



Integrated permits for textile installations: training mission 1

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Agenda

Integrated permits for textile installations: training mission 1

Act. 4.2.b.1

6th – 9th of November 2012

MS Experts: Jarek Gontek (Poland), Vicenta Carbonell (Spain)

Objectives:

- Present and explain the training programme.
- Discuss the reference materials (draft By-Law, generic guides, sector guide, BREFs).
- Visit Akbaşlar Tekstil and define together the data for mission 2 that the installation will have to collect and provide, and which one not.
- Present & discuss the key parts of the document describing the permit application contents.
- Establish targets & contents of training mission 2.
- Start preparing the materials for mission 2.

AGENDA

Tuesday 6th of November

- 10:00 – 12:30 Presentations on the training programme and the material which will be the basis for the training:
 - o César Seoáñez (RTA): training programme, motivation of training
 - o Ece Tok (RTA Counterpart):
 - Relevant legislation in the new permitting system
 - Draft By-Law
 - Textile Decree 28142
 - o César Seoáñez (RTA):
 - Reference materials and how to use them.
 - Implementation of IPPC in Spain, example of consequences for a textile installation.
- 12:30 – 13:30 Lunch break



Eşleştirme Projesi TR 08 IB EN 03
IPPC – Entegre Kirlilik Önleme ve Kontrol
T.C. Çevre ve Şehircilik Bakanlığı



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- 13:30 – 17:00: Jarek Gontek and Vicenta Carbonell (experts delivering the training):
 - o Presentation of the team of Polish & Spanish experts delivering the training course.
 - o Main characteristics of the new permitting system. New features with respect to existing system.
 - o Use of relevant documents when applying, and when assessing the application: examples.
 - o Common problems & doubts during permit application preparation & assessment.

Wednesday 7th of November

- 09:30 – 10:30 Presentation of the representative of Akbaşlar Tekstil, describing the installation.
- 10:30 – 12:30 Visit to the installation, focussed on its environmental performance.
- 12:30 – 13:30 Lunch break
- 13:30 – 17:00 Jarek Gontek and Vicenta Carbonell:
 - o Discussion: First impressions on the environmental performance of Akbaşlar Tekstil.
 - o Preparation of training missions 2 & 3 based on the case of Akbaşlar Tekstil: info needed, and topics of interest for the participants.

Thursday 8th of November

- 09:45 – 11:45 Jarek Gontek and Vicenta Carbonell: Presentation and discussion of the key parts of the document describing the permit application contents.
- 11:45 – 12:00 César Seoánez: Summary of this first mission, and key data of training mission 2.
- 12:00 – 13:00 Lunch break.
- 13:00 – 19:00 Trip back to Ankara.

Friday 9th of November

- Morning:
 - o 09:30 – 13:00 Fix targets and detailed contents for the next mission. Work to prepare the next training session materials using the conclusions and info collected of the previous days.
- Afternoon:
 - o 14:30 – 16:00 Continuation of the work to prepare the next training session materials using the conclusions and info collected of the previous days.
 - o 16:00 – 18:00 Preparation of the mission's report.

SECTOR TRAINING PROGRAMME

General considerations:

The calendar which has been agreed for the missions (training sessions) is the following one:

4.2.b.1 Training sector 2 (textile)	06/11/2012	08/11/2012
4.2.b.2 Training sector 2 (textile)	08/01/2013	10/01/2013
4.2.b.3 Training sector 2 (textile)	11/03/2013	14/03/2013

Topics of interest pointed out by the Turkish experts:

- Presentation of the Integrated Environmental Permits (IEP) By-law, permitting procedure and basic materials.
- One of the objectives should be to provide good advice on how to prepare a good permit application for the given sector. Detailed and extensive discussion about how should be the content of each of the documents of the application file.
- Focus should be thinking specially in the case of existing installations.
- How to take into account also the horizontal BREFs in the assessment, and during the global assessment phase of the permit.
- How to make the global assessment of the media-based reports on emissions, and other reports from other Competent Authorities, in order to prepare the first draft of the IEP.

Methodology:

- The training sessions of mission 1 of each of the sectors will be held at the place where the facility is located.
- The training sessions of missions 2 and 3 of each of the sectors will be held in a Hotel in Ankara.

The Spanish and Polish experts will use for the training sessions the specific data of the pilot installation and some examples about issues they consider important to remark based on their experience, proposing in each of the training sessions several exercises to the participants related to the solution of those issues.

MISSION 1: See agenda.

MISSION 2:

Main objective:

- Work together to learn how to prepare the application for the Integrated Environmental Permit.

Preparation:

- Documentation to prepare in the last day of mission 1 by MS experts: A template for application form , examples of points they consider important to remark for their complexity or importance during the process of application for the permit and during the public consultation period.
- Twinning office: Translation of the training material into Turkish.

The following focus/contents were agreed (in the case of missions 2 and 3 the exact time distribution is left more open to the criteria of the MS experts who will deliver them):

- Detailed and extensive discussion about how should be the content of each of the documents of the IEP application file.
- Work together to check the problematic points of the IEP application. The experts will have prepared in addition, as exercises or just to comment them, several typical problems that are faced when the application is received, to put them as examples.
- Feedback from the public consultation period.

The fourth day will be devoted by the MS experts to prepare the next training session materials using the conclusions of the previous days.

The Turkish team considers specially interesting the case of existing installations, more than of new ones. The examples and experience from Poland and Spain will be very useful.

The expected outcome of mission 2 is an example of how could be the IEP application of the pilot installation.

Additionally, from the experience of this mission, the MS experts may check if some parts of the guides used may be improved.

MISSION 3:

Main Objective:

- Work together to learn how to prepare the Integrated Environmental Permit.

Preparation:

- Documentation to prepare in the last day of mission 2 by MS experts: A template for the permit, examples of points they consider important to remark for their complexity or importance during the process of giving the permit

- Twinning office: Translation of the training material into Turkish.

The following focus/contents were agreed (in the case of missions 2 and 3 the exact time distribution is left more open to the criteria of the MS experts who will deliver them):

- Make an explanation on what aspects should the permit include and learn how to include those aspects.
- The experts will propose some exercises relative to the preparation of the emissions reports, to learn how to use the BREFs, guides and BAT Conclusions Documents as a reference. Specific request: how to take into account also the horizontal BREFs in the assessment, and during the global assessment phase of the permit.
- EIA and IEP, conflict resolution.
- How to make the global assessment: how to coordinate the reports, flow of information, and possible meetings with the competent divisions or authorities for the reports.



Twinning Project TR 08 IB EN 03



Integrated Environmental Permitting
of textile installations

Mission 1: Basis of the training



Şaziye Savaş – IEP Division
Zerrin Leblebici – Water Management Dept.
Cesar Seoanez – Resident Twinning Advisor
Vicenta Carbonell – Expert
Jarek Gontek – Expert



Outline




- Motivation, programme (César)
- IEP draft By-Law & other legislation (Şaziye, Zerrin)
- Reference materials, investments (César)

Twinning project - TR/2008/06/EN/03




Motivation:
IED implementation not easy!




