



# CORPORATE RESPONSIBILITY CODES, POLICIES & TOOLS

(2020/ V2)

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## PREAMBLE

The BIZZBEE, GRAIN DE MALICE, JULES, ORSAY, PIMKIE and ROUGE GORGE retail companies launched a joint initiative, referred to as FashionCube, and wrote this Supply Chain Code of Conduct including Child Labour & Young Workers Policy, Forced Labour policy, and Environmental & Chemical Guideline together to express their common understanding of ethical business conduct. The acknowledgement of these documents as well as the ZDHC MRSL and the ZDHC Wastewater Guideline, is a prerequisite for entering into a business relationship with any of the above-mentioned independent companies, hereafter referred to as "the Principal".

The Principal aims to maintain a standard of excellence in every aspect of the business, including legal, ethical and responsible conduct in all its operations. FashionCube expects these commitments to be shared by all direct and indirect business partners. Therefore, FashionCube requires its business partners to circulate and apply the principles listed in these codes and policies within the business partner's organization and their supply chain.

Business Partners must comply with all applicable national and international laws and regulations which need to be respected in all cases. In the case of a conflict between national and international regulations, the regulation offering the most stringent protection shall be applied. Those regulations also will apply if they are more stringent than the Principals codes and/or policies.

The Principal recognizes the connection between its own purchasing practices and the implementation of its policies. Therefore, FashionCube commits to work on improving its own purchasing practices to facilitate the implementation of these policies.

### The Principal commits himself to:

The basic principles of human rights, as laid down in the International Bill of Human Rights (UNDHR, Civil and Social Covenant)

The Guiding Principles on Business and Human Rights (UNGPs)

The Conventions of the International Labour Organization (ILO); especially convention 1921 (No.1), 1921 (No. 14), 1930 (No. 29), 1948 (No. 87), 1949 (No.95), 1949 (No. 98), 1957 (No. 105), 1970 (No. 131), 1973 (No. 138), 1999 (No. 182), 1951 (No. 100), 1958 (No. 111), 1981 (No. 155), 2017 (no.205)

The OECD Guidelines for Multinational Enterprises

The OECD Due Diligence Framework for the Footwear and Garment Sector

The Dhaka Principles of Migration with Dignity

The basic principles of environmental protection

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# SUPPLY CHAIN CODE OF CONDUCT

(2020/ V2)

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## **1. FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING**

- 1.1. Workers, without distinction, shall have the right to join or form trade unions of their own choosing and to bargain collectively. The business partner shall not interfere with, obstruct or prevent such legitimate activities.
- 1.2. All employers shall adopt an open attitude towards the activities of trade unions and their organizational activities.
- 1.3. Where the right to freedom of association and collective bargaining is restricted or prohibited under law, the employer shall not hinder alternative forms of independent and free workers representation and negotiation.
- 1.4. The business partner shall not discriminate against or otherwise penalize worker representatives or trade union members because of their membership in or affiliation with a trade union, or their legitimate trade union activity.
- 1.5. The business partner shall give internal worker representatives access to the workplace in order to carry out their representative functions.

## **2. FORCED LABOUR**

- 2.1. All work must be conducted on a voluntary basis, and not under threat of any penalty or sanctions.
- 2.2. The use of forced or compulsory or unpaid labour in all its forms, including prison labour and unpaid overtime work, is strictly prohibited.
- 2.3. Workers shall not be required to make deposits / financial guarantees.
- 2.4. Identity documents of any worker (such as passports, identity cards, etc.) shall not be confiscated.
- 2.5. No abusive delayed payment of wages shall occur.
- 2.6. The right of workers to terminate their employment after legal notice shall be respected.
- 2.7. The right of workers to leave the workplace and factory after their shift shall be respected.
- 2.8. The Principals expectations towards its business partners which are related to the avoidance and remediation of forced labour are documented in the Principals' Forced Labour Policy.

## **3. CHILD LABOUR AND YOUNG WORKERS**

- 3.1. There shall be no recruitment of child labour.
- 3.2. Compliance with the national minimum age law for the admission to employment, and specifically, no hiring of children under the age for completing compulsory schooling and less than 15 years is expected.
- 3.3. Young workers under the age of 18 shall not be employed at night or in conditions which could jeopardize their health, safety or moral integrity, and/or which could harm their physical, mental, spiritual, moral or social development.

- 3.4. The Principals expectations towards its business partners which are related to the avoidance and remediation of child labour and young workers are documented in the Principals' Forced Labour Policy.

#### **4. HEALTH AND SAFETY**

- 4.1. The business partner shall ensure that any instruction, process and information provided are communicated, understood and applied properly by every single employee, whatever the native language is.
- 4.2. Safe and clean conditions shall be provided in all workplaces and a clear set of procedures regulating occupational health and safety shall be drafted and followed.
- 4.3. Adequate measures must be taken to prevent accidents, injury and any damage to health arising out of, associated with, or occurring in the course of work, by minimizing the causes of hazards inherent in the working environment.
- 4.4. Appropriate and effective personal protective equipment shall be provided for free where needed and the use shall be enforced by management.
- 4.5. Access to adequate medical assistance and facilities shall be provided.
- 4.6. All workers must have access to clean toilet facilities and to drinkable water and, if applicable, sanitary facilities for food preparation and storage.
- 4.7. Residential facilities for workers, where provided, must be clean and safe.
- 4.8. Responsibility for health and safety shall be assigned to a member of the senior management.
- 4.9. Regular (at least every 6 months) health and safety training shall be provided to all employees and all newly hired employees shall take part in an awareness raising training course related to health and safety. All trainings shall be documented.
- 4.10. The business partner shall provide adequate safeguards against fire, and shall ensure the strength, stability and safety of buildings and equipment, including residential facilities where provided.
- 4.11. Regular (at least every 6 months) training of workers and management in waste management, handling and disposal of chemicals and other potentially dangerous materials shall be provided.

#### **5. DISCRIMINATION**

- 5.1. The business partner shall not engage in, support or tolerate discrimination in employment including recruitment, hiring, training, working conditions, job assignments, pay, benefits, promotions, discipline, termination or retirement on the basis of gender, age, religion, marital status, race, caste, social background, diseases, disability, pregnancy, ethnic and national origin, nationality, membership in worker organizations including unions, political affiliation, sexual orientation or any other personal characteristics.

- 5.2. Migrant workers : an increasing number of workers are travelling to access work and the Principal expects its business partners to safeguard their rights by applying the *Dhaka Principles of Migration with Dignity*, a set of human rights based principles to enhance respect for the rights of migrant workers from the moment of recruitment, during overseas employment, and through to further employment or safe return to their home countries.

**6. DISCIPLINARY PRACTICES, HARASSMENT OR ILL TREATMENT**

- 6.1. Workers shall be treated with respect and dignity. The business partner shall not engage in or tolerate bullying, harassment or abuse of any kind.
- 6.2. The business partner shall put disciplinary procedures in writing and shall explain them in clear and understandable terms to the workers. All disciplinary actions shall be recorded.
- 6.3. Disciplinary measures must be proportionate and shall not include physical or mental punishment.

**7. GRIEVANCE MECHANISM**

- 7.1. The business partner is expected to have a defined grievance policy for its workers and for community members impacted by business operations which shall include:
- a) a defined process for receiving, assessing, investigating and resolving grievances;
  - b) a mechanism that is objectively legitimate, accessible, predictable, equitable, transparent, rights-compatible and supports anonymous complaints;
  - c) a mechanism made available by the company that provides information for continuous learning; and,
  - d) a commitment to engagement and dialogue with the affected persons / groups.
- 7.2. The business partner shall also work with its own suppliers and co-operate in the provision of remedy for workers negatively impacted by operations within the supply chain.
- 7.3. The business partner has the right and the duty to report to the Principal any situation or behavior that would violate the principle of this Supply Chain Code of Conduct, applicable laws and/or standards. Such a report made in good faith will remain confidential and cannot be subject to sanctions.

**8. WORKING HOURS**

- 8.1. Working hours must comply with national laws, collective agreements, and the provisions below, whichever affords the greater protection for workers.
- 8.2. Working hours, excluding overtime, shall be defined by contract, voluntary and shall not exceed 48 hours per week (International standards recommend the progressive reduction of normal hours of work, when appropriate, to 40 hours per week, without any reduction in workers' wages as hours are reduced).



- 8.3. All overtime shall be voluntary. Overtime shall be used responsibly, considering all the following: the extent, frequency and hours worked by individual workers and the workforce as a whole. It shall not be used to replace regular employment. Overtime shall always be compensated at a premium rate, which is recommended to be not less than 125% of the regular rate of pay.
- 8.4. The total hours worked in any 7-day period shall not exceed 60 hours, except where covered by the following clause.
- 8.5. Working hours may exceed 60 hours in any 7-day period only in exceptional circumstances where all of the following provisions are met:
- this is allowed by national law;
  - this is allowed by a collective agreement freely negotiated with a workers' organization representing a significant portion of the workforce;
  - appropriate safeguards are taken to protect the workers' health and safety; and
  - the employer can demonstrate that exceptional circumstances apply such as unexpected production peaks, accidents or emergencies.
- 8.6. Workers shall be provided with at least one day off in every 7-day period or, where allowed by national law, 2 days off in every 14-day period.

## **9. REGULAR EMPLOYMENT**

Work must be performed based on a recognized employment relationship established through national law and practice. Obligations to employees under labour or social security laws and regulations arising from the regular employment relationship shall not be avoided through the use of labour-only contracting, subcontracting, or homeworking arrangements, or through apprenticeship schemes where there is no real intent to impart skills or provide regular employment, nor shall any such obligations be avoided through the excessive use of fixed-term contracts of employment.

## **10. WAGES AND BENEFITS**

- 10.1. All workers shall be provided with written and understandable information about their employment conditions in respect to wages before they enter employment, and about the particulars of their wages for the pay period concerned each time that they are paid.
- 10.2. Workers must be compensated by the on-time payment of wages, overtime pay (please refer to the section on working hours), legally required benefits and paid leave, meeting or exceeding legal minimum and/or collective agreements, whichever is higher.
- 10.3. Acknowledging the fundamental nature of remuneration for workers and those who are dependent on them, the Principal expects that the legal minimum wage should not be considered as an end in itself, but as a mere threshold to be exceeded, the goal sought being that this remuneration should be able to cover all basic needs whilst guaranteeing a discretionary income ("living wage").

- 10.4. Deductions from wages as a disciplinary measure shall not be permitted and no deductions from wages not provided for by national law may be permitted without the prior expressed authorization of the worker concerned. All disciplinary measures shall be recorded.

## **11. ANTI-CORRUPTION**

The Principal has zero tolerance for corruption. Corruption is the act of any person to take any action, direct or indirect, monetary or otherwise, aimed at influencing in any way an individual or an organization in the exercise of its functions in order to obtain an unfair advantage. It is possible to distinguish two types of corruption.

- a) Active bribery, which is the act of any person obtaining or attempting to obtain, by means of gifts, promises or advantages of any kind, the performance of, the delay in, or the refraining from the performance of any act related to his/her function or any act facilitated by it.
- b) Passive corruption which involves any person soliciting or accepting donations, promises or benefits of any kind.
- The Principal rejects all forms of corruption and expects its business partners to undertake all necessary measures to condemn and fight against extortion and bribery.
- Any payment made by or on behalf of the business partner, must reflect a legitimate service and price as described in the contracts and agreements.
- The Principal prohibits the payment of money to political or cultural parties, trade unions and organizations in order to promote a particular interest or to obtain or maintain a benefit.
- Any situation that may give rise to conflicts of interest shall be avoided. These situations arise especially when the private interests of a worker or a representative of the business partner (or a relative of that employee or representative), interfere with the interests of the company.

