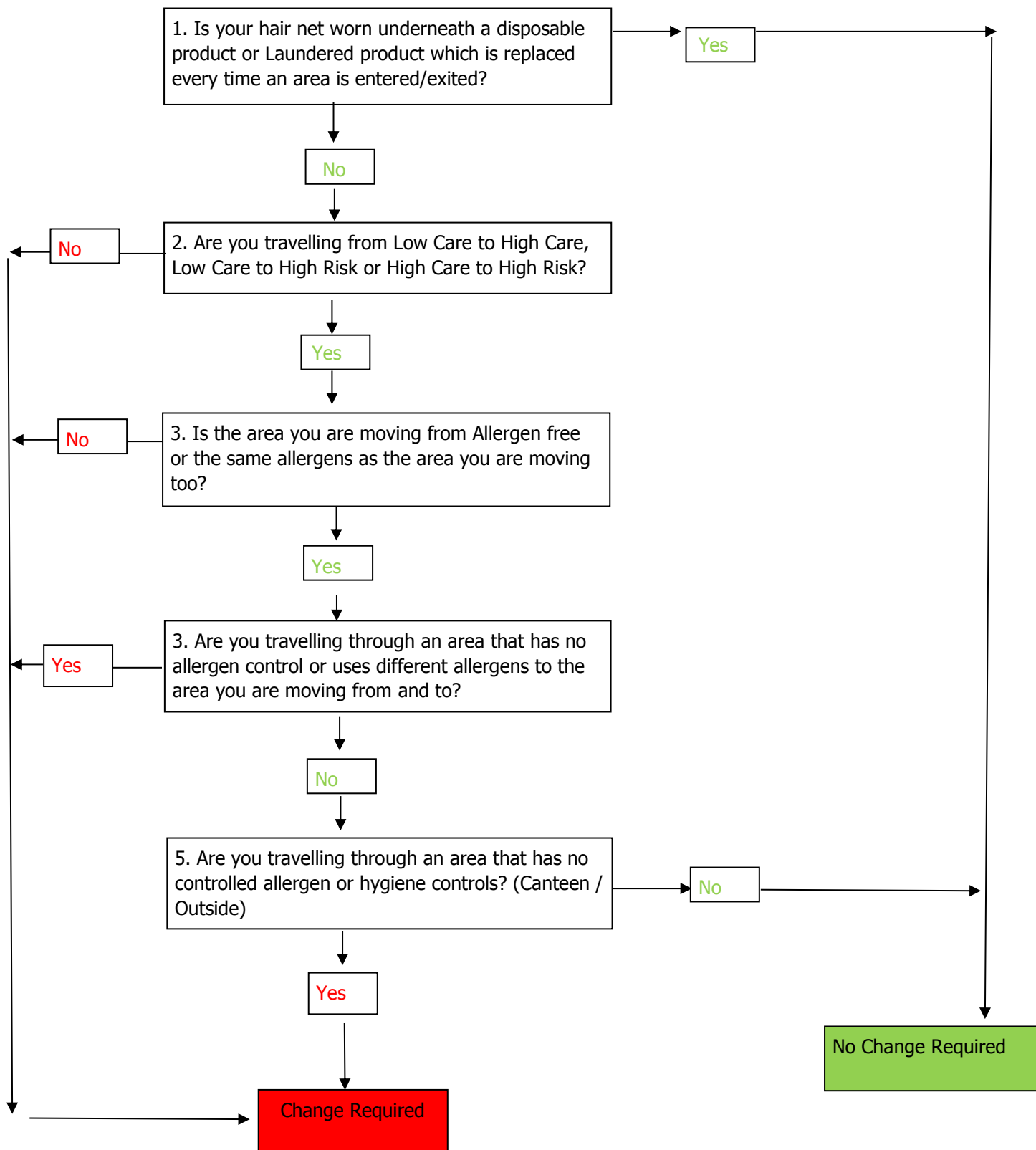
Pre Requisite Hair Containment Checklist

	Aspect	Tick	Comments
1.	Assess Environment <ul style="list-style-type: none"> - Ambient temperature - Work intensity; are workers hot or cold? - Level of risk? High v Low Care - Movement between areas - Microbiological & Pathogenic risk - Allergens 		
2.	Assess types of Headwear inc Beard/Facial Hair <ul style="list-style-type: none"> - Hairline encasement - Sizing & elastics for workforce - Level of protection; head, beard, neck, arm 		
3.	Assess Replacement Frequency <ul style="list-style-type: none"> - Hair containment risk assessed for products & process - When removed don't re use headwear unless cleansed in a hair dissolving wash additive between uses. 		
4.	Implement a visual based training programme <ul style="list-style-type: none"> - For FREE downloads visit www.aburnet.co.uk/free-tools 		
5.	Design audit of staff adherence to best practice <ul style="list-style-type: none"> - Set audit frequency & review results weekly & monthly. For FREE online tools visit www.aburnet.co.uk/free-tools 		

IMPORTANT NOTE

Never re-use head coverings unless washed in a proven hair dissolving wash additive such as HairGon. The mechanical forces during laundry will **not** dislodge the residual hairs. In tests, **after a single use residual hair was found in an average of every 2.68 used head coverings**