- New (additional) legislation and reference documents
- More demanding environmental standards
- Investments to modernise/adapt

Twinning project - TR/2008/06/EN/03



Reference Legislation



- EU: IED 2010/75/EU , Chapters I & II
- Turkey:
 - ✓ IEP (draft) By-Law
 - ✓ IPPC textile communiqué 28142

Twinnig project - TR/2008/06/14/03



Training programme



- 3 missions:
 - ✓ M 1 (6-8 nov): introduction, materials, basis for missions 2 & 3
 - ✓ M 2 (8-10 jan): Preparation of a good permit application
 - ✓ M 3 (11-14 mar): Assessment & preparation of a good permit
- M1 didactic , M2 & M3 interactive

Twinnig project - TR/2008/06/14/03



Training programme



- Objectives of mission 1:
 - ✓ Explain training programme
 - ✓ Discuss reference materials (by-law, guides, BREFs)
 - ✓ Visit Akbaşlar, see what parts of application can/cannot be completed
 - ✓ Review together permit application contents
 - ✓ EU experts:
 - Establish targets & contents of mission 2
 - Start preparing materials for mission 2

Twinnig project - TR/2008/06/14/03



Training programme



➤ Objective of mission 2:

- ✓ Improve quality of permit applications

➤ Method:

- ✓ Interactive, with exercises & discussion
- ✓ Use examples of permit application
- ✓ Based on characteristics of pilot plant, and other EU plants
- ✓ Example of completed permit application will be provided

Twinnig project - TR/2008/06/14/03



Training programme



➤ Objective of mission 3:

- ✓ Improve assessment of permit applications


➤ Method:

- ✓ Interactive, with exercises & discussion
- ✓ Focus on new/problematic aspects of the procedure
- ✓ Based on characteristics of pilot plant, and other EU plants
- ✓ Example of IPPC permit will be provided

Twinnig project - TR/2008/06/14/03



Training programme



➤ Agenda in Bursa, mission 1:

- ✓ Today:
 - Training overview
 - Reference materials & concepts overview (legislation, guides, BREFs, some key aspects of IEP implementation)
- ✓ Tomorrow:
 - Presentation & visit Akbaşlar
 - First conclusions. Info to prepare missions 2 & 3
- ✓ Thursday:
 - Permit application document: explanations

Twinnig project - TR/2008/06/14/03



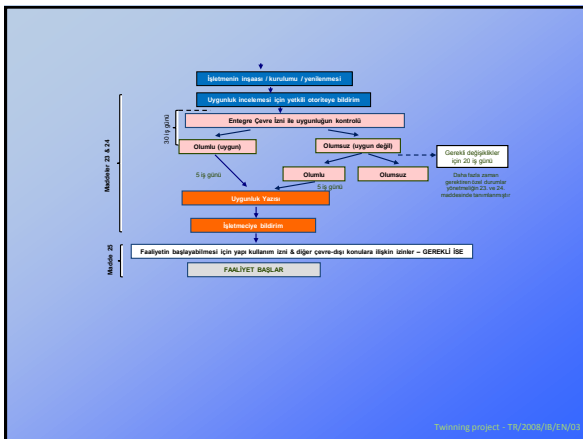
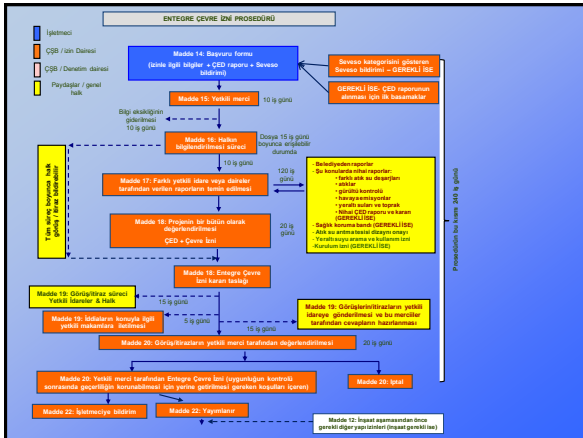
Taslak Yönetmelik



İÇERİK

- Amaç, Kapsam, Dayanak, Tanımlar
- Entegre Çevre İznine İlişkin Genel Esaslar
- Entegre Çevre İznine İlişkin Yasal Prosedür
 - Amaç ve Uygulama
 - Entegre Çevre İzni Başvurusu ve İznin Verilmesi
 - Denetim ve yaptırımlar
- Geçici Maddeler
- Yürürlük
- Yürütme
- 38 Madde 5 Ek

Twinning project - TR/2008/06/16/01





Taslak Yönetmelik



-Entegre çevre izni sürecinde yer alan Yetkili merci, idareler arasında koordinasyon ve işbirliği esasları

-Entegre çevre iznine tabi işletmeler ve faaliyetlerin kurulması, işletilmesinde ve kapatılmasında uyulması gereken esaslar ve işletmecilerin yükümlülükleri

-Çevre kalite standartları (Alıcı ortam kriterleri)

-Bilgiye erişim ve izin prosedürüne halkın katılım esasları

-Yeni kurulacak işletme/faaliyetler için ÇED ve entegre çevre izni sürecinin eş zamanlı yürütülmesi için esasları

İçercek şekilde kurgulanmıştır.

Training project - TR/2008/06/EN/03



Taslak Yönetmelik



Entegre çevre iznine tabi işletmeler/tesisler /faaliyetler

1. Enerji üretimi,
2. Metal üretimi ve işlenmesi
3. Mineral endüstrisi
4. Kimya endüstrisi,
5. Atık yönetimi,
6. Diğer faaliyetler (tekstil, kereste üretimi, ağaç işleme, deri işleme, mezbahane, gıda ve hayvan yemi üretimi, kümes hayvancılığı, karbon üretimi)

Mevcut Çevre izin Lisans Prosedürüne tabi işletmeler listesi ile Entegre Çevre izni kapsamında yer alacak işletmeler listesinin tek liste haline getirilerek, bu kapsamdaki işletme/faaliyetler için izin prosedürünün birleştirilmesi ,

Entegre Çevre izni kapsamı dışında kalan işletmeler için izin gerekliliği veya kayda alma, izleme, kontrol esaslarına dayalı bir prosedür oluşturulması hususlarının değerlendirilmesi gerekmektedir.