## **12. SUBCONTRACTING**

- 12.1. All business partners, manufacturing units and homeworkers need to be approved by the Principal before starting production of the Principals goods.
- 12.2. Business partners, directly or indirectly by the Principal approved factories and homeworkers, may not subcontract, even partially, the performance of tasks or services assigned to them or be replaced by a third party for the same purpose, without express prior authorization granted by the Principal.

## **13. SPECIFIC OBLIGATIONS**

The Principal has made the following commitments and asks its business partners to respect them:

- 13.1. Respect for animals: please refer to the Animal Welfare Policy of each brand.

- 13.2. The use of sandblasting techniques is banned for all products in order to ensure the health of the workers who manufacture products for the Principal, This ban not only includes the blasting with sand, but also similar material such as aluminium oxide, aluminium silicate, silicon carbide and copper slag.
- 13.3. North Korea: the Principal has decided not to source in this area and not to build up any relationships with North Korean suppliers. The business partner shall not supply any materials from this country for the Principal productions.
- 13.4. Uzbek, Syrian & Turkmen Cotton: as the Principal strives for coherent and stringent social & environmental compliance policy, the Principal expects that the business partner do not source cotton from these countries and that they put in practice a due diligence process related to the origin of the cotton.

#### **14. MANAGEMENT SYSTEM**

The business partner will put in place an efficient internal management system to ensure that:

- All employment relationships are documented (in accordance with national laws, customs, practices and international employment standards) from the time of recruitment until the end of the employment; particularly but not exclusively in the case of employees with a special status: young employees, immigrants, national migrants, seasonal workers, home workers, piece workers, interns or apprentices, contract workers, temporary workers, in-house subcontractors and other.
- All the company's sales and management activity shall be carried out transparently and correctly recorded in the company's registers.
- The business partner shall investigate all acts which breach the principles of this code, by determining the underlying causes of problems identified and by implementing measures to deal with such acts effectively in accordance with national laws, customs and practices as well as international employment standards.
- There is an appointed person in charge of implementing this code and, more generally, information regarding the associated legal aspects concerning employment law, security and the environment is made available and training is provided accordingly; this person shall report to a senior management representative.
- Its impact on the surrounding community, natural resources and the environment in general shall be analyzed so that the necessary procedures can be put in place to prevent and minimize the negative effects connected with the partner's operations.
- The business partner shall have a process in place which guarantees the cascading of this Supply Chain Code of Conduct throughout its own supply chain.

**15. CRISIS SITUATIONS ARISING FROM CONFLICTS AND DISASTERS**

In the case of a crisis situation arising from conflicts or disasters which could affect the business partners activity, all clauses stated previously in this code remain valid and the respect for human rights during the crisis or disaster remains a precondition for any further business relationship with the Principal.

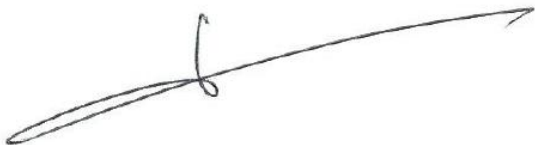
Roubaix, 12<sup>th</sup> of November 2020

This supply chain code of conduct is supported by

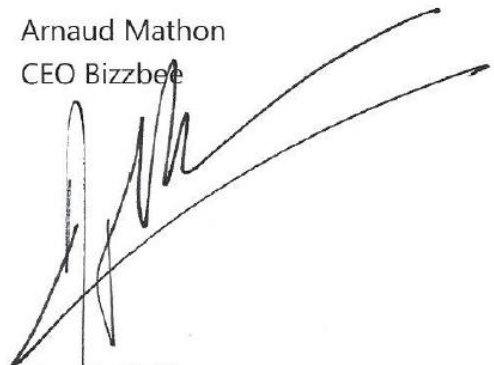
Jean-Christophe Garbino  
CEO Fashion Cube



Alain Boittiaux  
CEO Grain de Malice



Arnaud Mathon  
CEO Bizzbee



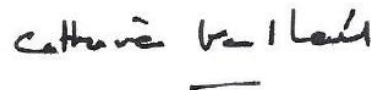
Franck Poillon  
CEO Jules CEO



Yann Hirsinger  
CEO Pimkie



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# FORCED LABOUR POLICY

(2020/ V1)

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**In 2016, approximately 40.3 million people were living in modern slavery of which 71% were female, 29% male.<sup>1</sup>**

## **ABOUT THIS POLICY**

This policy shall give a clear guidance to all our supply chain members on the position we take towards forced labour. At the same time, it shall enable all involved parties in the production of our goods to avoid and remedy forced labour.

Whilst we are aware of the challenges related to the detection and ending of forced labour in our supply chain, we ask our direct business partners to support this cause by cascading this policy down their own supply chain to any business involved in the production of our goods.

We are committed to working with our suppliers to improve working conditions in our supply chain and to strive for the detection and ending of forced labour together with our partners. But we have a zero tolerance concerning the inaction and cover up of human rights violations. Therefore we reserve the right to end our business relationship with any company who is connected to any form of forced labour and is not acting upon it or even covering it up.

## **1. OUR POSITION**

Our position is based on the ILO Forced Labour Convention No. 29 (1930), the ILO Abolition of Forced Labour Convention No. 105 (1957), The International Bill of Human Rights and The Dhaka Principles of Migration with Dignity.

## **2. DEFINITIONS**

"Forced or compulsory labour is all work or service which is exacted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily."<sup>3</sup>

The following Indicators of forced labour represent the most common signs for the possible existence of forced labour:<sup>2</sup>

- Abuse of vulnerability
- Deception
- Restriction of movement
- Isolation

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<sup>1</sup> The Global Slavery Index 2018

<sup>2</sup> ILO Indicators of Forced Labour ([https://www.ilo.org/global/topics/forced-labour/publications/WCMS\\_203832/lang--en/index.htm](https://www.ilo.org/global/topics/forced-labour/publications/WCMS_203832/lang--en/index.htm))

- Physical and sexual violence
- Intimidation and threats
- Retention of identity documents
- Withholding of wages
- Debt bondage
- Abusive work and living conditions
- Excessive overtime

The presence of only one indicator can already point to the existence of forced labour. Multiple indicators can also be observed at the same time.

### 3. LABOUR RIGHTS AND FORCED LABOUR

Forced Labour must not always be intentional, but can also be derived and triggered by not respecting and not complying with labour rights.

- When for example the one time non-payment of wages becomes *a regular habit*: "The fact of irregular or delayed payment of wages does not automatically imply a forced labour situation. But when wages are systematically and deliberately withheld as a means to compel the worker to remain, and deny him or her of the opportunity to change employer, this points to forced labour."<sup>3</sup> Always paying wages regularly and on time as well as the agreed amount, will minimize the risk of this specific labour rights violation, which can lead to forced labour.
- "Victims of forced labour are often recruited with promises of decent, well-paid jobs. But once they begin working, the promised conditions of work do not materialize, and workers find themselves trapped in abusive conditions without the ability to escape. In these cases, workers have not given free and informed consent." A legal and written contract which has been understood by all signing parties and stating clearly the conditions of work, can help to avoid deceptions on both sides and avoid forced labour.

### 4. OUR EXPECTATIONS TOWARDS OUR DIRECT BUSINESS PARTNERS AND OUR DEEPER SUPPLY CHAIN

To be able to identify behavior which is not in compliance with this policy, we recommend to our direct business partners to map their supply chain and to identify possible risk areas for the existence of forced labour.

#### 5.1. AVOID FORCED LABOUR

- 4.1.1. All work must be conducted on a voluntary basis, and not under threat of any penalty or sanctions.

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<sup>3</sup> ILO Indicators of Forced Labour, p. 19

- 4.1.2. The use of forced or compulsory or unpaid labour in all its forms, including prison labour and unpaid overtime work, is prohibited.
- 4.1.3. Workers shall not be required to make deposits / financial guarantees and the identity documents of any worker (such as passports, identity cards, etc.) shall not be confiscated. No delayed payment of wages shall occur.
- 4.1.4. The right of workers to terminate their employment after legal notice shall be respected.
- 4.1.5. The right of workers to leave the workplace and factory after their shift shall be respected.
- 4.1.6. A hiring policy shall be available, including:
- A clear statement against forced labour.
  - A process, designed to avoid any form of compulsory or forced labour.
  - A commitment to remedy the consequences caused by failing this policy (see below).

## 5.2. REMEDY FOR WORKERS AFFECTED BY FORCED LABOUR

- 5.2.1. If any form of forced or compulsory labour is detected in our supply chain, we and the appropriate authorities shall be informed immediately.
- 5.2.2. The company practicing forced or compulsory labour shall remedy the damages caused, may they be related to financial, health or other matters.
- 5.2.3. We will follow up the remedy process in accordance with involved authorities and conduct a root cause analysis with the company, designed to avoid further cases of forced labour.

## 5. BEST PRACTICE EXAMPLES

More information on how to establish policies and processes in your company, which are supporting this policy are listed below. Both sources offer also information on other key resources.

### 5.1. ETI BASE CODE GUIDANCE - MODERN SLAVERY

(<https://www.ethicaltrade.org/resources/base-code-guidance-modern-slavery>)

### 5.2. BUSINESS: IT'S TIME TO ACT. Decent Work, Modern Slavery & Child Labour

(<https://www.unglobalcompact.org/library/5616>)





# CHILD LABOUR & YOUNG WORKERS POLICY

(2020/ V1)

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## **Worldwide approximately 152 million children are victims of child labour and 73 million are performing hazardous work.<sup>4</sup>**

### **ABOUT THIS POLICY**

This policy shall give a clear guidance to all our supply chain members on the position we take towards child labour. At the same time, it shall enable all involved parties in the production of our goods to avoid and remedy child labour.

Whilst we are aware of the challenges related to the detection and ending of child labour in our supply chain, we ask our direct business partners to support this cause by cascading this policy down their own supply chain to any business involved in the production of our goods.

We are committed to working with our suppliers to improve working conditions in our supply chain and to strive for the detection and ending of child labour together with our partners. But we have a zero tolerance concerning the inaction and cover up of human rights violations. Therefore we reserve the right to end our business relationship with any company who is connected to any form of child labour and is not acting upon it or even covering it up.

### **1. OUR POSITION**

Our position is based on:

- *UN Convention on the Rights of the Child (1989)*
- *ILO Convention 182 on the worst forms of child labour*
- *ILO Convention 138 on the minimum age for admission to employment and work*

### **2. DEFINITIONS**

2.1. The UN Convention on the Rights of the Child (1989) defines a child as everyone under 18 years of age.

2.2. The minimum age for young workers which are employed full time is 15 years of age (see ILO Convention 138).

2.3. Based on the ILO definition, child labour can be defined as work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development. It refers to work that:<sup>5</sup>

2.3.1. is mentally, physically, socially or morally dangerous and harmful to children; and

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<sup>4</sup> Global Estimates of Child Labour: Results and trends 2012-2017, ILO

<sup>5</sup> <https://www.ilo.org/ipec/facts/lang--en/index.htm>

2.3.2.interferes with their schooling by depriving them of the opportunity to attend school; obliging them to leave school prematurely; or requiring them to attempt to combine school attendance with excessively long and heavy work.

2.4. Child work on the other hand is unlikely to damage educational opportunities. This kind of work might include children helping out with their parents, assisting in a family business and earning pocket money outside school hours and during holidays.

