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B Resource Guide:

Worker Health and Safety

Highlighting Best Practices of Certified B Corp TS Designs



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Background

TS Designs, located in Burlington, NC, is a custom t-shirt printer founded in 1977. The company was certified as a B Corp in March 2008 and is dedicated to creating a triple bottom line business. Its sustainable manufacturing processes and innovative employee programs emphasize workplace health and safety as central to the pursuit of this mission.

TS Designs currently has 18 employees, including management, sales, accounting, and operations staff. Shirts are screen printed at its main building in Burlington, NC, which also houses its central office space. If orders require colored shirts other than white, they are garment-dyed using the patented REHANCE process at the dye house, a leased facility located a mile down the road. Weekly order volume varies, but on average 6,000 t-shirts are printed per week.

Reducing Product Toxicity to Improve Community Health

TS Designs constantly strives to develop quality products with sustainable printing techniques. The company offers three signature t-shirt brands: TSD Organic, TSD Carolinas (aka "Cotton of the Carolinas"), and TSD Recycled. These shirts are made exclusively for TS Designs by its supplier Mortex, located less than 100 miles away in Middlesex, NC. Additionally, conventional and organic styles are sourced from Anvil and American Apparel.

The water-based inks used by TS Designs do not use plastisol. Plastisol typically contains PVC, which emits dioxins during manufacture and disposal, and phthalates, which can cause negative health effects,¹ including cancer and endocrine disruption.² Both of these chemicals leach into the wastewater stream after multiple washes. Moreover, there are quality issues: plastisol leaves a rubbery print on the shirt that cracks and peels over time and is not breathable.

Most other t-shirt printers use plastisol inks because they are opaque and sit brightly on top of a dark fabric. Water-based inks, in contrast, are translucent and seep into the fabric. This makes it challenging to print light colors on dark shirts.

TS Designs' patented REHANCE process is a breakthrough technology that allows light water-based inks to be printed on garment-dyed shirts, including dark shirts. As a result, plastisol is avoided. The pigments used in these inks contain only trace heavy metals (less than 100ppm, the same as drinking water). Shirts are printed first, then dyed (instead of printing on

a shirt that is already colored). This process is more labor intensive, but allows for tight inventory control.

As a result of these policies, TS Designs' products are better for the environment and the health of the company's employees and consumers. The company is also better prepared to implement new regulations such as the 2008 US Consumer Product Safety Improvement Act (CSPIA), which bans certain phthalates from use in products marketed to children.³ In order to be compliant with this law, a product must not contain more than 0.1% of any of six specific types of phthalates. Many major retailers now require compliance of all textile articles to the new phthalate restrictions. This puts pressure on printers and their suppliers, which in turn put pressure on ink companies to create new products and processes that comply with the regulations.⁴

Health and Safety Initiatives

Employee Health

TS Designs strives not only to make a sustainable product, but to also run its business operations in a sustainable way. In addition to using bio-diesel fuel and composting, this includes prioritizing the health and wellness of its employees. Some of these practices include a living wage paid to all employees, over 15% of profits shared, and over 50% of health insurance premiums covered.⁵

One employee wellness program is particularly unconventional: in 2009 TS Designs planted a permaculture garden on its property, complete with live chickens, fresh eggs, fruits and vegetables, and honeybees. Employees are required to work in the garden for 30 minutes per week. The entire office often takes this time together, socializing as the garden is tended. Community education events with expert presentations about poultry, garden design, and beekeeping, are also planned.

This program is innovative in that the company provides paid time outdoors for all of its workers. In addition to the health harvest itself, the program aims to create positive health impacts through this outdoor activity. Over the three years this policy has been in place, it has gone through several iterations:

1. At first, gardening was introduced on a fully volunteer basis. Anyone who wanted to participate could. As a result, contributions were disproportionate. Those who participated the most were able to take home the most produce. Unfortunately, there was a lot of spoilage because there was not a coordinated harvest effort. People would just take what they could use.
2. The second year, employees were asked to work in the garden 30 minutes a week through designated paid time. Senior management kept a to-do list on a white board in the break area so people would know which tasks to prioritize. These changes improved the program, but the effort remained disjointed.
3. In the third year, weekly team-based coordinated garden workdays were instituted. Employees are divided into three teams and each has a specific task to perform in the garden. This way, the company can get done exactly what needs to be done in the

garden, and also builds camaraderie amongst employees who otherwise might not work together closely during the day.

Employees have been receptive to this program, and there have not been any personnel challenges reported to date. According to Eric Michel of TS Designs, a key goal of the garden is to permanently change employee eating habits, and eventually, improve their health. “It’s so easy to go down the road to Wendy’s for a burger if that’s what you’ve been doing for years,” Michel said.⁶ Employees are encouraged to prepare food from the garden or bring their own meals from home as healthy alternatives to fast food. An on-premise kitchen allows for easy preparation. Communal lunches featuring fresh produce from the garden are scheduled for all employees.