Training project - TR/2008/06/EN/03



Taslak Yönetmelik



Entegre çevre izninin amacı

- Çevrenin bütün olarak korunması için;
 - entegre kirlilik önleme ve kontrol sistemi oluşturarak hava, su ve toprağa yönelik sanayi kaynaklı emisyonları önlemek veya önlenemediği durumlarda azaltmak ve atık oluşumunu azaltmak,
- Entegre çevre izin işlemleri ilgili adımları hızlandırmak ve izin başvurusu yapanların idari yükünün azaltılması için;
 - iznin verilmesi sürecine dahil olan çeşitli resmi makamlar arasında koordinasyonu sağlayan bir prosedür aracılığıyla, yönetmelik kapsamındaki işletmelerin bu Yönetmeliğin hüküm ve esaslarına uygunluğu sağlayan koşulların tamamını ortaya koymaktır

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Taslak Yönetmelik



işletmelerin kurulması ve işletilmesindeki genel ilkeler;

- Çevrenin bir bütün olarak korunması için **mevcut en iyi tekniklerin (MET)** uygulanarak kirliliğin önlenmesi için gerekli tüm tedbirlerin alınması,
- Atık oluşumunun önlenmesi, azaltılması veya atığın oluştuğu durumlarda atığın, yeniden kullanım, geri dönüşüm, geri kazanım işlemleri için hazırlanması ya da bunun teknik ve ekonomik olarak mümkün olmadığı durumlarda atığın, çevre üzerindeki her türlü etkiyi önlemek veya azaltmak suretiyle bertaraf edilmesi,
- Enerji, su, ham madde kaynakları ve diğer kaynakların verimli kullanılması,
- Faaliyetlerin kesin olarak sona ermesi durumunda kirlilik riskinin önlenmesi ve faaliyet sahasının yönetmelikte tanımlandığı hale getirebilmesi için gerekli tedbirlerin alınması, Gerekmetedir.

Training project - TR/2008/06/EN/03



Taslak Yönetmelik



İzin sürecinin çevresel etki değerlendirmesi raporunun Bakanlığa sunulmasından sonra başlaması,ÇED Olumlu kararı alınması halinde sürdürülüp, sonuçlandırılması,

İşletme inşa edilmeden önce izin sürecinin tamamlanması esas alınması

Tek bir sınır değer yerine,MET Sonuç Belgelerinde yer alan emisyon düzeyleri uygulaması (The **BAT-associated emission levels**)

İzin Koşullarının işletmeci ve ilgili taraflar ile müzakere edilmesi (Md18/19)

Yetkili mercinin tüm süreci koordine etmesi

Training project - TR/2008/06/EN/03



Taslak Yönetmelik




YÜRÜRLÜK


Yeni Tesisler için Yönetmelik hükümleri yönetmeliğin yayımı tarihinden itibaren 3 yıl sonra yürürlüğe girer.

Mevcut tesisler yönetmeliğin yürürlük tarihinden itibaren en geç 10 yıl içinde, bu Yönetmelik hükümlerine göre entegre çevre izni almakla yükümlüdürler.(mevcut tesisler için 13 yıl geçiş süreci öngörülmüştür.)

Training project - TR/2008/06/EN/03




IPPC textile comm. 28142




- Big step
- Clean production plan
- Implementation of BATs from textile BREF

Twinnig project - TR/2008/06/14/03



Reference materials



- EU: textile BREF & other BREFs: explanations later
- Turkey:
 - ✓ National BAT guide for textile installations
 - ✓ Basic guides:
 - ❑ For industry: good permit application
 - ❑ For MoEU: good assessment of application

Twinnig project - TR/2008/06/14/03



Reference materials



- National BAT guide for textile installations:



 - ✓ Focusses EU BREF to Turkish sector
 - ✓ References to textile comm. 28142 & BREF
 - ✓ Ch. 5: monitoring & control
 - ✓ Annexes: including check-lists
 - ✓ Shorter, easier & adapted to "all publics"
 - 1. Beginner : **READ FROM THE BEGINNING.**
 - 2. Textile expert : **START IN CHAPTER 4** , and if doubts, see ch. 2, and the textile BREF.

Twinnig project - TR/2008/06/14/03



Textile guide



II. Objectives:


1. Overview of the sector in Turkey (Chapters 1 and 3).
2. Describe the processes, technologies and techniques (Chapter 2)
3. Discuss the BATs and some emerging techniques (Chapters 4 and 6)
4. Discuss the available tools and methods to monitor and control (Chapter 5)

➤ *It includes additional practical & updated info about BATs & emerging techniques in Chs. 4 & 6*


➤ *This guide should constitute a reference for the staff of the MoEU and for the textile installations' representatives.*

➤ *This guide IS NOT A LAW that establishes emission limit values (ELVs)*

Training project - TR/2008/08/16/01



Textile guide



ÇEVRESEL PERFORMANS ÜZERİNDEKİ ETKİSİNE BAĞLI OLAN DEĞERLER									
	4	5	6	7	8	9			
ATIK	Azalma yok		%20 azalma	%30 azalma	%40 azalma	>%50 azalma			
SU	Biyolojik olarak çözümlenemez		%10 - 20 azalma	%30 - 40 azalma	%50- 60 azalma	>%60 azalma			
HAVA EMİSYONU	Yüksek kirlilik	Çevresel performansta	%20 azalma	%30 azalma	%40 azalma	>%50 azalma			
ENERJİ TÜKETİMİ	Yüksek tüketim		%10 - 20	%30 - 40	%50- 60	>%60 azalma			

ÇEVRE İYİLEŞTİRME						
UYGULANAN TEKNOLOJİ	ATIK	SU	EMİSYONLAR	TÜKETİM Enerji	TÜKETİM Ham madde	GÜRÜLTÜ
EĞİTİM VE DOKUMA						
Geleneksel yağların suda çözünür yağlarla değiştirilmesi	5	7	5	7	5	5
Sentetik elyafın hazırlanmasında kullanılan lubrikantlar	6	7	5	5	5	5
Yün eğirme için kullanılan lubrikantlar	5	7	6	5	5	5
Örgü fabrikasında kimyasal maddelerin kullanımının azaltılması	5	7	5	6	7	5
Çırtı formülünde sentetik parafin kullanımı	5	7	6	6	6	5



Textile guide



➤ Ch. 5: Monitoring & control

✓ Example: Not-normal operating conditions: how to include in permit:

Elbette bir tesisin başına gelebilecek tüm varsayılabilir durumları bir arada düşümlük imkansızdır. Hem işletmenlere hem de yetkili makamlara verilebilecek iyi bir tavsiye aşağıda belirtilen şekilde tesislerin farklı parçalarının arızalanmasının sonuçları hakkında düşündürmektir.

- Atık su arıtma tesisi arızalanırsa ne olacak?
- Toprağa kimyasal sızıntı görülmesi durumunda ne olacak?
- Atık su akımını ölçer alet arızalanırsa ne olacak?