It will depend on the child's age, the country, the type and hours of work performed, the conditions under which it is performed and the objectives pursued by individual countries, if we are talking about child labour or child work.

### **3. OUR EXPECTATIONS TOWARDS OUR DIRECT BUSINESS PARTNERS AND OUR DEEPER SUPPLY CHAIN**

To be able to identify behavior which is not in compliance with this policy, recommend to our direct business partners to map their supply chain and to identify possible risk areas for the existence of forced labour.

#### **3.1. AVOID CHILD LABOUR AND PROTECT YOUNG WORKERS**

3.1.1.We expect from all businesses involved in the production of our goods not to hire children under the age of 15 and under the age of completing compulsory schooling as well as to comply with national minimum age law for admission to employment.

3.1.2.Young workers between 15 and 18 years of age shall not be employed at night, or in conditions which could jeopardize their health, their safety or their moral integrity, and/or which could harm their physical, mental, spiritual, moral or social development.

3.1.3.A hiring policy shall be available, including:

3.1.4.A clear statement against child labour and young worker employment under hazardous conditions.

3.1.5.A written process, designed to avoid any form of child labour and the endangerment of young workers.

3.1.6.A written commitment to remedy the consequences of child labour and the employment of young workers under hazardous circumstances (see below).

#### **3.2. REMEDY OF CHILD LABOUR AND YOUNG WORKERS EMPLOYED UNDER HAZARDOUS CONDITIONS**

3.2.1.If child labour or the employment of young workers under hazardous conditions are suspected or detected, first remove the child/ young worker from the workplace and contact the primary care taker. It is essential to ensure that affected children/ young workers are safe, protected from victimization or

further vulnerability at all time. The child's wellbeing shall always be the number one priority.

3.2.2. Inform us immediately and include in your communication as much details as possible (gender and age of the child/ young worker, work performed, actions taken so far to remedy the situation, etc.)

3.2.3. To avoid further cases of child labour, we will investigate the incident and root causes together with all parties involved.

**3.2.3.1.** We will consult with the child and the family to understand their wishes and needs.

**3.2.3.2.** We will agree on a process and next steps for the child involved with the supplier.

**3.2.3.3.** The investigation and remediation process shall be supported by appropriate child labour and protection expertise.

**3.2.3.4.** We will establish a monitoring mechanism and conduct regular reviews of the remediation progress.

3.2.4. The company hiring a child or employing a young worker under hazardous conditions shall take responsibility for the remedy of the damages caused, may they be related to financial or health matters. Remedy shall include but is not limited to :

3.2.4.1. Enabling the child to attend school, including the payment of fees related to schooling.

3.2.4.2. The family shall receive compensation for their financial losses due to the ending of the employment of the child , covering at least minimum wage till the child can be employed under conditions that do no longer relate to the definition of child labour. Compensation can also be given by offering the child's job to a qualified adult member of the family.

3.2.4.3. Offer the child an equivalent job after schooling and reaching the minimum working age. Wages shall cover at least the minimum wage.

#### **4. BEST PRACTICE**

More information on how to establish policies and processes in your company, which are supporting this policy are listed below. Both sources offer also information on other key resources.

##### **4.1. ETI BASE CODE GUIDANCE - CHILD LABOUR**

(<https://www.ethicaltrade.org/resources/base-code-guidance-child-labour>)

##### **4.2. BUSINESS: IT'S TIME TO ACT. Decent Work, Modern Slavery & Child Labour**

(<https://www.unglobalcompact.org/library/5616>)



# ENVIRONMENTAL AND CHEMICAL GUIDELINE

(Version2/ 2020)

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# 1.INTRODUCTION

## 1.1. PREAMBLE

The BIZZBEE, BRICE, GRAIN DE MALICE, JULES, ORSAY, PIMKIE and ROUGE GORGE retail companies launched a joint initiative, the Fashion Cube (F3), and wrote this Guideline together to express their common understanding of the importance of protecting the environment in combination with an adequate health and safety management.

With this Guideline we want to address the most relevant environmental challenges prevalent in our supply chain and aim to continuously reduce the overall footprint of our products. We expect that strengthening the resilience of our supply chain and preparing for the future is a shared interest with our partners, when considering the following exemplary facts:

- Water crisis and the failure of climate change mitigation/ adaptation have been ranked under the top 5 global risks in terms of negative impact for countries and businesses according to the 2018 Global Risk Report of the World Economic Forum<sup>6</sup>.
- Emissions to air support climate change and related consequences such as changing weather patterns, flooding, droughts and the disruption of supply chains. The world's nine warmest years have all occurred since 2005 and the five warmest since 2010, according to the WMO Statement on the State of the Global Climate 2017<sup>7</sup>.
- Hazardous chemicals and the inadequate handling of chemicals are a serious threat to the health of people and the environment<sup>8</sup>.

We ask our business partners to join us in our attempt to reduce the environmental footprint of our products by revising their own business practices and circulating this guideline within their own supply chain.

## 1.2. HOW THIS GUIDELINE WORKS

This guideline focuses on environmental, chemicals and health and safety management in factories across all tiers. It is available for both internal and external users. This guideline

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<sup>6</sup> <https://www.weforum.org/reports/the-global-risks-report-2018>

<sup>7</sup> [https://library.wmo.int/index.php?lvl=notice\\_display&id=20220#.W31rlegzbIV](https://library.wmo.int/index.php?lvl=notice_display&id=20220#.W31rlegzbIV)

<sup>8</sup> <https://www.ituc-csi.org/un-human-rights-council-adopts-key>

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provides guidance for suppliers on how to approach, manage and improve the area of environmental, chemical and health and safety management.

We expect all suppliers to ensure that the basic requirements outlined in this guideline are always met. We encourage our suppliers to then continue with the advanced requirements and to develop good practices; some of them are included in this document.

Every specific environmental section has a standardized structure:

- ***Why is this important?***
- ***Basic requirements***
- ***Advanced requirements.***
- ***Best practice example***
- ***Additional information / References***

Exception: Due to the extent of the chemicals and wastewater chapter, chapter 6 follows the same logic, but has a slightly different structure.

This Guideline has been developed with the purpose of building bridges between several different guidance documents from different organizations. We will not repeat all details described in these documents, but rather point them out. However, this Guideline can also possibly be used as a stand-alone document.

The standards and guidelines that are considered to be the core resources for environmental, chemicals and H&S management are the following:

#### Resources for general environmental guidance

- ICS (Initiative for compliance and sustainability<sup>9</sup>):
  - Environmental Code of Conduct (version from 2018.06.29).
  - Environmental Guideline for Factories (version from 2018.06.29).
  - Environmental best practice factsheets (version from 2018.06.29).
- Integrated Pollution Prevention and Control (IPPC) Reference Document on Best Available Techniques for the Textiles Industry July 2003<sup>10</sup>.
- Checklists on best available techniques for the textile industry<sup>11</sup>.

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<sup>9</sup> <https://ics-asso.org/>

<sup>10</sup> [http://eippcb.jrc.ec.europa.eu/reference/BREF/txt\\_bref\\_0703.pdf](http://eippcb.jrc.ec.europa.eu/reference/BREF/txt_bref_0703.pdf)



### Resources for chemical guidance

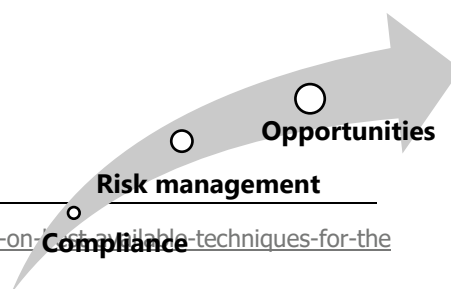
- REMC. Resource efficient management of chemicals in textile- and leather-sector companies<sup>12</sup>.
- Zero Discharge of Hazardous Chemicals, ZDHC<sup>13</sup>.
  - Chemical Management System Guidance Manual<sup>14</sup>.
  - MRSL (Manufacturing Restricted Substances List)<sup>15</sup>.
  - Chemical inventory template (see below).
- Textilbündnis, German partnership for Sustainable Textiles<sup>16</sup>.
  - Guideline: Preventing the use of hazardous chemicals in textile supply chains<sup>17</sup>.
  - Chemical inventory aligned with ZDHC<sup>18</sup>.

### Resources for wastewater guidance

- Zero Discharge of Hazardous Chemicals, ZDHC<sup>19</sup>.
  - Wastewater Guidelines<sup>20</sup>.
  - Wastewater Treatment Technologies<sup>21</sup>.

## **1.3. ENVIRONMENTAL RISKS AND OPPORTUNITIES IN THE SUPPLY CHAIN**

We encourage our suppliers to assess their manufacturing processes to understand environmental impacts, risks and opportunities, and to develop a strategy enabling:



<sup>11</sup> <https://www.umweltbundesamt.de/en/document/checklists-on-best-available-techniques-for-the>

<sup>12</sup> [www.giz.de](http://www.giz.de)

<sup>13</sup> [www.zdhc.org](http://www.zdhc.org)

<sup>14</sup> [https://www.roadmaptozero.com/fileadmin/layout/media/downloads/en/CMS\\_EN.pdf](https://www.roadmaptozero.com/fileadmin/layout/media/downloads/en/CMS_EN.pdf)

<sup>15</sup> [https://www.roadmaptozero.com/fileadmin/pdf/Files\\_2016/MRSL\\_V1\\_1Final.pdf](https://www.roadmaptozero.com/fileadmin/pdf/Files_2016/MRSL_V1_1Final.pdf)

<sup>16</sup> <https://www.textilbuendnis.com/en/>

<sup>17</sup> [https://www.textilbuendnis.com/wp-content/uploads/2018/06/NHTW-Brosch%C3%BCre\\_Leitfaden\\_Chemikalienmanagement\\_GB\\_web\\_cmyk-1.pdf](https://www.textilbuendnis.com/wp-content/uploads/2018/06/NHTW-Brosch%C3%BCre_Leitfaden_Chemikalienmanagement_GB_web_cmyk-1.pdf)

<sup>18</sup> [https://www.textilbuendnis.com/wp-content/uploads/2018/03/Partnership-for-sustainable-textiles-Chemical-Inventory-Collection-Template\\_bsv.xlsx](https://www.textilbuendnis.com/wp-content/uploads/2018/03/Partnership-for-sustainable-textiles-Chemical-Inventory-Collection-Template_bsv.xlsx)

<sup>19</sup> [www.zdhc.org](http://www.zdhc.org)

<sup>20</sup> [https://www.roadmaptozero.com/fileadmin/pdf/Files\\_2016/ZDHC\\_Wastewater\\_Guidelines\\_Print.pdf](https://www.roadmaptozero.com/fileadmin/pdf/Files_2016/ZDHC_Wastewater_Guidelines_Print.pdf)

<sup>21</sup> [https://www.roadmaptozero.com/fileadmin/pdf/Files\\_2018/Wastewater\\_Treatment\\_Technologies\\_for\\_the\\_Textile\\_Industry-FINAL.pdf](https://www.roadmaptozero.com/fileadmin/pdf/Files_2018/Wastewater_Treatment_Technologies_for_the_Textile_Industry-FINAL.pdf)

1. Compliance – legal and technical.
2. Risk management.
3. Opportunities development.

The factory should prioritize the most important and relevant aspects in terms of impact and treat them first. All other aspects should at least be monitored.

Once a priority has been set, the **following step-by-step approach** can be followed. This approach has also been used in the subsequent sections for each environmental topic.