TS Designs also operates an employee fitness center on its premises. Michel noted that the equipment was outdated, and that the company would ultimately like to offer more options. Management is waiting to make sure there is enough employee demand before investing in new equipment.

Other Benefits

TS Designs offers several key benefits for full time employees to improve, including:

- TS Designs matches the first 3% of its 401K retirement plan.
- TS Designs pays 50% of costs for Blue Cross Blue Shield health insurance for all employees. The plan also includes eye and dental insurance. This benefit has been difficult to maintain for a business TS Designs’ size but the company refuses to drop the coverage, as it believes it is essential to its triple bottom line mission.
- TS Designs provides standard paid time off where the longer an employee works, the more hours he or she gets per year. The company used to have separate sick and vacation time, but now rolls it all into one category.
- For every four hours worked, employees are required to take at least a 15 minute break. Such breaks go beyond state and federal regulations, which do not require mandatory breaks. These breaks are paid as per federal law.⁷

Workplace Safety

TS Designs follows North Carolina state labor standards (the Occupational Safety and Health Act of North Carolina)⁸ and federal (OSHA) requirements for workplace safety policies. Its Burlington, NC headquarters has 16,000 square feet of production area and 4,000 square feet of office area.⁹ Eye and face protection are used to protect against chemical and environmental hazards.

At the dye house, where shirts are colored and processed after printing, workers wear smocks and boots. Large vats of dye and steam, chemical fixing agents, and huge spin dry units pose serious risks, including chemical irritation, machine injuries, and slippery floors. Training is extremely important for these workers. Eric Michel noted that it takes new workers several months to be trained to work in the dye house.

TS Designs has a clear workplace safety policy detailed in its Employee Handbook. It emphasizes cooperation and compliance across the company to create a safe working environment. An outline¹⁰ of the health and safety policy includes:

- A. General Policy Statement:** outlines the company's commitment to create a safe working environment and the need for employee commitment to maintain health and safety standards.
- B. Safety Rules**
- a. General Safety Regulations**
 - Reporting requirements (failure to report may result in loss of Workers' Compensation benefits for the injury)
 - Keep work stations clean and free of safety hazards
 - Running is prohibited
 - Avoid unsafe postures and lifting positions
 - Become familiar with Material Safety Data Sheets
 - b. Apparel, Footwear, and Jewelry**
 - Substantial hard-soled street shoes or gym shoes (closed-toe) must be worn when in mass production areas, or other areas that pose a risk
 - Employees will not wear jewelry, hair, or apparel in a manner that creates a hazard to their safety
 - c. Eye and Ear Protection**
 - All employees, visitors, and vendors must wear company-provided safety or company-approved prescription safety glasses when working in designated eye protection areas.
 - Dark-tinted glasses will not be permitted on the job.
 - All employees working in designated ear protection areas must wear ear protective devices provided by the company.
 - d. Fire Safety**
 - Employees may smoke outdoors only in designated areas.
 - Fire extinguishers and other emergency equipment are to remain at their designated stations in case of emergency.
 - When using hazardous fire-producing equipment, employees must follow appropriate safety measures.
 - Never pile material or place hand trucks, pallets, crates or other equipment where they will block exits, fire-fighting equipment, electric lighting, power equipment, or obstruct aiseways.
 - Employees must know the exact location of fire extinguishers in their work area.
 - e. Equipment Safety**
 - Employees should be familiar with the safety practices for their equipment and work area. All safety equipment furnished by TS Designs must be used and maintained in good working condition.
 - Employees must work cautiously with all machines.
 - Employees should not operate any machine or power tool until they have been instructed in its operation.
 - Defective equipment and/or unsafe conditions should be immediately reported to supervisor.

- Removal of guards (or other protective devices) from equipment is prohibited, except when necessary for maintenance or changeover purposes. Guards must be replaced following maintenance prior to line start up or changeover purposes.
- If a guard (or other protective device) is removed due to maintenance or changeover, all workers must be informed.
- No employee shall place any part of his/her body in moving machinery.
- Employees must not repair or lubricate a machine while it is in operation.
- Employees must not tamper with safety devices on equipment.
- Employees must make sure other employees are not in the way before starting machinery or equipment.
- Employees should use the designated tool for each job.
- Do not use compressed air to blow dirt off yourself or anyone else.
- Electronic headsets are not to be worn in the plant in any area, at any time.