Örnek:

Aşağıdaki satırlarda bir tekstil firmasının izin belgesinden bulunmasının faydalı olabileceği birkaç cümle yer almaktadır:

"İlk ateşleme, durdurma veya doğru atık su yönetimi için gerekli olan tesisatın arızalanması durumunda şunlar gereklidir:

- Atık su arıtma tesislerinin tüm ölçüm aletlerini ve teknik aletlerini doğru çalışmaları için kontrol ediniz ve yine haftada bir kez olmak üzere çöktürme tanklarını ve diğer atık su arıtma ekipmanını kontrol ediniz. Herhangi bir zarar edilmesi durumunda zarar ortadan kaldırılması için gerekli olan tüm faaliyetleri başlatın.
- Atık su akımını ölçen cihazın arızalanması durumunda derhal tamir ettiriniz. Arada geçen süre içerisinde atık su miktarı su kullanımına dayalı olarak hesaplanmalıdır.
- Üretim sahasında maddelerin kontrolsüz bir şekilde salınması durumunda kanalizasyon sistemine ulaşmaları engellenmeli ve çevre korumadan sorumlu bir uzman ve teknik bir müdür durum hakkında bilgilendirilmelidir."

Textile guide

➤ Annexes:

KONU	BREF BÖLÜMÜ	28142 sayılı AB Bakanlığı Tebliği
Sektörün tamamı için genel MET'ler		
1 Yönetim	4.1.1, 4.1.27, 5.1	A.1 ve A.2 Bölümleri
2 Kimyasalların kullanılması	4.3.3, 5.1	A.2.2.3 A.2.2.5, B.2.19, B.2.8, B.2.13.1, B.2.16.2
3 Ham maddelerin seçilmesi	4.3, 5.1	A.3
4 Su ve enerji yönetimi	4.1.4, 4.1.5, 5.1	B.2.20.2, B.2.2.3, B.2.20, A.4 Bölümleri
5 Atık yönetimi	5.1	A.3 ve F
Özel faaliyetlere ilişkin MET'ler		
6 Ön terbiye	4.5, 5.2.2	B.2.1, B.2.2, B.2.3, B.2.4 Bölümleri
7 Boyama	4.6, 5.2.2	B.2.5, B.2.6, B.2.7, B.2.8, B.2.9, B.2.10, B.2.11, B.2.12, C.1 Bölümleri
8 Baskı	4.7, 5.2.2	B.2.13, B.2.14, B.2.15 Bölümleri
9 Bitim işlemleri	4.8, 5.2.2	B.2.16, B.2.17, B.2.18, B.2.19, C.2, C.3, C.4 Bölümleri
10 Yıkama	4.9, 5.2.2	B.2.20 Bölümü
11 Yapık yıkaması	4.4, 5.2.1	B.1 ve C.4.9 Bölümleri
12 Ön terbiye, boyama, bitim işlemleri, baskı ve yıkamada daha az tehlikeli kimyasalların kullanılması	4.1.3, 5.1	A.2.2 Bölümü
13 Atık su arıtımı ve çamur boyatması	4.10, 5.3	D.2, D.5.4, D.7.3, D.3 Bölümleri
GENEL (SEKTÖRE ÖZEL OLMAYAN/YATAY) KONULAR		
Emisyon izleme ve raporlama	Izleme Prensipleri	Genel Bölümü
14	BREF, 2, 4, 5, 7, 8 numaralı bölümler	

Basic guide for industries

➤ Goal: provide enough info to prepare a good application

➤ Contents:

- Intro to IEP & IED
- Permit application contents
- Review and update of permit conditions
- Permitting procedure
- Explanations of some concepts of IEP by-law
- Annexes: IEP contents & Installations under the scope of IEP by-law

Twinning project - TR/2008/06/EN/03

Basic guide for industries

➤ Permit application contents:

- Generic, for all kinds of industry
- Thursday: detailed review of an adaptation to textile installations

➤ Review and update of permit conditions:

- Duration of permit (art. 28 of By-Law)
- Criteria defining "substantial change"
 - Addition of non-substantial changes may lead to substantial one

Twinning project - TR/2008/06/EN/03




Basic guide for industries




➤ Explanations of some concepts of IEP By-Law:

1. Equivalent parameters and technical measures
2. General Binding Rules
3. Environmental Quality Standards
4. Ownership cases
5. Flexibility to modify ELVs
6. Assessment as a whole of environmental impacts
7. "Compounds" of Annex II

Twinning project - TR/2008/06/14/03



Basic guide for industries



➤ Annex I: structure of permit

EK 1. ENTEGRE ÇEVRE İZİNİ İÇERİĞİ

1. Genel bilgiler
 - 1.1. Yasal çerçeve
 - 1.1.1. İzin verilmesi konusunda uygulanan mevzuat
 - 1.1.2. İzin geçerliliği (süresi)
 - 1.1.2.1. İstisnai durumları kapsayacak
 - 1.1.3. Diğer izin ve lisanslar (Entegre Çevre İzninden önceki)
 - 1.2. Sürece dahil olan Yetkili Otoriteler
 - 1.3. Uzun menzilli veya sınırlı kirliliğin minimizasyonuna ilişkin hükümler
2. Tesisin tanımı
 - 2.1. Tesisin ismi²⁸

➤ Annex II: installations under scope of By-Law (clarifications)

Twinning project - TR/2008/06/14/03



Basic guide for MoEU's staff



➤ Goal: provide enough info to assess properly the application

➤ Overlaps with guide for industries

➤ Differences:

- No permit application contents,
- Instead Annex 2, check-list of those contents
- 3.2 Explanations of docs to be presented by the operator

➤ Suggestions for improvements welcome

Entegre Çevre İzinleri: Çevre ve Şehircilik Bakanlığı personeli için destek kılavuzu

Proje TR/2008/06/14/03

Görev no: 6.2

2009/2012

ŞEHİRCİLİK BAKANLIĞI


YEREL YÖNETİMLER

ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI


ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI

ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI

Twinning project - TR/2008/06/14/03



Investments in textile installations



➤ Spain


✓ Study post-implementation of IPPC (2008-2009)

❑ Only 1 textile answered, 6 million €


✓ SATI textile installation info, 1.2 million €

➤ MedClean study cases in Turkey & other countries

Twinnig project - TR/2008/10/14/03




Investments in textile installations




	Doküman
1	Gündem
2	Sektör eğitim programı
3	Sunum: Entegre ruhsat başvurusu temel prensipleri
4	Ruhsat başvuru içeriği, Tekstil sektörü
5	İzin başvuru dosyasının değerlendirilmesi esnasında kullanılacak kontrol listesi
6	İzin koşullarını oluştururken dikkate alınması gereken bref'in ilgili bölümleri ve çevre ve sağlık bakanlığının 20142 sayılı tebliğinde bahsedilen metlerle olan uyumu
7	MedClean: Tekstil endüstrisinde temiz üretimin teşvik edilmesi
8	MedClean: Tekstil endüstrisinde temiz üretim programı
9	MedClean: Bir tekstil endüstrisinde temiz üretim
10	MedClean: Tekstil endüstrisinde kirlilik önleme
11	MedClean: Tekstil sektöründe temiz üretim uygulamaları
12	MedClean: Hazırlık proseslerinin combine edilmesi. Düşük maliyetli, verimliliği yüksek bir çözüm (tekstil endüstrisi)
13	MedClean: Bir tekstil fabrikasında yeniden-boyamanın azaltılması
14	MedClean: Bir tekstil fabrikasında enerji geri kazanımı
15	MedClean: Bir tekstil fabrikasında çözelti oranının düşürülmesi
16	SATI tekstil grubu: IPPC uygulaması
17	Entegre çevre izni proseduru