Figure: “Step-by-step” approach

The steps “organize and secure resources” as well as “follow up” should include the following activities (we do not repeat these activities in each chapter, but only mention “organize and secure resources” where relevant).

#### Organize and secure resources

- Assign a person responsible for environmental, chemicals and H&S management.
- **Assign a team** to carry out reduction strategy and implement required procedures.
- Carry out required **training and communication** throughout the organization.
- Create a **procedure to measure progress** and re-evaluate strategy.

**Follow up** that goals and targets are reached **and adjust** as needed.

Furthermore, under **advanced requirements**, the following steps should be taken for all environmental aspects:

- Conduct a risk assessment.
- Establish a **corrective-action procedure** for non-compliances and ensure it is kept updated.

The matrix below shows typical **risks and opportunities** in the apparel sector. Risks are related to environmental pollution or worker safety. Opportunities relate to improvement

feasibility, possible cost savings and/ or improved reputation. There is one column (with two sub-columns for related risks and opportunities) for tier 1 (T1 = apparel manufacturing) and one (with two sub-columns for risk and opportunity) for tier 2 (T2 = fabric mill, dye house).

**Example T2:**

An identified risk (R) → wastewater discharge.

A significant opportunity (O) → energy savings.

## ENVIRONMENTAL RISKS AND OPPORTUNITIES MATRIX PER TIER

Environmental Risks & opportunities	T1 (apparel manufacturing)		T2 (fabric mill, dye house)	
	R	O	R	O
<b>Resources</b>				
Energy				
Water consumption				
Materials				
Product packaging				
Transport packaging				
<b>Emissions</b>				
Waste Management				
Wastewater Discharge				
GHG emissions				
Air emissions				
Noise				
Soil and groundwater contamination				
Hazardous Materials, Chemicals				
Transport				
<b>Health &amp; Safety aspects</b>				
Fire safety				
Electrical safety				
Machine safety				
Housekeeping				
Emissions of noise and dust				
Emissions of VOC (Volatile Organic Carbons)				
Waste management				
Canteen hygiene				
Dormitory				
Emergency preparation				
Emergency drills				

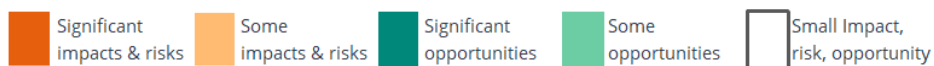


Figure: Environmental risks and opportunities matrix per tier

## 2.MANAGEMENT SYSTEMS

An Environmental, Health & Safety Management System (EH&S) is a set of processes and practices that enable an organization to address its regulatory demands, reduce its environmental impact and costs, as well as increase its operating efficiency. It is an evolving system, based on consistent review and evaluation. The most often used environmental management system standard is ISO 14001<sup>22</sup> and for health and safety ISO 45001<sup>23</sup> (see also ICS Environmental Best Practices Factsheets, chapter 1<sup>24</sup>) A key approach of all management systems is the continuous improvement process: Plan-Do-Check-Act.

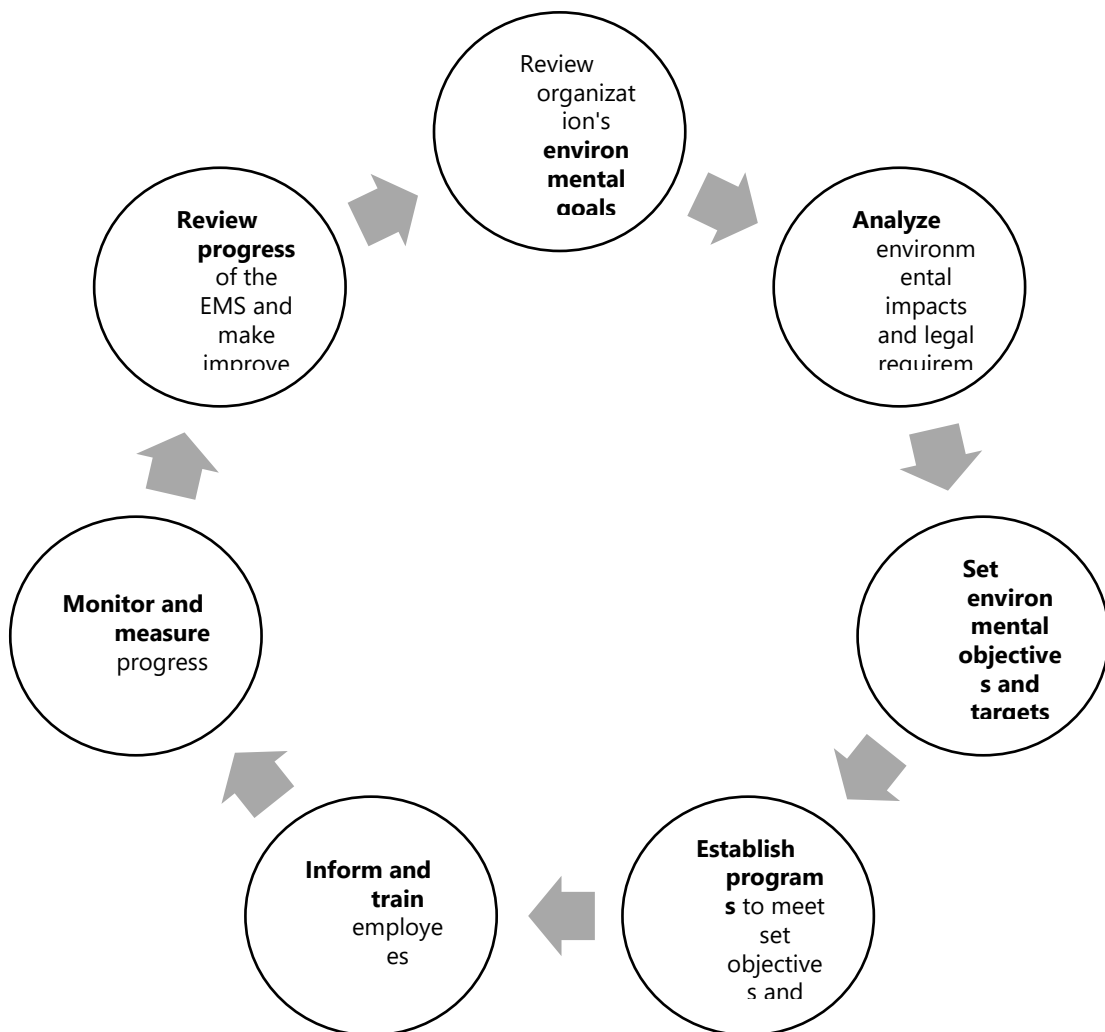


Figure: Continuous improvement process

<sup>22</sup> <https://www.iso.org/standard/60857.html>

<sup>23</sup> <https://www.iso.org/standard/63787.html>

<sup>24</sup> <https://ics-asso.org/>

### 3.RESOURCE CONSUMPTION AND EFFICIENCY

#### 3.1 ENERGY

##### *Why is this important?*

---

- Energy consumption leads to climate change.
- Ensure legal compliance.
- Ensure effective operations.
- Reduce costs and increase efficiency.

##### *Basic requirements*

---

###### Ensure Legal compliance

- Ensure to have updated **permits and authorizations**. Have a clear overview of limits and requirements.
- Ensure regular **monitoring**.
- Ensure all measures **comply with the laws and regulations** and if not, remediate immediately.

###### Measure and assess

- Identify and document **energy sources** and consumption.
- Identify the **highest-energy users/factors**.
- Conduct a simple **energy audit** by walking through the factory, noting inefficiencies.
- Assess energy **impacts and risks**.

###### Set goals and targets

- **Identify opportunities to reduce** energy consumption.
- **Set reduction goals, targets** and strategies to achieve targets (incl. deadlines).
- Switch to **clean energy sources** (e.g. solar or wind).
- Define a **written strategy and plan** and organize approval by top management.

###### Organize and secure resources & follow up (see page 6)

##### *Advanced requirements*

---

###### Management system

- Implement an energy management system as an integral part of the EH&S management system.

## Technical measures

### *Performance*

Reduce losses in energy distribution by conducting detailed energy audits and implementing improvement actions.

### *Installations*

- Improve energy performance of the building.
- If possible and applicable, use paint that reduces the amount of artificial light needed.
- Apply thermal insulation to pipes, valves, containers and machinery.
- Optimize process sequences in production.
- Use machines with low liquor ratio (short bath).
- For batch processes: install automatic controls that enable the precise setting of filling volumes and bath temperatures.
- For continuous processes: install low control devices and automatic stop valves that combine the water flow with the main propulsion of the machine.
- Closed design of machines to reduce vapor loss.
- Separate the hot and cold waste water streams in front of the heat exchanger and recover the heat from hot stream.
- Install exhaust-air heat-recovery systems.
- Optimize the boiler house: condensate recovery, pre-heating of air intake, heat recovery from combustion waste gases.
- Install frequency-controlled electric motors.
- Use electrical motors with efficiency class I.
- If applicable install a peak control system.
- If applicable install a load correction system.

## ***Best practice***

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### Business cases for saving energy

#### a) Hung Long Garment & Services, China

The company's power consumption was 270,000 kWh/month; lighting systems consumed the most, 5400 bulbs. Total energy costs were reduced by 21%, from \$180,000 to \$142,000 per year by adopting the following measures ([GIZ, 2012](#)):

- Installation of 500 power-saving devices for sewing machines, saved 12.5% of energy costs.
- Installation of condensate-recovery pump in boiler, saved 25% of fuel costs.
- Installation of integrated elevator inverter, reduced energy costs by 15% for the elevator system.
- Purchasing and using 2900 T8 fluorescent lamps, saved 18% of energy costs for lighting.
- Replacement of 900 sets of T10 by T5, saved 25% of energy costs for lighting.

b) Comfit Composite Knit Ltd., Bangladesh<sup>25</sup>

With different energy-efficiency interventions, relevant savings could be achieved with payback periods ranging from 1.7 to 6 years.

c) Fakir Apparels Ltd. – Waste Heat Recovery (WHR)<sup>26</sup>

The WHR system significantly reduced FAL's energy and gas demands by 27,460 kWh/year and 2,595,840 m<sup>3</sup>/year, respectively. The factory now enjoys USD 208,620 in annual savings from waste heat recovery alone.

Above examples illustrate how energy savings can lead to cost savings. Actual savings triggered by above measures will depend on the energy prices per region/ country, the location and setup of the factory as well as other parameters.

### ***Additional information / References***

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- See also ICS environmental best practices factsheets, chapter 2. <https://ics-asso.org/>.
- Greer, L., Keane, S., Lin, C., Meinert, J. (2013). NRDC's 10 Best Practices for Textile Mills to save Money and Reduce Pollution. A practical guide for responsible sourcing. Version 2.0. <https://www.nrdc.org/sites/default/files/responsible-sourcing-guide.pdf>.
- Integrated Pollution Prevention and Control (IPPC), (2003). Reference Document on Best Available Techniques for the Textiles Industry. [http://eippcb.jrc.ec.europa.eu/reference/BREF/txt\\_bref\\_0703.pdf](http://eippcb.jrc.ec.europa.eu/reference/BREF/txt_bref_0703.pdf).
- ISO 50001 energy management system standard<sup>27</sup>.

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<sup>25</sup> <http://www.textilepact.net/publications.html> (Case Study on Financing Facilitation in Energy Efficiency)

<sup>26</sup> <http://www.textilepact.net/publications.html> (Case Study on Waste Heat Recovery)

<sup>27</sup> <https://www.iso.org/standard/69426.html>



## 3.2 WATER

### *Why is this important?*

---

- Ensure legal compliance.
- Prevent resource depletion.
- Reduce costs.

