Heat Stress Toolkit Introduction

Part of *AAFA's Toolkit to Protecting Workers from Heat Stress:*

- **Introduction to the Toolkit**
- **Heat Stress Management Guidelines for Manufacturers**
- **Heat Stress Management Workbook for Manufacturers**, the companion to these guidelines
- **Heat Stress Implementation Guidelines for Brands**

September 2026

AMERICAN APPAREL & FOOTWEAR ASSOCIATION

Table of Contents

Heat Stress Toolkit

Introduction

A practical roadmap for brands and manufacturers, built on the AAFA Guide to Protecting Workers from Heat Stress (v2.0, April 2026)

SECTION A

What is this toolkit?

In April 2026, AAFA released the Guide to Protecting Workers from Heat Stress. This toolkit is the next step. It turns that guidance into something brands and manufacturers can put to work: clear policies, monitoring protocols, action plans, and checklists, so the industry can both mitigate and adapt to the extreme heat hitting production regions.

Inside, you'll find four documents, designed to be read together:

- **Heat Stress Management Guidelines for Manufacturers**
- **Heat Stress Management Workbook for Manufacturers**, the companion to the guidelines
- **Heat Stress Implementation Guidelines for Brands**
- **Brands' Supplier Survey Questionnaire**, the companion to the brand guidelines

What the manufacturer guidelines ask for is echoed in the brand guidelines, and vice versa. Both rest on the same five principles: protecting workers, measuring to act, shared risk, and financial responsibility, a contextual approach over a prescriptive one, and two-way communication (see Section B).

Why now

2026–2027 El Niño conditions could rank among the most extreme on record.[1] By that measure this toolkit isn't just timely; it's urgent, and arguably late. Unprecedented heat is now the normal operating environment for factories, not an exception.

- **Heat is a large-scale human-rights and worker-wellbeing issue.** The International Labor Organization (ILO) links 18,970 deaths and 22.87 million injuries[2] a year to excessive workplace heat. Women make up the majority of the garment workforce in several producing countries, and a 2025 Lancet study found they face prolonged heat stress, with cooling measures less effective at bringing their body temperature down.
- **Heat is an operational issue.** The latest New York University (NYU) Stern report (June 2026)[3] finds that higher heat and humidity drive absenteeism, slow the pace of work as fatigue sets in, and raise defect rates, reprocessing, and delivery delays through power outages and lost production.

[1] https://www.theguardian.com/environment/2026/sep/03/el-nino-supersizing-before-our-eyes-united-nations

[2] https://www.ilo.org/resource/news/climate-change-creates-%E2%80%98cocktail%E2%80%99-serious-health-hazards-70-cent-world%E2%80%99s

[3] https://bhr.stern.nyu.edu/wp-content/uploads/2026/06/NYU-CBHR-Extreme-Heat-in-Garment-Suppy-Chains_FINAL-UPDATED-June-9.pdf

- **Heat is a supply-chain resilience issue.** Acute heat events disrupt the flow of production and delivery, and recovery is slow and costly.

How this toolkit was made — and why that matters

These documents followed a co-creation model that may itself be a lesson for the industry. The manufacturer toolkit and workbook were written by the people who actually run factories, so the guidance is rooted in operational reality. A secondary board of four manufacturers, a medical doctor, brands and worker-focused civil society organizations then reviewed it. The brand guidelines and survey went through the same test in reverse, with extensive input from manufacturers and civil society. The people who have to use these guidelines were at the centre of designing them, with others there to check the blind spots. (See Section D for the full list of authors and reviewers.)

AAFA and the Heat Guidance Working Group *(See Section D for description of Working Group*) will regularly review the *AAFA Guide to Protecting Workers from Heat Stress* and this *Heat Stress Toolkit* to incorporate new or update information regarding heat related illness, best practices, or global standards to reflect the most up to date and accurate guidance. This review will culminate in a formal annual public review process that the Heat Guidance Working Group will open in January of each year that will lead to publication of an updated Guidance in April of each year. The updated *AAFA Guide to Protecting Workers from Heat Stress* and updated *Heat Stress Toolkit* will include a "Change Record" that will list all items that were updated, added, or deleted.

SECTION B

The five principles behind this toolkit

We wanted these guidelines to address shared risk and responsibility head-on, and not to become another standard that quietly shifts the burden of data collection and investment onto manufacturers. All four documents should be read and applied in line with the five principles below.

1 | A toolkit to protect workers' health and wellbeing, not an audit protocol.

••• PRINCIPLE 1 · PURPOSE

The manufacturer guidelines are not designed to be used as an audit or verification protocol, and shouldn't be. Facilities keep the flexibility to choose controls that fit their context, as long as workers are properly protected. The goal is to recognize and relieve heat stress for workers early. Documentation, customer service, and brand compliance follow from doing the work.

2 | Measure to act, and keep the data with the facility.

••• PRINCIPLE 2 · DATA

Monitoring exists to trigger protection and target investment, not to feed passive tracking or compliance reporting.

- **Data is owned by the facility.** Readings and records are generated, held, and owned by the facility, and available for review on reasonable request.

- **Disclosure is periodic and aggregated,** not a continuous feed into a dozen proprietary brand platforms.
- **One common format.** Brands should use the brand guidelines and the standard supplier survey questionnaire in this toolkit as a single, joint verification approach, rather than sending many versions of the same survey to the same factories. Multi-stakeholder initiatives and standard-setters should adopt the standard supplier survey questionnaire to help drive convergence across the industry.

If a brand asks for more than this guidance calls for, brands should recognize the cost: suppliers own their data, and should be compensated for anything developed beyond what this toolkit recommends.