Twinnig project - TR/2008/10/14/03



Investments in textile installations





➤ Example: SATI textile installation

COSTS/INVESTMENTS done to obtain the IPPC permit (€): Total 1.2 million

	2007	2008	2009	2010	2011
Costs related to the obtention of the IPPC permit	34.484	25.230	4.800	4.200	4.200
Periodic controls			6.820		6.767
Investments to adapt to IPPC requirements stated in the permit	73.989	132.475	38.634	10.642	8.511
Other environmental investments	13.786	12.796	13.099	13.684	9.093
Chemical products / waste water treatment	77.469	106.306	76.585	70.240	79.029
Taxes related to waste water discharged from our WWTP into the municipal network and WWTP	84.603	90.309	75.741	76.886	59.150

Twinnig project - TR/2008/10/14/03



Investments Savings in textile installations

➤ MedClean study cases in Turkey & other countries

- ✓ Clean production promotion project
- ✓ Reuse / Reduction of water consumption & dyes
- ✓ Reduction of heat losses. Installation of heat exchangers
- ✓ Replacement of chemicals to less hazardous ones
- ✓ Reduction of number of washes
- ✓ Improvements in machinery, replacement of dispersant
- ✓ Better jets to reduce liquor ratio
- ✓ Considerable and immediate money savings

Twinnig project - TR/2008/06/14/03



Any questions?



Twinnig project - TR/2008/06/14/03





Teşekkürler!

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Twinnig project - TR/2008/06/14/03

Integrated permit application basics

The Team

• Vicenta Carbonell – expert (Spain)



- Senior permit writer of one Spanish Region (Valencia)
- 10 years of IPPC experience
- 14 years experience in environment

• Jarek Gontek – expert (Poland)



- Senior Inspector of one Polish Region (Silesia)
- 9 years of IPPC experience
- 22 years of experience in environment

2

The Team

• Krzysztof Wojcik – expert (Poland)



- Chief Inspector of one Polish Region (Lodz)
- 9 years of IPPC experience

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Abbreviations

- **IPPC** – Integrated Pollution Prevention (and) Control,
- **BAT** – Best Available Techniques,
- **BATC** – Bat Conclusions,
- **BREF** – BAT Reference documents,
- **ELV** - Emission Limit Values,
- **EIA** – Environmental Impact Assessment,

4

Important EU Acts

- EU IPPC Directive 96/61 on September 24th 1996,
- Replaced by EU IPPC Directive 2008/1/EC on January 15th 2008,
- Replaced by EU Industrial Emissions Directive 2010/75/UE on November 24th 2010.

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BAT

- **Best** - in relation to techniques, means the most effective in achieving a high general level of protection of the environment as a whole,
- **Available** - those techniques developed on a scale which allows implementation in the relevant class of activity under economically the technically viable conditions, taking into consideration the costs and advantages,
- **Techniques** - includes both the technology used and the way in which the installation is designed, built , managed, maintained, operated and decommissioned.

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BATC

- **BATC** – BAT conclusions - document containing the parts of a BAT reference document laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures,
- BAT conclusions will be obligatory for the operators to ensure the same conditions for them in different EU countries,
- Implementation – January 2013 for new installations; January 2014 for old ones,
- So far – BATC for iron and steel industry and glass industry.

7

Where to find BATs?

- BREFs – BAT reference documents
- Curently 33 BREFs and ~50 BAT guidances,

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BREF

- BREFs are the BAT Reference documents being a result of an exchange of information organized by the European Integrated Pollution Prevention and Control (IPPC) Bureau,
- BREF may be used by integrated permit writers, operators and public,
- The BREFs inform the relevant decision makers about what may be technically and economically available to industry in order to improve their environmental performance and consequently improve the whole environment.

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BREFs relevant to the Textile Industry

- Textiles Industry (2003)
- Ref. document on General Principles of Monitoring (2003)
- Emissions from Storage (2006)
- Energy Efficiency (2009)

English: Available at <http://eippcb.jrc.es/reference/> .

Turkish: Available upon request

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ELVs

- BAT associated emission level values (ELV) indicate levels achievable through the use of a combination of the process techniques and abatement technologies ensuring a high level of protection for the environment as a whole.
- ELVs can be found in BATC documents or in BREFs' BAT conclusion chapters.
- ELVs from BATC documents will be obligatory,
- ELVs that can be found in „old“ BREFs will be used as a reference only.

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Integrated permit (1)
What is it?

- Integrated permit is a form of licence for operating an industrial instalation,
- It is obligatory for instalations listed in Appendix I of Industrial Emissions Directive – 6 groups of installations,
- It has replaced different sectoral environmental permits (air, water, soil etc.) and combined them into one showing interrelations.

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Integrated permit (2)
Important for the operator (a)

- No more „Temporary Activity Certificate“; Integrated permit must be granted before any other authorization or permit needed to start the construction or operation,
- In the preparation of the permit application the operator will have to assess which BATs are in place in the installation, or are previewed to be implemented,
- The permitting procedure includes more possibilities for the public to participate and provide comments which will be taken into consideration by the Competent Authority.

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Integrated permit (2)
Important for the operator (b)

- ELVs are established on the basis of:
 - BATC documents or BREFs' BAT conclusion chapters,
 - national legislation, if „national“ limits are more restrictive than above, or refer to pollutants or parameters not covered in BATC documents.
- New elements in Integrated permit:
 - NACE – General Name for Economic Activities in the European Union – 5 or 6 digit code,
 - Baseline report – not applicable for every installation,
 - SEVESO statement – classifying the installation.

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Integrated permit (3)
Application (a)

- Application must be prepared in accordance with Article 12 of IED (Article 14 of the draft By-Law on Integrated Environmental Permits with much more detailed description of application content),
- For the new installations or in case of substantial change or introduction of a new technology EIA report must be attached to the integrated permit application. The permit and the EIA must be compatible.

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Integrated permit (3)
Application (b)

Content of the application can be divided into 3 main parts:

- Kind of installation,
- Project report,
- Other documents different from the project report.

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Integrated permit (3)
Application – kind of installation (b1)

- This is a very short part of the application but a very important one. Improper classification can cause rejection of the report by the authority.
 - Suggestion: to avoid misunderstandings I faced sometimes in Polish applications as well as IPPC permits, at the beginning indicate the exact number and copy the name of the installation as listed in Appendix I of IED, like:

6.2 Pre-treatment (operations such as washing, bleaching, mercerisation) or dyeing of textile fibres or textiles where the treatment capacity exceeds 10 tonnes per day

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Integrated permit (3)
Application – project report (b2)

- The longest, most complex and relevant part of the application – takes a looot of time to prepare it,
- Needs a lot of care when collecting data as it will affect the final Integrated permit – possible mistakes or omissions can cause problems,
- Involve practitioners to collect data for this part.