### *Basic requirements*

---

#### Ensure Legal compliance

- Ensure to have updated **permits and authorizations** for all water sources. Have a clear overview of requirements.
- Ensure regular **monitoring**.
- Ensure all measures **comply with the laws and regulations** and if not, remediate immediately.

#### Measure and assess

- **Classify the water streams** by purpose of use and identify and document respective consumption and sources: **process water, heating, cooling, drinking and sanitary**.
- Identify and document **water usage in the process**, their **sources** (e.g. municipal mains, surface water, groundwater, recycled water, etc.) and respective **volumes**.
- Identify the **highest water users/** factors.
- Be aware of the **water-stress level** in the region where the factory is located. Use, for example, the WRI Aqueduct Water Risk tool<sup>28</sup> or the WWF Water Risk Filter<sup>29</sup> related to water use and impact.
- **Drinking water should meet local water quality standards but**, if not available, the WHO (World Health Organization) (2011) "Guidelines for Drinking-water Quality, Fourth Edition"  
[http://www.who.int/water\\_sanitation\\_health/publications/2011/dwq\\_guidelines/en/](http://www.who.int/water_sanitation_health/publications/2011/dwq_guidelines/en/) for drinking water quality may be used for guidance.

#### Set goals and targets

- **Identify opportunities to reduce** water consumption.
- **Set reduction goals, targets** and strategies to achieve targets (incl. deadlines).
- Define a **written strategy and plan** and organize approval by top management.

#### Organize and secure resources & follow up (see page 6)

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<sup>28</sup> <http://www.wri.org/our-work/project/aqueduct>

<sup>29</sup> <http://waterriskfilter.panda.org/en>

## *Advanced requirements*

---

### Management system

- Implement a water management system as an integral part of the EH&S management system.

### Process water consumption

#### *Water use*

- **Test** to ensure that the **quality of each water stream** is suitable for the purpose for which it is being used (chemical and microbial properties).
- Ensure the process and piping system in place does not lead to any contamination.
- Have a procedure in place for **regular control and maintenance**.
- Ensure storm/ rainwater (if appropriate) harvesting and use.
- Ensure water collection, spill control and a leakage control system.
- Install pressure management of process water system.
- Shut off water in unused areas.
- **Washing machines:** monitor use of machine water, compare with specifications and replace nozzles when water and heat use reach levels warranting such work.
- **Flow control optimization:** consider options to reduce the rate of water supply to tanks and reduce tank levels to reduce spillage.
  - Use flow timers and limit switches to control water use.
  - Consider the option to reduce flow in water cooling sprays while maintaining cooling performance.
- Water sprays: review accuracy of spray pattern to prevent unnecessary water loss.
- Use of dry process technologies, e.g. dry quenching.
- Consider the use of high pressure, low volume cleaning systems rather than using large volumes of water sprayed from hose pipes.
- Apply 'clean-up' (with a mop) practices rather than using water from a hose, thereby saving water.
- Install self-closing taps, automatic shut-off valves, spray nozzles, pressure-reducing valves and water-conserving fixtures (e.g. low-flow shower heads, faucets, toilets, urinals and spring-loaded or sensor faucets).

#### *Reuse water*

- Strive for zero-water discharge design.
- Use treated and recycled wastewater wherever possible.

- Evaluate if localized recirculation systems in factory departments are more effective (compared to centralized recirculation systems).
- Implement water reuse such as counter-current rinsing, reuse wastewater from one process for another with lower quality requirements.

#### Drinking and sanitary water consumption

- Operate dishwashers and laundries with full loads and only when needed.
- Install water-saving equipment in lavatories, such as low-flow toilets.

#### Cooling system

- Use closed-circuit cooling systems with cooling towers rather than once-through cooling systems.
- Limit condenser or cooling tower blowdown to the minimum required to prevent unacceptable accumulation of dissolved solids.
- Use air cooling rather than evaporative cooling.
- Use treated wastewater for cooling towers.
- Reuse / recycle cooling tower blowdown.

#### Heating systems

- Repair steam and condensate leaks and all failed steam traps.
- Return condensate to boiler house and use heat exchangers (with condensate return).
- Use flash-steam recovery.
- Minimize boiler blowdown.
- Use reverse osmosis boiler-feed water treatment (be aware that energy consumption may increase, as reverse osmosis is carried out under high pressure).
- Minimize deaerator heating.

#### Additional comment

Most of these measures allow significant savings not only in water consumption, but also in energy consumption because energy is used to heat the water.

### ***Best practice for Tier 2***

---

Examples below illustrate average resource savings (as researched by NRDC<sup>22</sup>) as well as the return on investment (ROI). The savings potential and the ROI for a defined factory will depend on the location of the factory, resource costs, machines used, process management and other parameters.

Practice	% resource savings	Savings / ton fabric (€)	Cost / ton fabric (€)	Investment cost (€)	Payback period (months)
Eliminate water leaks and reduce hose pipe use	0.3 – 0.7	0.07 – 0.3	0.007 – 0.01	30	0.4 – 1.4
Reuse cooling water from dyeing machine	8.2 – 14.8	4 – 7	0.7 - 2	2,800 – 8,000	2.1 – 3.3
Reuse process water from rinsing	9.0 – 11.9	0.9 – 4	1- 2	3,800 – 10,000	1. - 25.9

Source: NRDC<sup>22</sup>

### ***Additional information / References***

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- Integrated Pollution Prevention and Control (IPPC), (2003). Reference Document on Best Available Techniques for the Textiles Industry.  
[http://eippcb.jrc.ec.europa.eu/reference/BREF/txt\\_bref\\_0703.pdf](http://eippcb.jrc.ec.europa.eu/reference/BREF/txt_bref_0703.pdf)
- WHO (World Health Organization) (2011). Guidelines for Drinking-water Quality. Fourth Edition.  
[http://www.who.int/water\\_sanitation\\_health/publications/2011/dwq\\_guidelines/en/](http://www.who.int/water_sanitation_health/publications/2011/dwq_guidelines/en/)

## **4.EMISSIONS**

### **4.1. WASTE**

#### ***Why is this important?***

---

- Ensure legal compliance.
- Reduce EHS (environmental, health and safety) risks. Keep employees healthy and safe by maintaining good management of all wastes.
- Reduce resource depletion.
- Reduce costs and generate income streams from recycling.

#### ***Basic requirements***

---

##### Ensure Legal compliance

- Ensure availability of updated **permits and authorizations** for all waste streams. Have a clear overview of requirements.

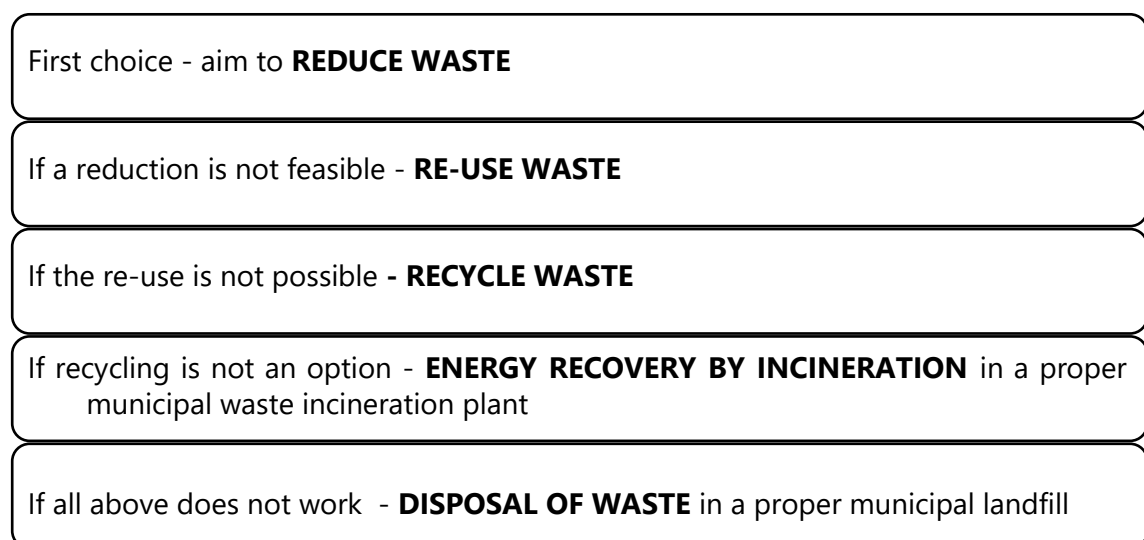
- Ensure regular **monitoring**.
- Ensure all measures **comply with laws and regulations** and if not, remediate immediately.
- Ensure all **hazardouswastevhandling companies** that process hazardous waste have the necessary permits and licenses.

#### Measure and assess

- **Classify all waste streams** and identify and document respective volumes and sources. Waste may be classified into many different waste categories, see further details below.
- Identify **hazardous waste** fractions and establish specific procedures to guarantee containment and control: specific areas must be created, waste should be contained in closed containers and labelled accordingly, containment solutions in case of leakage should also be considered. Keep records on volumes disposed of and licensed waste-disposal companies (e.g. invoices that specify volumes).
- Do not store waste close to any water source.
- Be aware of the potential for waste to cause **soil and groundwater contamination**.

#### Set goals and targets

- Apply the waste hierarchy. Please see illustration below. The preferred option is at the top and the least preferred option at the bottom.



*Figure: Waste hierarchy*

- Identify and document waste fractions that can be **reused or recycled** - identify opportunities to maximize the potential of waste reuse and recycling; including provision of sufficient waste containers that are suitable for factory operations.
- In the same way as industrial waste, **domestic waste** should also be sorted in order to increase possibilities for recycling (if this is common practice and there are proper municipal waste-treatment operations for the different waste categories in the region).
- **Do not practice open burning** of solid wastes, whether hazardous or non-hazardous.
- **Set reduction goals, targets** and strategies to achieve targets (incl. deadlines) -> identify ways to improve efficiency and reduce losses.
- Define a **written strategy and plan** and organize approval by top management.

Organize and secure resources & follow up (see page 6)

### *Advanced requirements*

---

- Implement a waste management system as an integral part of the EH&S management system.
- **Establish** good **inventory control** to reduce the amount of waste resulting from materials that are out-of-date, out-of- specification, contaminated or damaged.
- Implement **procurement measures** that recognize opportunities to return usable materials such as containers and which prevent the over-ordering of materials.
- Include **inspection of the waste stations** in factory EHS (environment, health and safety) tours.
- Establish a **corrective-action procedure** for non-compliances and ensure it is kept updated.
- Set up a **substitution plan** in order to investigate opportunities to substitute use of hazardous substances with safer alternatives that will not produce hazardous waste.
- Identify manufacturing processes that **convert materials efficiently**.
- **Monitor waste-disposal companies** and their waste disposal practices.

### ***Best Practice***

---

Below some ideas on how to follow the waste hierarchy<sup>30</sup> can be found. For related possible monetary savings and further measures refer to "References".

- Good waste management starts with a good sorting and separation system.
- REDUCE SOLID WASTE
  - Improve purchasing practices to reduce the amount of packaging material e.g. by ordering raw materials in bulk or returnable intermediate bulk containers.
  - Purchase chemicals in returnable drums if possible. If they can be returned without washing, wastewater can also be reduced.
  - Purchase yarn on reusable cones.
  - Reduce seam waste by training programmes.
- RECYCLE SOLID WASTE
  - Sell waste fibres, sweeps, rags, yarn and cloth scraps to recycling programs, giving them a second life.