Diagram for assessing the need to change Hair Containment item between areas



10. Cost Effective Hair Containment Products & Systems – HACCP International certified

Head Covering(s)		University of Bolton Findings				Additional Hair Containment Technology		
Under	Outer	Actual avg. qty. protruding hairs per use per person	Factored avg. qty. protruding hairs per use per person	Hair containment improvement factor	Short hair protruding over long hair multiplier	Hairtite Technology*	hairBarrier Technology*	staycool Technology
None	12 GSM Mob Cap	74	85	0.0	2.3	✗	✗	✗
None	KleenCap Standard	35	35	2.4	2.0	✗	✓	✗
HairTite Standard	12 GSM Mob Cap	21	21	4.0	1.6	✓	✗	✗
HairTite Standard	KleenCap Standard	20	20	4.3	1.7	✓	✓	✗
HairTite HiCare	12 GSM Mob Cap	15	15	5.7	1.8	✓✓	✗	✗
HairTite HiCare	KleenCap Standard	15	15	5.7	1.7	✓✓	✓	✗
HairTite Standard	KleenCap Max	11	11	7.7	1.6	✓	✓✓	✓
HairTite HiCare	KleenCap Max	8	8	10.6	1.6	✓✓	✓✓	✓

***HairTite and HairBarrier technologies help hold protruding hairs**
 Read the full research findings online at www.aburnet.co.uk/increase-hair-containment

Not Certified

HACCP Int Certified



500 x magnification of human hair against fabric

- 12gsm mob cap
- Inherent gaps in material easily allow hair to protrude

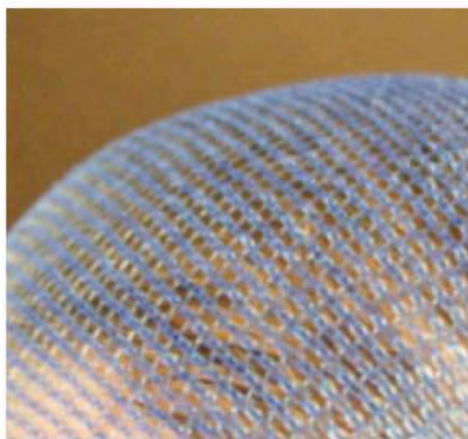
- KleenCap Breathable HairBarrier fabric restricts hair penetration
- StayCool Technology transports moisture through the fabric to evaporate into the atmosphere to help keep workers cool
- AntiMicrobial inhibits the multiplication of bacteria and fungi such as Gram positive Staphylococcus.

Independently tested for 2X hair containment over a diamond shaped mesh hairnet for the same cost, namely;

- HairTite Standard over 5mm diamond shaped mesh
- HairTite Hi-Care over 3mm diamond shaped mesh



Not Certified



HACCP Int Certified



Photographs courtesy of International Food Hygiene magazine



Hair protruding through 12gsm mob cap at Posterior Vertex (lower crown)



Hair not protruding through KleenCap Max at Posterior Vertex (lower crown)



Independently tested to have: **2-X** more hair containment of a diamond mesh hairnet of the same cost

70% more than **Honeycomb** & **82%** more than **bouffant/mob cap**

Feedback From Industry Experts



“Food production personnel can effectively prevent scalp hair contamination through the wearing of HairTite HygieNets and KleenCap-Max with HairBarrier products such as Neck Shield... if new each day or cleansed with HairGon after a single day’s wear to remove any residual hair shafts caught in the material...” – Professor Barry Stevens, FTTS, President of the Trichological Society 2014-16



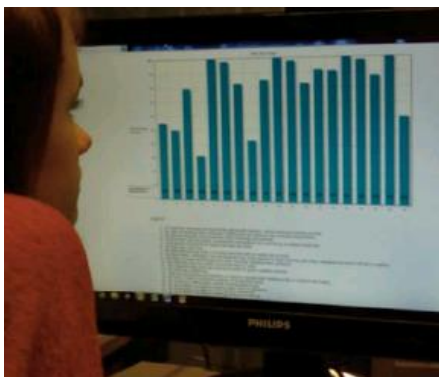
“I am of opinion that the KleenCap –max hair nets as supplied to me by Aburnet Ltd if carefully fitted to freshly washed hair and left untouched should be effective in containing shed and severed hair shafts” – Professor Barry Stevens, FTTS, President of the Trichological Society 2014-16

“KleenCaps look good; the cap lightly holds the hair and I cannot envisage any hair escaping through the fabric structure. The triple elastic distributes pressure evenly whilst ensuring hair line safety. I understand the StayCool technology is proven to wick moisture away from the head and may regulate the wearer’s temperature” - Professor Barry Stevens, FTTS, President of the Trichological Society 2014-16

“We have trialled the KleenCap and the feedback from the operators is that the KleenCap is very comfortable” – Michaela Watson, QA / Compliance Manager, Freshtime UK Ltd. England.

Download Free Training & Audit tools:

- Wear guides,
- Best practice guides,
- On line training and
- Audit tools with instant graphical reporting



“The free audit tools are great to use as it makes audits easy and you can soon find out where the issues are, the reports are great to show the customer to demonstrate that you are being proactive”
 - Michaela Watson, QA / Compliance Manager, Freshtime UK Ltd. England.

“This is a really innovative approach to hair containment and complaint reduction. A choice of hair coverings which are well supported with clear visual aids and a KPI management system to track improvements by area. A one-stop-shop” – Ann Marie Helm, Technical Manager, Fox’s Biscuits, Batley, 2 Sisters Food Group.

For more information on our HACCP International Certified products, training and auditing tools simple contact below

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