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Integrated permit (3)
Application – other documentation (b3)

- EIA report,
- Urban report – evidencing compatibility of the project with urban planning provisions,
- Baseline report – where applicable,
- Identification of confidential data,
- Non-technical summary,
- Other documents (see „Integrated environmental permits: Supporting guideline for the applicants” – page 29).

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Integrated permit (4)
EIA Report

- The Directive, known as the "EIA" (environmental impact assessment) Directive, transposed into national legislation in the By-Law 26939, requires an assessment (EIA Report) to be carried out by the competent national authority for certain projects which have a physical effect on the environment.
- EIA report has to be prepared for the range of investment projects that are subject to EIA Directive and includes especially large construction projects such as power plants, cement plants, chemical operations, line constructions, etc. It also includes the expansion of existing operations or the introduction of new technology. EIA can also be prepared for smaller construction projects where a significant environmental impact can be expected.
- EIA Report must identify the direct and indirect effects of a project on the following factors: man, the fauna, the flora, the soil, water, air, the climate, the landscape, the material assets and cultural heritage, and the interaction between these various elements.

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Integrated permit (5)
Baseline Report (a)

- Where the activity involves the use, production or release of relevant hazardous substances and having regard to the possibility of soil and groundwater contamination at the site of the installation, the operator shall prepare and submit to the competent authority a baseline report before starting operation of an installation or before a permit for an installation is updated for the first time after new provisions come into force,
- The baseline report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities.

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**Integrated permit (5)
Baseline Report (b)**

- The baseline report shall contain at least the following information:
 - information on the present use and, where available, on past uses of the site;
 - where available, existing information on soil and groundwater measurements that reflect the state at the time the report is drawn up or, alternatively, new soil and groundwater measurements having regard to the possibility of soil and groundwater contamination by those hazardous substances to be used, produced or released by the installation concerned.

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**Integrated permit (5)
Baseline Report (c)**

- A permit includes:
- appropriate requirements ensuring protection of the soil and groundwater and measures concerning the monitoring and management of waste generated by the installation;
 - appropriate requirements concerning the periodic monitoring of soil and groundwater in relation to relevant hazardous substances likely to be found on site and having regard to the possibility of soil and groundwater contamination at the site of the installation.

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**Integrated permit (5)
Baseline Report (d)**

- Upon definitive cessation of the activities, the operator shall assess the state of soil and groundwater contamination by relevant hazardous substances used, produced or released by the installation. Where the installation has caused significant pollution of soil or groundwater by relevant hazardous substances compared to the state established in the baseline report, the operator shall take the necessary measures to address that pollution so as to return the site to that state. For that purpose, the technical feasibility of such measures may be taken into account.
- Upon definitive cessation of the activities, and where the contamination of soil and groundwater at the site poses a significant risk to human health or the environment as a result of the permitted activities carried out by the operator shall take the necessary actions aimed at the removal, control, containment or reduction of relevant hazardous substances, so that the site, taking into account its current or approved future use, ceases to pose such a risk.

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SEVESO

- SEVESO – took name from a small village in Italy where a major accidents in chemical industry in 1976 have occurred world-wide.
- According to SEVESO directive operators, **handling dangerous substances above certain thresholds**, must regularly inform the public likely to be affected by an accident, providing safety reports, a safety management system and an internal emergency plan,
- Adopted: SEVESO I in 1982, SEVESO II (96/82/EC) in 1996 and SEVESO III (2012/18/EU) in July 2012,
- Transposed into Turkish legislation: By-Law 27676
- In the permit application, the operator has to indicate what kind of SEVESO installation it is.

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Integrated permit (6)
Duration and review

- In general there is no fixed duration for Integrated permit,
- Review/update of Integrated permit:
 - in case of BAT conclusion change/update – Competent Authority has max. 4 years for update,
 - in case of substantial changes (according to criteria outlined in „Integrated Environmental Permit: guideline for the applicants” – open list) – operator can not carry out the installation until a new/revised Integrated permit is granted,

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Integrated permit (7)
Procedure

- Completion of application,
- Review by Competent Authority,
- Presentation to the public,
- Review by the sectorial depts of Competent Authority,
- Global assessment,
- Draft Integrated permit,
- Presentation to the public, operator and public administration, allegations
- Final Integrated permit.

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Integrated permit (8)
Public participation

- Rules for EU Members are described in Art. 24 and Annex IV of IED (adapted for Turkey in art. 11 and Annex IV of draft By-Law)
- Competent Authority shall make the information available to the public, including via the Internet,
- Allegations have to be taken under consideration by Competent Authority.

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Integrated permit (9)
Transitional period

- According to Art. 14 point 4 of IED (art. 8.5 of draft By-Law) Competent Authority may set less strict ELVs only, when an assessment shows that the achievement of ELVs associated with BATC would lead to disproportionately higher cost compared to the environmental benefits,
- The emission limit values shall, however, not exceed the emission limit values set out in the Annexes to IED, where applicable (LCP, WI, TiO₂ – *not transposed into Turkish legislation yet*).

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Integrated permit (10)
Typical problems (a)

- Understanding of BAT and BATC,
- Lack of experience of competent authorities, especially at the beginning,
- Wrong definition of production capacity thus lowering production capacity,
- Ommiting some IPPC requirements in the permits, especially at the beginning, e.g.:
 - Energy efficiency,
 - Aspects of serious disasters, etc.

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Integrated permit (10)
Typical problems (b)

- Difficulties with identifying IPPC installation:
 - Flow of information between authorities,
 - Who should identify them?
 - There are still new appearances, especially farms,
- Ommiting data or wrong data according IPPC instalations:
 - Incomplete waste catalogue,
 - Undervalued values: production, air pollution, waste and waste water etc.

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Integrated permit (10)
Typical problems (c)

- Incomplete application,
- High cost of preparing the application by the external company, especially at the beginning,
- Training of personel responsible for maintainance and daily operation of IPPC instalation,
- Implementation of BAT:
 - high cost of technology or emerging techniques,
 - difficulties to implement BAT for „old” installations,
 - difficulties to accustom personel to different management system.

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Useful links

European IPPC Bureau in Sevilla
<http://eiippcb.jrc.es>

EPA BAT and BREF download site
www.epa.ie/downloads

EIA site
<http://ec.europa.eu/environment/eia/home.htm>

SEVESO site
<http://ec.europa.eu/environment/seveso/index.htm>



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Thank you for your attention



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SEVESO (b)

AIM

- prevention of major accidents involving dangerous substances,
- limitation of the consequences of accidents on man and the environment,
- high level of protection - for man and the environment throughout the Community.