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<sup>30</sup> Waste Minimization in Textile Industry, (IOSR-JPTE) e-ISSN: 2348-019X, p-ISSN: 2348-0181, Volume 4, Issue 5 (Sep. - Oct. 2017), PP 15-18). [www.iosrjournals.org/iosr-jpte/papers/Vol4-Issue5/C04051518.pdf](http://www.iosrjournals.org/iosr-jpte/papers/Vol4-Issue5/C04051518.pdf)

## 4.2. AIR EMISSIONS - GENERAL

### *Why is this important?*

---

- Ensure legal compliance.
- Reduce environmental and public health impact.
- Eliminate odor from industrial air emissions.

### *Basic requirements*

---

#### Ensure Legal compliance

- Ensure to have updated **permits and authorizations** for air emissions. Have a clear overview of limits and requirements.
- Ensure regular **monitoring**.
- Ensure all measures **comply with laws and regulations** and if not, remediate immediately.
- **Do not practice open burning** of solid wastes, whether hazardous or non-hazardous.

#### Measure and assess

- Identify and document all air emissions (controlled and fugitive), their **sources, contaminants** and respective **volumes**.
- Document how each controlled air emission is **treated prior to discharge** to ensure compliance with the standards/limits -> identify any **non-compliances**, evaluate treatments and identify how to improve treatment performance.
- Identify **monitoring** required to ensure ongoing compliance with permitted limits. Establish a monitoring program accordingly. Tests must be conducted by a professional and qualified independent laboratory. All test records must be kept on file for at least 5 years or according to local law.

#### Set goals and targets

- Identify opportunities to reduce air pollution.
- **Set reduction goals, targets** and strategies to achieve targets (incl. deadlines) -> identify ways to improve efficiency and reduce losses.
  - Assess the characteristics of the organization's air pollution and conduct root-cause analysis to identify the key operations in factory production that are most polluting.
  - Phase out chemicals classified as ozone-depleting substances. No new systems or processes should be installed using CFCs, halons, 1,1,1-



trichloroethane, carbon tetrachloride, methyl bromide or hydrobromofluorocarbons (HBFCs).

- Re-evaluate strategies according to results of progress monitoring.
- Define a **written strategy and plan** and organize approval by top management.

Organize and secure resources & follow up (see page 6)

### ***Advanced requirements***

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- Establish an **air-pollution management system** as an integral part of your EH&S management system.

#### Technical measures

- Collect vapors through air extractors and treat with destructive control devices.
- Use floating roofs on storage tanks to reduce volatilization opportunities.
- Use dust control methods such as covers, water suppression or increased moisture content for open material storage piles.
- Use air extraction and treatment by baghouse or cyclone for material handling sources such as conveyors and bins.
- Ensure there is sufficiently functioning ventilation in place, in order to safeguard workers and protect their health.

### ***Best Practice***

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- Volatile solvents are only used in a closed room with an exhaust and the proper PPE (Personal Protection Equipment). See also section 7, Health and Safety.

### ***Additional information / References***

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**Fugitive emissions:** all releases to the air that are not emitted through a confined air stream. Fugitive emissions include equipment leaks, evaporative losses from surface impoundments and spills, and releases from building ventilation or heating systems.

- Identify fugitive emissions and their composition.
  - Carry out quality testing of ambient air.
  - Implement a leak detection and repair (LDAR) program.
- Identify strategies to reduce fugitive emissions and redirect them to confined air streams.

### 4.3. AIR EMISSIONS – GREENHOUSE GAS EMISSIONS (GHG)

#### *Why is this important?*

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- Reduced environmental and public health impact.
- Addresses climate change.
- Reduced carbon footprint.

#### *Basic requirements*

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##### Ensure legal compliance

- If applicable, ensure to have updated **permits and authorizations** for air emissions. Have a clear overview of limits and requirements.
- Ensure regular **monitoring**.
- Ensure all measures **comply with law and regulations** and if not, remediate immediately.

##### Measure and assess

- Identify/ **calculate GHG emission volumes**. (Based on the identification and documentation of energy sources, and corresponding consumption at different stages of process/different locations of facility.)
- Calculate consumption and GHG emissions per product volume or other relevant indicator.
- Compare energy consumption and GHG emission volumes to international and local requirements → check and document compliance.

##### Set goals and targets

- Identify opportunities to **reduce GHG emissions**.
- **Set reduction goals, targets** and strategies to achieve targets (incl. deadlines).
- Define a **written strategy and plan** and organize approval by top management.

##### Organize and secure resources & follow up (see page 6)

### ***Advanced requirements***

---

- Implement an **energy and GHG management system** as an integral part of the EH&S management system.

#### Technical measures

See also section 3.1 Energy.

#### Renewable energy sources

- Exploit renewable energy purchasing opportunities (e.g. water, wind, solar).
- Use lower-carbon fuels.
- Develop and use renewable forms of energy, both as an on-site and off-site energy source.

### ***Best Practice***

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- Substitute non-renewable energy sources with renewable energy sources, e.g. install solar power.
- Work on climate change resilience.
- See also section 3.1 Energy.

### ***Additional information / References***

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- Greenhouse Gas Protocol (2012). A Corporate Accounting and Reporting Standard. Revised Edition. 116 pages. <http://www.ghgprotocol.org/standards/corporate-standard>.
- Greenhouse Gas Protocol (2012). All Tools. <http://www.ghgprotocol.org/calculation-tools>.
- Science Based Targets Initiative. <https://sciencebasedtargets.org/>.

## **4.4. NOISE**

### ***Why is this important?***

---

- Ensure legal compliance.
- Reduce EHS (environmental, health and safety) risks and noise pollution for surrounding areas. Keep your employees healthy and ensure that their hearing doesn't get damaged.

### ***Basic requirements***

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#### Ensure Legal compliance

- Ensure to have updated **permits and authorizations** for noise emissions. Have a clear overview of limits and requirements.
- Ensure regular **monitoring**.
- Ensure all measures **comply with laws and regulations** and if not, remediate immediately.

#### Measure and assess

- Identify and document **noise sources** and corresponding noise levels at different locations at the perimeter of the factory site.
- Carry out **noise monitoring** and modelling in order to ensure compliance with limits: include all stationary and non-stationary noise sources.
- Identify the **highest noise emitters/factors**.

#### Set goals and targets

- Identify opportunities to reduce noise levels.
- **Set reduction goals, targets** and strategies to achieve targets (incl. deadlines) -> identify ways to improve efficiency and reduce losses.
- Define a **written strategy and plan** and organize approval by top management.

#### Organize and secure resources & follow up (see page 6)

### ***Advanced requirements***

---

- Implement a noise management system as an integral part of the EH&S management system.
- Establish a **corrective-action procedure** for non-compliances and ensure it is kept updated.

#### **Technical measures**

- Select low-noise power equipment.
- Install silencers for fans and mufflers on engine exhausts and compressor components.
- Install acoustic enclosures for equipment casing radiating noise.
- Improve the acoustic performance of buildings by installing sound insulation.
- Install acoustic barriers.
- Install vibration isolation for mechanical equipment.
- Limit operation hours of louder equipment.
- Relocate noise sources to less sensitive areas.

- Replace sewing machines with loud motors/ replace motors?

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***Best Practice***

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- Exchange equipment to low-noise equipment.
- Encapsulate machines that cause a high noise level.

***Additional information / References***

C148 - Working Environment (Air Pollution, Noise and Vibration) Convention, 1977.  
[http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\\_ILO\\_CODE:C148](http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C148)

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## 5.CHEMICALS AND WASTEWATER

### 5.1. INTRODUCTION AND OVERVIEW

This section, "Chemicals and Wastewater", has been developed as a single section due to the strong link between the handling of chemicals and wastewater. Chemicals used in the manufacturing process may end up in the final product, the wastewater, the air emissions or in the waste leaving the factory. Therefore, it is important to implement an input-stream management related to chemicals, but at the same time ensure that applicable testing is carried out for wastewater and final product (for final product testing requirements please refer to the RSL).

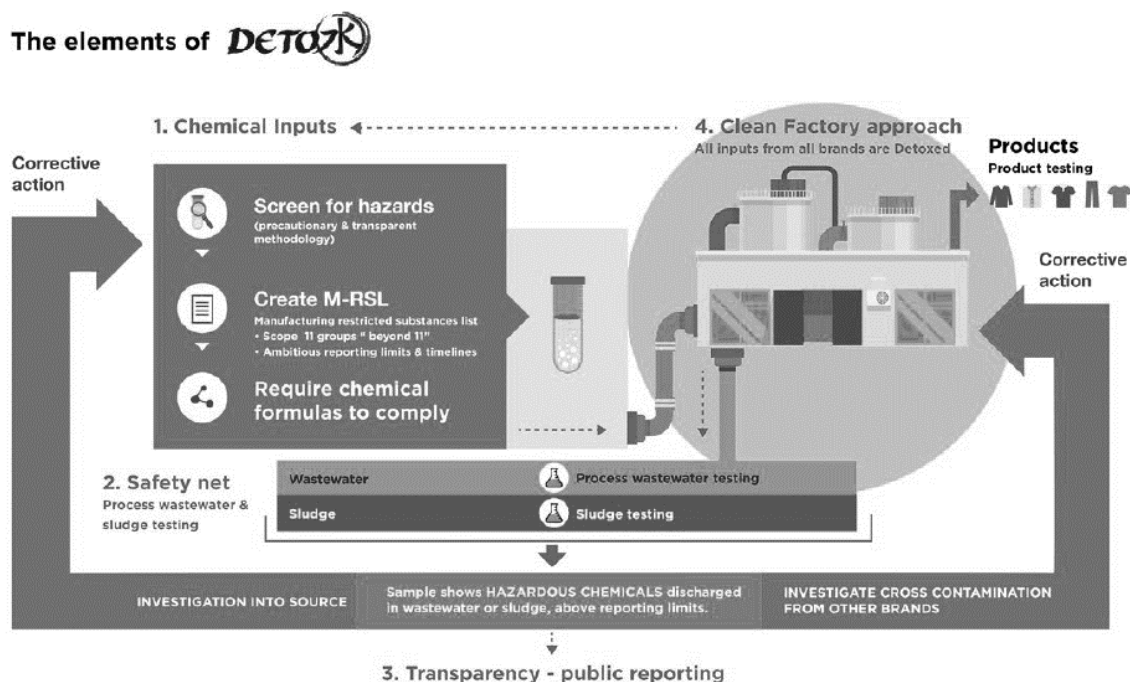


Figure "The elements of Detox". Source Destination Zero by Greenpeace.

The following approach is based on existing resources and tools which are listed in the introduction of this guideline (see pages 4 and 5).

This section has been organized as follows:

5.2. Manufacturing Restricted Substances List (MRSL).

5.3 Chemical purchasing, inventory and labelling.

5.4 Chemical Storage.

5.5 Chemical use and hazardous-waste management.

5.6 Wastewater treatment.

5.7 Restricted Substances List (RSL)

### *Why is this important?*

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- Ensure legal compliance.
- Reduce EHS (environment, health and safety) risks. Protect your workers from harmful chemicals.
- Reduce costs<sup>31</sup>.

### *Best Practices*

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Case Study on Caustic Recovery Plant, Zaber & Zubair Fabrics Ltd., Bangladesh<sup>32</sup>:

In total, Zaber & Zubair invested USD 2.3 million to set up the CRPs, resulting in combined savings of USD 3.8 million/year with a payback of less than one year.