3 | Shared risk and financial responsibility.

••• PRINCIPLE 3 · SHARED RISK

Sharing risk means shifting the relationship to a partnership: from brand as solution-prescriber and supplier as implementer, to brand as targeted enabler, with both sides absorbing some of the consequences when disruption hits. In practice, this means creating the commercial conditions for manufacturers to invest in resilience to protect workers from heat stress.

1. **Back the confidence to invest.** Brands can't guarantee consumer-facing future demand, but purchasing commitments and the wider partnership shape whether a manufacturer can make and recover a resilience investment at all.

2. **Share costs where the economics don't work for the manufacturer alone.** Some measures matter for the resilience of the whole supply chain but won't pay back for the manufacturer on their own. Here brands are recommended to weigh appropriate cost-sharing, factoring in the scale of the investment, the benefit to the wider chain, and the manufacturer's ability to recover it.

3. **Share the downside when disruption hits production.** Heat measures and acute heat events can affect capacity, delivery, and order fulfilment. Brands and suppliers should pre-agree as to how these impacts are handled, so the cost of protecting workers isn't transferred disproportionately to only the suppliers.

4 | Contextual over prescriptive.

••• PRINCIPLE 4 · CONTEXT

Heat stress management is deeply contextual, and needs a systematic approach backed by scientific evidence and practical realities rather than a prescriptive one that can sometimes ignore science or the realities on the ground. Operational, financial, technical, and relational factors all shape what's possible. What works in one factory may fail in another, and even within a factory, sewing and ironing need different answers. These guidelines are not intended to be read to mean every factory is the same, or that one facility's approach can simply be copied to the next. Treat them as a direction of travel: real shifts take time and won't happen overnight.

5 | Two-way communication.

••• PRINCIPLE 5 · COMMUNICATION

A contextual approach only works if the conversation runs both directions. Brands are recommended to co-create heat stress programs with their manufacturers and with the workers on the shopfloor: communicating expectations clearly, resourcing implementation, and talking openly about commercial impact without commercial penalty. Manufacturers, in turn, are recommended to engage brands early and do strategic planning in advance, flagging serious heat events, the financial support and purchasing commitments needed for high-capex or high-opex controls, and any delivery adjustments before they become crises.

SECTION C

What we couldn't solve: open questions & research needs

We don't claim this toolkit is complete. Writing it, we argued hard, and kept hitting questions we couldn't fully answer ourselves yet. We see it as a starting point, not a finish line, so we're setting those questions out openly and asking the industry, philanthropy, researchers, and financiers to help continue, iterate, and further discuss and develop it together. Some of those questions are below.

The monitoring challenge

A single factory floor holds enormous thermal variation. High-radiation areas (ironing, pressing, washing, drying, fusing, laundry) create localised radiant heat that needs area-specific monitoring, not one building-wide reading. We kept asking: what is the simplest way for an EHS officer to monitor heat stress on a busy shop floor, simple enough to fit their day but accurate enough to drive real action? We used the U.S. Occupational Safety and Health Administration (OSHA) standard to set thresholds, knowing the standard is U.S.-centric; chronically hot production regions need research into the right standard for them. We also left out variables like workload and clothing for now, to make it easier for facilities to start measuring at all.

The controls challenge

Rapid warming this decade has pushed factory cooling and ventilation to the brink, while standard industrial construction and HVAC design still rely on Typical Meteorological Year (TMY) data that averages decades of history and badly underestimates today's climate. We need design inputs built for the climate we are in now and expect over the next decade or two.

The controls in the manufacturer guidelines are tried and tested by the factories and reviewers who wrote them, but the list is not exhaustive, and we don't know whether they'll still be enough five years from now. Engineering controls (envelopes, ventilation, cooling, heat-source management, nature-based solutions) and administrative controls (protective clothing, hydration, medical management) all need more research into feasibility and real effectiveness at improving thermal comfort.

Decision-making tools

A diagnostic approach needs diagnostic aids. Manufacturers need tools to choose the controls that fit their context, weighing improvement in shopfloor thermal comfort against capex, opex, ROI, and emissions.

Financing the transition

Adaptation demands high-capex, often zero-payback investment, or higher-opex. Who funds it, and through what mechanisms? This is where "shared responsibility" most needs definition, so the cost does not fall mostly and only on manufacturers alone. There is a crucial role here for philanthropy, development finance institutions (DFIs), and financiers. As an industry, we still haven't found the right ways to fund decarbonization on the ground; with heat stress, we can start now and design new ways of funding this work.

Worker-centric research

These guidelines are aimed mainly at brands and manufacturers. They do call for workers to be involved and consulted at every stage, with particular care for vulnerable workers, but there is far more to do on protecting workers both at work and beyond it, at home and in transit. Worker income, health impacts, the potential for heat-related, heat-risk health insurance, and co-creating heat stress management with workers themselves are all areas we want to see taken further, collectively and proactively.

SECTION D

Credits: authors & reviewers

Commissioned by the American Apparel & Footwear Association (AAFA), this toolkit was designed through a collaborative process. The AAFA Heat Stress Working Group—consisting of brands, manufacturers, and worker-advocacy groups—developed the Brand Implementation Guidelines and Supplier Survey. Meanwhile, the Fashion Producer Collective (FPC) facilitated the manufacturer-specific guidelines and workbook. Key contributing authors included Elevate Textiles, Inc., Epic Group, Shahi Exports, and YKK Corporation, with additional review support from Crescent Bahuman Ltd, MAS Capital (Private) Limited, TAL Apparel, Yee Chain, and the Vaada Hope Foundation.