SEVESO (c)

MINIMUM DATA AND INFORMATION TO BE CONSIDERED IN THE SAFETY REPORT (*Annex II SD*)

- Information on the management system and on the organization of the establishment with a view to major accident prevention,
- Presentation of the environment of the establishment,
- Description of the installation,
- Identification and accidental risks analysis and prevention method,
- Measures of protection and intervention to limit the consequences of an accident.

SEVESO (d)

- From the safety point of view the most important part of SEVESO report is the first chapter related to the safety management system,
- Content of this chapter should be in accordance with requirements listed in *Annex III SD*,
- If SEVESO report is applicable for the installation, it must be prepared and accepted by the Competent Authority before the installation start-up.



Twinning Project TR 08 IB EN 03



PERMIT APPLICATION CONTENTS
TEXTILE SECTOR
Mission 1: Basis of the training



Vicen Carbonell
VAERSA . Valencia (Spain)

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Outline





➤ PROJECT REPORT



➤ Annexes.

➤ OTHER DOCUMENTATION DIFFERENT FROM THE PROJECT REPORT

1



PROJECT REPORT





1. GENERAL DATA



2. DESCRIPTION OF THE INSTALLATION

Date of commissioning of the Facility			
Coordinates UTM	X: 722525	Y: 4292265	UTM ZONE: 30
	Geographical coordinates		
Latitude 38° 45' 3,79" N		Length: 0° 26' 21,54" W	
Extension of the Facility [m²] 11.000 m²			
Neighboring municipalities Muro de Alcoy, Bocairent, Alcoi, Benilloba			
Watercourses affected* NONE			
Nearby infrastructure* N-340 CV-7920			
Environmental elements affected* NONE			

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PROJECT REPORT





UTM COORDINATES
UTM based on ETRS89. Used in Europe.
UTM ZONE: Turkey is between the zones 35 and 38.
To convert:
<http://home.hiwaay.net/~taylorc/toolbox/geography/geoutm.html>


ENVIROMENTAL ELEMENTS AFFECTED:
Nature reserve
Zone of hunt
Endemic flora or fauna
Protected soil



PROJECT REPORT





4. SUMMARY OF THE PRODUCTION PROCESS
FLOW CHART:





```
graph LR; FABRICS --> SINGEING; SINGEING --> WASHING[WASHING AND DESIZING]; WASHING --> PREP[FABRICS PREPARATION]; PREP --> DYEING; DYEING --> PRINTING; PRINTING --> TERMOFIXATION; TERMOFIXATION --> FINISHING; FINISHING --> PACKAGING; PACKAGING --> DISTRIBUTION
```

4





PROJECT REPORT





4. SUMMARY OF THE PRODUCTION PROCESS
LIST of machinery used in the process

Facility/Equipment	Features	Operating time	Is BAT?
Machine for singeing Fite	Power 40 CV	1920 h/year	NO
Pad dry	Continuous dyeing, Power 40 CV	2500 h/year	NO
Generator steam	5000 kg/h of steam, with 3 pumps of 10 CV each one		NO
Washing train	Power 120 CV		NO
Jigger VERSAJIG	Heigth 3200 mm, power 20 CV	2500 h/year	NO

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PROJECT REPORT





4. SUMMARY OF THE PRODUCTION PROCESS

Ancillary installations

FACILITY	DESCRIPTION
WWTP	Mechanical treatment (bloom, homogenization),biological treatment, secondary sedimentation, treatment of sludges, tertiary treatment .
COLOUR KITCHEN	Automatic system of dosing of chemical products
COGENERATION	Power Engine of cogeneration with technology LEANOX
CHEMICALS STORAGE	Storage room close to the mechanical workshop, where dyestuffs are stored in powder, finishing products ...
STEAM PRODUCTION	Boilers for steam production





PROJECT REPORT





6.1. ATMOSPHERIC EMISSIONS

Emission point		Flow (Nm³/h)	Hours of emission per day (h/day)	T (°C)	O₂(%)	Pollutant		Process	Equipment	Emission point height above ground (m)	Diameter or side section (m or m²)	Abatement system	Observations
No	Description					Concentration (mg/Nm³)	Mass flow (kg/h)						
1	Pretreatment	4206	1920 h/year	121,1	15	Dust 2,6 SO₂ <9 CO <9 NO₂ 226,23 Opacity <1 EB	0,011 0,037 0,037 0,951	Pretreatment	Singeing machine	12	0,5	-	Thermic power <70K Wt
3	Pad dry	4361	2500	107,1	15	SO₂ <9 CO <9 NO₂ <9 Opacity <1 EB	0,0392 0,0392 0,0392	Dyeing	Pad-dry	14	0,5	-	Thermic power ≥70K Wt ≤2,3 MWt





PROJECT REPORT





6.1. ATMOSPHERIC EMISSIONS



Emission point		Flow (Nm³/h)	Hours of emission per day (h/day)	T (°C)	O₂(%)	Pollutant		Process	Equipment	Emission point height above ground (m)	Diameter or side section (m or m²)	Abatement system	Observations
No	Description					Concentration (mg/Nm³)	Mass flow (kg/h)						
7	Dryer of printed fabrics	7.365	2.500	82,6	15	SO₂ <9 CO 374,41 NO₂ <9 Opacity <1 EB	0,066 2,75 0,066	Printing	Roller	15	0,6	-	Thermic power ≥70K Wt ≤2,3 MWt
8	Oil boiler	232	3.600	185,7	15	SO₂ <9 CO <9 NO₂ 32,16 Opacity <1 EB	0,002 0,002 0,074	Heat production	Boiler	15	0,25	-	Thermic power ≥100K Wt ≤2,3 MWt





PROJECT REPORT



Emission point		Flow (Nm³/h)	Hours of emission per day (h/day)	T (°C)	O₂ (%)	Pollutant		Process	Equip- ment	Emission point height above ground (m)	Diam- eter or side section (m or m²)	Abatement system	Observations
No	Description					Concen- tration (mg/Nm³)	Mass flow (kg/h)						
11	Exit Rame 2	952,5	3.600	130,2	15	SO₂ <9 CO <9 NOₓ 32,16 Opacity <1 EB	0,0085 0,0085 0,031	Finishing	Dryer of fabrics	15	0,4	-	Termic power ≥100kW 1 ≤2,3 MWt
37	Heat boiler	2072,16	2.690	130,6 8	15	SO₂ <9 CO 145,27 NOₓ 24,4 Opacity <1 EB	0,0186 0,301 0,050	Heat producti on Process	Boiler	12	0,5	-	Termic power ≥100kW 1 ≤2,3 MWt