## **5.2. MANUFACTURING RESTRICTED SUBSTANCES LIST (MRSL)**

### *Basic requirements*

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- Implement and comply with the ZDHC (Zero Discharge of Hazardous Chemicals) MRSL<sup>33</sup> (Manufacturing Restricted Substances List).
- Stay up to date concerning ZDHC MRSL updates.
- The MRSL implementation plan and system should ensure that no banned or restricted chemicals are used. In order to succeed with this, a phase-out and substitution plan must be developed, building on the use of approved chemicals.
- Some resources for substitution are:
  - Bluesign, bluefinder<sup>34</sup>
  - Subsport<sup>35</sup>.
  - Chemsec<sup>36</sup>.
  - Positive Lists from chemical companies.
- Suppliers should collect and provide MRSL conformity certificates (3<sup>rd</sup> party certificates or approval letters) from chemical suppliers and communicate a clear timeline for phasing out hazardous chemicals to the F3 customer.

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<sup>31</sup> *The Business Case for Knowing Chemicals in Products and Supply Chains:*

<https://www.chemicalfootprint.org/news/article/business-case>

<sup>32</sup> <http://www.textilepact.net/publications.html> (Case Study on Caustic Recovery Plant)

<sup>33</sup> [https://www.roadmaptozero.com/fileadmin/pdf/MRSL\\_v1\\_1.pdf](https://www.roadmaptozero.com/fileadmin/pdf/MRSL_v1_1.pdf).

<sup>34</sup> [www.bluesign.com](http://www.bluesign.com).

<sup>35</sup> [www.subsport.eu](http://www.subsport.eu) and <https://www.subsport.eu/about-the-portal/subsport-textile>.

<sup>36</sup> <http://textileguide.chemsec.org/>.

### ***Advanced requirements***

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#### Management system

- Include a section about MRSL in the company's environmental management system

### **5.3. CHEMICAL PURCHASING, INVENTORY AND LABELLING**

#### **5.3.1. CHEMICAL PURCHASING**

### ***Basic requirements***

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If new chemicals are purchased, implement a process to:

- Communicate requirements (MRSL) to all chemical supplier and get a written confirmation
- Ask if Chemical supplier has listed its products in TheBHive
- Ensure that no chemicals are purchased that are banned or prohibited either by legal or brand requirements (MRSL, RSL).
- Purchase Chemical products with 3<sup>rd</sup> party certification or approval such as GOTS, bluesign®, eco passport®, Screened Chemistry (e.g. Scivera, ToxFMD)
  - If not available or applicable ask the chemicals supplier for a MRSL confirmation or guarantee letter.
- Strictly plan and control the chemical's use from pre-treatment to finishing
- Obtain the most updated SDS (Safety Data Sheets) for each chemical (GHS Format) and store them centrally.
- Obtain an assessment and approval from environment, health and safety (EHS) personnel.
- Obtain approval from the customs office and other relevant government authorities, if needed.
- Check that labels for all chemical containers (packages) meet the legal requirements.
- Maintain hazardous-chemical purchase and transport documentation in accordance with regulatory requirements, including items such as the license for hazardous chemicals and personnel qualifications.
- Keep annual records of all chemicals purchased: chemical names, CAS number (if disclosed), supplier and volumes, their use: purpose of use, input and output points, intermediaries and waste products related to their use, volumes used, volumes found in final product and related volumes of waste produced. See also section 5.3.2 Chemical inventory.

#### Set goals and targets



- Establish a plan to substitute hazardous / non-compliant chemicals.

#### ***Advanced requirements***

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##### Management system

- Include a section on purchasing of chemicals in the company's environmental management system.

### **5.3.2.CHEMICAL INVENTORY**

#### ***Basic requirements***

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A chemical inventory must be maintained at all times according to the following guidelines:

- We ask all our supply chain members with wet processes to develop and maintain a chemical inventory, preferred electronic option is [The BHive platform](http://www.thebhive.net). This is a digital tool that allows factories to create chemical inventories easily using their smart phones. It saves time and improves data accuracy. [www.thebhive.net](http://www.thebhive.net)
- A chemical inventory must be examined and updated on monthly base.
- If new chemicals are purchased, they must be promptly added to the inventory.
- If chemicals are used up or disposed, they must be removed from the inventory or a single line shall be drawn through their listed name.
- Create a facility plan that describes in detail the physical areas of the property involved in chemical storage and usage. A pictorial facility plan is recommended for each of the following areas individually labelled on the plan:
  1. Purchasing and delivery areas
  2. Product storage areas
    - Chemical storage areas
    - Non-chemical storage areas
  3. Process areas
  4. Manufacturing areas
  5. Waste storage areas
    - Chemical waste storage areas
    - Wastewater storage
    - Non-chemical waste storage areas
  6. Other areas with chemicals, such as laboratories and maintenance areas

Refer also to the German Partnership for Sustainable Textiles for a template for a chemical inventory<sup>37</sup>. (The BHive has an export function to download the data into the Partnership's template)

### Advanced requirements

#### Management system

- Include a section on chemicals inventory in the company's environmental management system.






### 5.3.3. CHEMICALS LABELLING

#### Basic requirements

- Have a clear overview of the classification of chemicals on site and required labelling according to GHS (The Globally Harmonized System of Classification and Labelling of Chemicals) and according to local regulations.

Below one can find a list of important terms.

- **SDS** – Safety Data Sheet. SDS is the term used in the GHS for a Material Safety Data Sheet (MSDS).
- **Hazard group** – While not given a formal definition, GHS divides hazards into three major groups – health, physical and environmental.
- **Class** – Class is the term used to describe the different types of hazards. For example, *Gases under Pressure* is an example of a class in the physical hazards group. Pls. refer to classification table [GHS hazard classification](#).
- **Category** – Category is the term used to describe the sub-sections of the classes.
- **Hazard Statement** – For each category of a class, a standardized statement is used to describe the hazard.
- **Precautionary Statement** – These statements are standardized phrases that describe the recommended steps to be taken to minimize

NEW GHS		
1		Severe Hazard
2		Serious Hazard
3		Moderate Hazard
4		Slight Hazard
5		Minimal Hazard

<sup>37</sup> [https://www.textilbuendnis.com/wp-content/uploads/2018/0/Chemical-Inventory-Collection-Template\\_bsv.xlsx](https://www.textilbuendnis.com/wp-content/uploads/2018/0/Chemical-Inventory-Collection-Template_bsv.xlsx)



or prevent adverse effects from exposure to or resulting from improper handling or storage of a hazardous product.

- **Signal word** – There are two signal words used by the GHS – danger and warning.
- **Pictogram** – Pictogram refers to the GHS symbol on the label and the SDS. Not all categories have a symbol associated with them.

#### GHS hazard classification

More information on the hazard classes can be found here:

CCOHS (Canadian Centre for Occupational Health and Safety) (2015). WHMIS 2015 - Hazard Classes and Categories<sup>38</sup>.

#### Safety Data Sheet (SDS)

The safety data sheet or SDS (previously called MSDS, Materials Safety Data Sheet) is specifically aimed for use in the workplace. It should provide comprehensive information on the chemical product that allows employers and workers to obtain concise, relevant and accurate information with respect to the hazards, uses and risk management of the chemical product in the workplace. The 16 sections in an SDS (according to GHS) can be found here<sup>39</sup>. Make sure to display the SDS in the chemicals area and make it accessible to all persons who have contact with chemicals. Translate to local language, simplify and explain in easy to understand language.

#### What is a safety label?

- The label provided by marketing and attached to the **chemicals' package** during market circulation.
- A **warning label to remind employees** to operate safely.



#### Advanced requirements

##### Management system

- Include a section on labelling of chemicals in the company's environmental management system.

<sup>38</sup> [https://www.ccohs.ca/oshanswers/chemicals/whmis\\_ghs/hazard\\_classes.html](https://www.ccohs.ca/oshanswers/chemicals/whmis_ghs/hazard_classes.html)

<sup>39</sup> [https://www.ccohs.ca/oshanswers/chemicals/whmis\\_ghs/sds.html](https://www.ccohs.ca/oshanswers/chemicals/whmis_ghs/sds.html)

## 5.4. CHEMICAL STORAGE

### *Basic requirements*

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- Hazardous chemicals must be stored in a **specialized storage area** and clear **signage** must be displayed.
- The **chemicals storage area should be locked** and only trained persons with the corresponding authority should have access to the storage.
- Chemicals should not be exposed to direct sunlight.
- The chemical storage area should be dry and well ventilated.
- Storage of chemicals should be based on their compatibility with other chemicals (see incompatibility chart below).
- Chemical storage always requires extra consideration:
  - Special building requirements, including room sizes, building materials, locations and more.
  - Only specific electrical devices can be used in some cases (explosion hazard).
  - Ventilation or thermoregulation.
  - Fire suppression equipment may be required.
  - Outdoor storage of hazardous chemicals should comply with fire and explosion-prevention requirements. Explosives, level 1 flammable substances and poisonous substances should not be stored if exposed to the weather.
  - Storage areas for hazardous chemicals should be managed by specialized personnel provided with complete personal protective equipment (PPE).

### BASIC CHEMICAL INCOMPATIBILITY CHART

	Acids Inorganic	Acids Oxidizing	Acids Organic	Alkali Bases	Oxidizers	Poisons Inorganic	Poisons Organic	Water Reactives	Solvents Organic
Acids Inorganic			X	X		X	X	X	X
Acids Oxidizing			X	X		X	X	X	X
Acids Organic	X	X		X	X	X	X	X	
Alkali Bases	X	X	X				X	X	X
Oxidizers			X				X	X	X
Poisons Inorganic	X	X	X				X	X	X
Poisons Organic	X	X	X	X	X	X			
Water Reactives	X	X	X	X	X	X			
Solvents Organic	X	X		X	X	X			
X	Chemicals are incompatible – DO NOT STORE TOGETHER!								
	Chemicals can be stored together								

Figure: Basic incompatibility chart. Source: ETA Safety (Environmental Health & Safety for the Energy Technologies Area) (2016). *Proper Segregation of Incompatible Chemicals*<sup>40</sup>.

A specific separation table for hazardous chemicals is available here: DSC Limited (Dangerous Substance Control) (2014). *Chemical Storage*<sup>41</sup>.

### Advanced requirements

#### Management system

Include a section on purchasing of chemicals in the company's environmental management system.

<sup>40</sup> <https://eta-safety.lbl.gov/safety-alert/proper-segregation-incompatible-chemicals>

<sup>41</sup> <http://www.dsc-ltd.co.uk/SegregationChart.html>

## 5.5. CHEMICAL USE AND HAZARDOUS WASTE MANAGEMENT

### *Basic requirements*

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- Have a clear overview of precautions, PPE (Personal Protection Equipment) and containment equipment required to reduce all risks and exposures related to the use, storage and disposal of each chemical.
- Labels are applied on the chemical containers.
- Review SDS (Safety Data Sheet) in areas where hazardous chemicals are in use.
- Food containers can NOT be used for chemicals.
- Food or beverages are NOT allowed in work areas.
- Chemicals are mixed after making sure that they can be mixed and proper PPE is worn.
- Chemicals are mixed according to written recipes or formulations.
- Only currently needed chemicals are kept at a work station to minimize exposure / disposal (one day consumption).
- Identify all waste products related to chemical usage, output points, classify and identify hazardous waste and how it should be handled, stored and disposed of.
- Be aware of the risk that chemicals can cause **soil and groundwater contamination** if pipes or the treatment plant are not working as they should.