f. Vehicular Safety

- Use of forklift is confined to appropriately trained personnel.
 - Employees must operate all forklifts or pallet jacks with extreme caution and at a safe speed.
 - No passengers or riders are allowed on forklifts or pallet jacks.
 - When approaching corners, forklift drivers will slow down, stay in the middle of the aisle and sound horn.
 - When traveling, empty or loaded forklifts must have forks in a lowered position or six (6) to eight (8) inches from the floor. Full forklifts or pallet jacks must travel in reverse.
 - Forklifts or pallet jacks will not be used as ladders and must be equipped with OSHA approved safety platform cages for that purpose.
- **Accident Reporting:** Emphasize the requirement to immediately report occupational illness or injuries to a supervisor. Establish procedures for reporting, treatment, and review.
 - **Disciplinary Actions for Disregard of Safety Rules:** Create a clear succession of disciplinary actions for employees who show a disregard for their safety and the safety of others, as per OSHA requirements. An employer who does not discipline an employee for severe or constant disregard for safety rules can be fined.
 - **Safety Committee Meetings:** OSHA guidelines encourage employee involvement in company-wide safety committee meetings. At these meetings, emergency procedures will be defined and communicated to all staff.¹¹
- g. Fire Evacuation Plan:** The plan consists of four (4) main points or objectives. All personnel are trained on how to evaluate a fire, extinguish a fire, and notify others either by use of the intercom or the alarm system.
1. **Evaluation-** Evaluate fire and determine if it can be negotiated with a fire extinguisher. If the situation permits, extinguish fire.

2. **Evacuation-** If fire cannot be extinguished, evacuation procedures are necessary.
 - a. Exit building with a sense of purpose and move to the assembly area by the safest, most direct route.
 - b. If possible, set fire alarm when exiting, or use the paging system to notify all other personnel that a fire is threatening persons inside the building.
3. **Assembly-** All personnel must move directly and quickly to assembly area. Once in the assembly area, personnel must assemble by department and remain in the assembly area until directed to do otherwise.
4. **Accountability-** Supervisors will be responsible for physically counting all members of their department and any temporaries assigned to them. Once the count is complete, the Supervisor will report people present (by number) and people missing (by name). Only fire personnel will be allowed back into the building. Once total count is received, it will be compared to the master attendance roster.

A workplace safety training program informs and educates each employee in these policies and procedures, including hazard communication, personal protective equipment, lock-out/tag-out, fire extinguisher training, evacuation training, accident reporting and handling, and the general policies outlined above.

An Integrated Approach: People, Planet, Profit

As a Certified B Corporation, TS Designs aspires to add definition and legitimacy to its pursuit of a triple bottom line. In this pursuit TS Designs goes above and beyond the minimum health and safety requirements.

In addition to complying with state and federal standards, health and safety considerations are thoroughly integrated in TS Designs' operations. The use of water-based inks limits exposure to harmful chemicals in the workplace and the environment. PVCs, heavy metals, and phthalates contaminate the waste stream if they are present on a garment, but it is important to keep in perspective that most times these chemicals are not at a high enough level to actually harm consumers. Infants and young children are the most vulnerable, specifically to heavy metals (fairly rare on products these days due to federal requirements) and phthalates (a standard component of plastisol inks).

Other practices to improve employee health at TS Designs include a permaculture workplace garden and generous employee benefit plans. The garden provides fresh fruits and vegetables, eggs, and honey for employees, and creates paid time outside for all workers.

Apparel companies and consumers looking to minimize health risks should seek out companies like TS Designs that specifically use low-impact, safe inks and chemicals. For products made with more traditional inks, consumers should wash the shirt before wearing it the first time. There are a multitude of chemicals, dyes and inks that can irritate the skin if the shirts are not handled properly on the back end, especially if the shirts are discharge printed.

¹Ecology Center, “Adverse Health Effects of Plastics,” Available at: <http://www.ecologycenter.org/factsheets/plastichealtheffects.html>

²Health Care Without Harm. “Phthalates and DEHP,” Available at: http://www.noharm.org/us_canada/issues/toxins/pvc_phthalates/phthalates.php

³US Consumer Product Safety Commission, Office of Information and Public Affairs. Available at: <http://www.cpsc.gov/cpsc/pub/prerel/prhtml09/09130.html>

⁴International Coatings Company, “Phthalates and Why It’s Impacting Textile Screenprinting,” Available at <http://internationalcoatings.wordpress.com/2009/10/01/phthalates-and-why-its-impacting-textile-screen-printing/>, and “Phthalates Fact Sheet,” Available at: <http://www.iccink.com/>.

⁵ B Impact Rating System, Available at: <http://www.bcorporation.net/tsdesigns>

⁶Interview with Eric Michel, TS Designs, Burlington, NC. April 25, 2011.

⁷US Department of Labor, “Breaks and Meal Periods,” Available at: <http://www.dol.gov/dol/topic/workhours/breaks.htm>

⁸N.C. Labor Laws, including the N.C. Occupational Safety and Health Act, are contained in Chapter 95 of the N.C. General Statutes. Available at: <http://www.nclabor.com/osha/etta/etta.htm>

⁹Pendergraph, Stuart. “TS Designs, Inc. Energy Audit,” December 12, 2010. Available at: <http://tsdesigns.com/blog/>.

¹⁰T.S. Designs, Inc., Safety Training Program. Provided on May 2, 2011.

¹¹Inc., “Sample General Safety Policies,” Available at: <http://www.inc.com/tools/2000/12/21572.html>