### *Advanced requirements*

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#### Management system

Include a section on use and chemicals waste management in the company's environmental management system.

### *Additional information / References*

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- ZDHC, Zero Discharge of Hazardous Chemicals (2015). CHEMICAL MANAGEMENT SYSTEM GUIDANCE MANUAL.  
[http://www.roadmaptozero.com/fileadmin/layout/media/downloads/en/CMS\\_EN.pdf](http://www.roadmaptozero.com/fileadmin/layout/media/downloads/en/CMS_EN.pdf)
- ZDHC, Zero Discharge of Hazardous Chemicals (2016). Chemical management for the textile industry, training module 1.  
<http://www.roadmaptozero.com/fileadmin/layout/media/downloads/en/CMModule1.pdf?fref=ts>
- ZDHC, Zero Discharge of Hazardous Chemicals (2016). Chemical management for the textile industry, training modules 2-5, available from the same link as above, replacing "1" with "2" – "5".

## 5.6. WASTEWATER TREATMENT

### *Why is this important?*

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- Various chemicals used in the textile industry are discharged via the wastewater path.
- Manufacturers have a legal obligation to control their emissions into the environment.
- High volumes of water are used in the textile industry, depleting fresh-water resources.

### *Basic requirements*

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See also ICS environmental best practices factsheets, chapter 4 – Wastewater and Effluents<sup>42</sup>.

#### Ensure Legal compliance

- Ensure to have updated **permits and authorizations**. Determine if surface-water drainage system and the domestic / sanitary water and process-water drainage systems are legally required to be separated.
- Ensure all measures **comply with laws and regulations** and if not, remediate immediately.
- Develop an **emergency response plan** (see ICS environmental best practice factsheets, chapter 4).

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<sup>42</sup> <https://ics-asso.org/>

### Measure and assess

- Identify and document **wastewater streams**, their **sources**, **contaminants**, **flow direction** and respective **volumes**.
- **Classify** each wastewater stream into categories depending on the type of wastewater treatment necessary to treat the wastewater. In particular for facilities that **generate wastewater in the manufacturing processes**.
- Consider all **wastewater treatment process steps**:
  - Pretreatment
  - Primary treatment, e.g. sedimentation
  - Secondary treatment, biological treatment
  - Tertiary treatment, e.g. UV oxidization, ultrafiltration, etc.
  - Sludge treatment
- Identify the **highest wastewater volumes** and their connected manufacturing processes.
- Separate wastewater at the source with regard to type and load of impurity before mixing with other flows.
- Document how each individual wastewater stream is **treated prior to its discharge** to ensure compliance with the standards/limits -> identify any **non-compliances** and establish **improvement plan** accordingly.
- Apply **quality testing / monitoring** of wastewater and sludge to ensure ongoing compliance with permitted effluent limits. Establish a monitoring program accordingly.
- **Ensure conformance with the ZDHC Wastewater Guidelines (minimum FOUNDATIONAL level)<sup>43</sup>**.
- Identify holding tanks with sufficient capacity and/or ability to stop production in case the wastewater pre-treatment / treatment facility / equipment / system malfunctions.
- Establish and gather **policies** and written procedures to **manage wastewater generation**, pre-treatment and treatment.
- Assess **wastewater impacts and risks**.
- Be aware of the risk that wastewater can cause **soil and groundwater contamination**.

### Set goals and targets

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<sup>43</sup> [https://www.roadmaptozero.com/fileadmin/pdf/Files\\_2016/ZDHC\\_Wastewater\\_Guidelines\\_Print.pdf](https://www.roadmaptozero.com/fileadmin/pdf/Files_2016/ZDHC_Wastewater_Guidelines_Print.pdf)  
retrieved July 15th, 2018.



- Identify opportunities to improve wastewater quality and reduce volumes -> establish **wastewater improvement plan** with clearly set goals and targets (baseline, end date, reduction, quantity).
  - **Re-use** as much wastewater as possible for selected processes.
  - Define a **written strategy and plan** and organize approval by top management.
- Organize and secure resources & follow up (see page 6)

### ***Advanced requirements***

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#### Management system

Establish a **wastewater management system** as an integral part of the company's environmental management system

#### Technical measures

##### *Wastewater*

- Ensure that surface-water drainage system and domestic- / sanitary-waste and process-water drainage systems are separate.
- Do not send any wastewater that could cause malfunctions to a biological treatment facility.
- Additional physical-chemical treatment is required if wastewater with non-biodegradable compounds is not treated separately. A few examples are listed below. These can be installed individually or in combination:
  - Use chemical oxidation treatment for highly-polluted, non-biodegradable wastewater (e.g. desizing baths).
  - Use precipitation and flocculation treatment for flows containing heavy metals.
  - Use membrane-process treatment for heavily colored wastewater flows and flows with a high volume of dissolved substances.
- Verify compliance of subsequent central wastewater treatment if applicable.
- Avoid uncontrolled air emissions of volatile chemicals from the wastewater treatment processes.
- Ensure waste residue (sludge, chemicals, etc.) from wastewater treatment operations are disposed of in compliance with local regulatory requirements.

*Storm water (includes any surface run-off and flows resulting from precipitation, drainage or other sources).*

- Prevent surface run-off from process areas or potential sources of contamination.

- Separate storm water from other wastewater streams and potentially more contaminated surface run-off, in order to reduce the volume of wastewater to be treated prior to discharge.
- Install oil-water separators and grease traps in relevant locations. Establish procedures to ensure good maintenance.
- Sludge from drains or treatment systems may contain elevated levels of pollutants and should be disposed of in compliance with local regulatory requirements.

*Sanitary wastewater (includes effluents from domestic sewage, food service and laundry facilities serving site employees).*

Segregate from other wastewater streams to ensure compatibility with selected treatment option.

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#### ***Additional information / References***

- ICS environmental best practices factsheets, chapter 4 – Wastewater and Effluents<sup>44</sup>.
- ZDHC Wastewater Guidelines<sup>45</sup>.
- ZDHC Wastewater Treatment Technologies Document<sup>46</sup>.

### **5.7. RESTRICTED SUBSTANCES LIST (RSL)**

A RSL provides information on certain chemicals and substances that are banned or restricted in finished products. The information is usually based on governmental regulations or laws. Many textile brands have a RSL that may go above and beyond regulatory requirements. Please refer to the RSL for further information.

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<sup>44</sup> <https://ics-asso.org/>

<sup>45</sup> [https://www.roadmaptozero.com/fileadmin/pdf/Files\\_2016/ZDHC Wastewater Guidelines Print.pdf](https://www.roadmaptozero.com/fileadmin/pdf/Files_2016/ZDHC_Wastewater_Guidelines_Print.pdf)  
retrieved July 15th, 2018.

<sup>46</sup> [https://www.roadmaptozero.com/fileadmin/pdf/Files\\_2018/Wastewater Treatment Technologies for the Textile Industry-FINAL.pdf](https://www.roadmaptozero.com/fileadmin/pdf/Files_2018/Wastewater_Treatment_Technologies_for_the_Textile_Industry-FINAL.pdf)

## 6.SOIL AND GROUNDWATER

### *Why is this important?*

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- Reduced environmental and public health impact.
- Reduced liability and financial risk.

### *Basic requirements*

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#### Ensure Legal compliance

- Ensure that reasonable steps have been taken to **prevent chemical spills** and to minimize their impact should they occur.
- **Contaminated soil should be disposed of or remediated** in accordance with local regulations.
- Ensure to comply fully with local or national standards and laws for the evaluation and mitigation of soil and groundwater contamination.

#### Measure and assess

- **Identify contaminated soil/ groundwater** within and around the facility and identify contaminants and contamination levels, including historical contamination non-related to the facility's current activities.
- **Identify groundwater sources** close to the facility.
- Identify on-site activities that could potentially lead to soil/ groundwater contamination, including run-off.
- In **assessing risks** related to accidental releases or leaks include a risk assessment of soil/ groundwater pollution.
- If contamination of land is suspected or confirmed during any project phase, the cause of the uncontrolled release should be identified and corrected to further avoid releases and associated adverse impacts.
- Establish procedures to ensure a systematic approach to identifying, checking and monitoring pollutant risks that may generate contamination to the soil/groundwater.

#### Set goals and targets

- Establish specific pollution-control or decontamination strategies for all polluted soils.

Due to the specific characteristics of this section, *organize and secure resources* and the *follow up section* will be addressed in more detail below.

#### Organize and secure resources

- **Establish clear procedures and assign team** for accidental release to soil: the release should be managed as quickly as possible and contained as much as possible.

- Identify strategies to **prevent the contamination of soil/ groundwater**.
- **Train personnel** accordingly.
- Ensure containment of all hazardous materials and wastes.
- Do not store hazardous materials outdoors.
- Implement prevention strategies to reduce risks of run off.
- Contaminated lands should be managed to avoid public health and ecological impacts.
- Make spill kits available.

#### Follow up

- Keep records of soil-pollution incidents and how they were managed.
- Keep records of receipts relative to the collection of contaminated soil.
- Keep records of soil-pollution analysis.
- Inspect regularly to identify any potential leak or contamination.

### *Advanced requirements*

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#### Management system

- Include a section on soil and groundwater pollution in the company's environmental management system.

#### Technical Measures

- Install oil/water separators and sand traps in areas where run-offs that may contain hydrocarbons are likely to occur.
- Do not store chemicals or hazardous wastes directly on the ground.
- Install secondary containment for all chemicals and hazardous-waste storage areas.
- Ensure wastewater and chemical pipes are intact.
- Ensure wastewater treatment plant is functional and will treat the wastewaters according to standards.
- Ensure underground storage tanks (UST) are installed with leakage detection and are well maintained.

## **7.HEALTH AND SAFETY**

### *Why is this important?*

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- Health and safety is related to the handling of environmental aspects.

- Reduce risk of accidents and illness.
- Minimize medical costs.
- Protect the community which could be affected by business practices.

### **Requirements**

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- First conduct a PPE hazard assessment, to determine which of the process steps performed in factory poses a hazard to health and safety.
- Whenever a health and safety risk has been identified for the workers or the community, the preferred option is always to eliminate the risk (e.g by phasing out hazardous chemicals). PPE should always be a last resort, after all measures for safety improvement have been taken.

In case the risk cannot be eliminated:

- Conduct a PPE assessment for every worker involved in the risk associated production process.
- make sure to always provide adequate **Personal Protection Equipment (PPE)**:
  - provide PPE which has a good quality (not the cheapest) and which is still in a condition to be used (check the expiring date where applicable)
  - **free of charge**
  - make its **use mandatory**
  - train workers in how to use PPE
- PPE should only be used **only as a last resort**, after all other measures to improve safety have been taken.

### **Best Practice**

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Different work processes performed in a factory require different PPE. Please find below a selection of best practices, which does not claim to be exhaustive. Provide...:

- ...earplugs to all persons who need to access the boiler room.
- ...metal mesh gloves and masks for cutting processes.
- ...protection for the handling of chemicals as indicated on the SDS (for chemicals, the REMC Handbook<sup>47</sup> provides a wealth of information on health & safety).

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<sup>47</sup> <https://www.sia-toolbox.net/solution/resource-efficient-management-chemicals-textile-and-leather-sector-companies>

- ...signs at relevant workstations which show appropriate PPE for the work process.

#### ***Additional information / References***

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Occupational Safety and Health Branch Labour Department (2003). Chemical Safety in the Workplace. Guidance Notes on Chemical Safety in Textile Finishing. <http://www.labour.gov.hk/eng/public/os/C/B127.pdf>.

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