PROJECT REPORT





ATMOSPHERIC EMISSIONS

Emission point	Pollutant	Monitoring and Control			
		Internal/ External	Frequency (continuous, daily,...)	Description of sampling method	Reports
1	Dust SO₂ CO NOₓ	External	Each 3 years	EPA, Gas analyzer	Ok
3	SO₂ CO NOₓ	External	Each 3 years	EPA, Gas analyzer	Ok
7	SO₂ CO NOₓ	External	Each 3 years	EPA, Gas analyzer	Ok



PROJECT REPORT





FUGITIVE EMISSIONS



Emission source		Pollutant	Nearby villages affected by the source
No.	Description		
22	Waste water plant, biological treatment, sludges estabilization	Metan, SH2, NH3	Village at 3 Kms

MEASURES TO REDUCE ODOURS:

- + SUBMERGED OR CLOSED INPUTS AND OUTPUTS OF WATER
- + INCREASE AERATION
- + PH CONTROL TO CONTROL ANAEROBIC GROWTH
- + TURBULENCE CONTROL
- + INCREASE THE FREQUENCY OF WASTE MANAGEMENT
- + COVERING SLUDGE THICKENER




PROJECT REPORT





FUGITIVE EMISSIONS

MEASURES TO REDUCE DUST:



- + SYSTEM OF VENTILATION AND ASPIRATION OF POWDER IN THE WHOLE INDUSTRY.
- + FILTERS
- + REUTILIZATION OF FLUFFS.



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PROJECT REPORT



METHODOLOGY FOR RELEASE NOTIFICATION

MEASURED DATA

Obtained from real measurements of emissions



CALCULATED DATA

Calculated from activity data or mass balance



ESTIMATED DATA

Based on non-standard estimations

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PROJECT REPORT



MEASURED DATA



DATA IS MEASURED WHEN:

- It's based in real measurements at the emission point.
- It's the result of measurement methods accepted and standardized.
- It is calculated based on results from a short period of one-offs



DATA will be expresed in Kg/year.

$$Emission(Kg / year) = \frac{(Concentration(mg / Nm^3) \times Flow(Nm^3 / h) \times yearly operating hours of the installation)}{10^6}$$

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PROJECT REPORT





MEASURED DATA

CONCENTRATION pmm → CONCENTRATION mg/Nm³



FROM	TO	MULTIPLY BY
ppm NO _x	mg/Nm³	2.05
ppm SO _x		2.86
ppm CO		1.25
ppm N ₂ O		1.96
ppm CH ₄		0.71

$$\text{Concentration}(\text{mg} / \text{Nm}^3) = \frac{\text{Concentration}(\text{ppm}) \times \text{MW}_i}{22.4}$$

MEASUREMENTS ACCORDING TO UNE, DIN...



PROJECT REPORT





CALCULATED DATA

DATA IS CALCULATED WHEN:



- It is based on calculations from activity data (consumptions, production...) and emission factors.
- It's based on calculation methods more complicate which involves, temperature, radiation...

DEF EXAMPLES:

OPERATION	EMISSION FACTOR (EF)
WHATEVER PROCESS	KG POLLUTANT / T. OF PRODUCT
	Kg POLLUTANT / T. RAW MATERIAL CONSUMPTION
INDUSTRIAL COMBUSTION	Kg POLLUTANT / KWh NATURAL GAS Kg POLLUTANT / Nm³ NATURAL GAS Kg POLLUTANT / termia NATURAL GAS Kg POLLUTANT / T de combustible (fuel, propane, coal, ...)



PROJECT REPORT



EMISSION FACTORS DATA SOURCES

- BREF TEXTILE SECTOR
- U.S. EPA (Emission factor and inventory group)
- EEA: CORINAIR (Atmospheric emission inventory guidebook)



EXAMPLE: Emission (Kg/year)= EF × fuel consumption/year

Where EF= Kg of gas / unit of fuel



For a boiler with natural gas:

EF= 62 g/GJ NO_x 1,4 g/GJ CH₄ 5 g/GJ NMVOCs

If we have consumption of gas in Nm3 we must multiply by 0,038 to obtain GJ.



PROJECT REPORT





ESTIMATED DATA



A DATA IS ESTIMATED WHEN:

- It's based on authorized opinions, not based on published references.
- It is based on assumptions, should not have recognized methodologies for estimating emissions or good practice guides.

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PROJECT REPORT



6.2. NOISE EMISSIONS TO THE SURROUNDINGS OF THE INSTALLATION.

NOISE STUDY

≠

NOISE ASSESMENT



New or existing installations
Competent technical
Preventive measures

During the processing of IEP



Existing installations
Accredited laboratory
Control measures

For new installations, after IEP

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PROJECT REPORT





6.3. NOISE EMISSIONS TO THE SURROUNDINGS OF THE INSTALLATION.

Description of the scheduling of activities			
Activity	Season	Duration during the day and night	Frequency
COMPRESSORS	ALL	24 HOURS	
WASHING	ALL	24 HOURS	
FINISHING	ALL	14 HOURS DURING THE DAY	
GAS STATION ADJUSTMENT	ALL	24 HOURS	
WWTP	ALL	24 HOURS	

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PROJECT REPORT




6.2. NOISE EMISSIONS TO THE SURROUNDINGS OF THE INSTALLATION.

Identification and description of noise sources					
Identification of noise sources	Description	Location	Characterization of noise	Frecuency	Sound Power or Sound Pressure
COMPRESSOR	COMPRESSOR FAN	INSIDE MAIN FACTORY	Discontinuous		
WASHING TRAIN	FAN AND HOOD	IN THE FRONT OF THE FACTORY	Continuous		
FINISHING MACHINES	FAN	INSIDE MAIN FACTORY	Discontinuous		
GAS STATION ADJUSTMENT	GAS THROUGH PIPES	OUTSIDE THE FACTORY	Continuous		
WWTP	CENTRIFUGE, COOLING TOWER, AERATION PUMP	OUTSIDE THE FACTORY	Continuous		

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PROJECT REPORT



6.3. WASTEWATER DISCHARGES.

• DESCRIPTION OF THE WASTE WATER FLOWS: PROCESS, SANITARY AND RAIN WATERS.

•INDUSTRIAL WASTE WATERS: EMISSION SOURCES, POINTS TO THE RECEIVING MEDIUM, FEATURES OF WWTP.



•RAINWATER DISCHARGES.

•SANITARY WATERS.



•OTHER DISCHARGES.



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PROJECT REPORT





6.3. WASTEWATER DISCHARGES.

3. Volume flow, amount and type of waste water for particular stream which is conducted on that discharge			
Kind of stream: industrial, sanitary and rainwater on that discharge			
Stream code	X1	X2	X3
Waste water type (industrial, sanitary, rainwater)	INDUSTRIAL	SANITARY	RAINWATER
Max. 6 hours average volume flow (l/s)			
Max. amount per day (m³/day)	1.100	6	43
Max. annual amount (m³/a)	254.000	1.582	11.312
actual annual amount (m³)			
Type of discharging:	DISCONTINUOUS	DISCONTINUOUS	DISCONTINUOUS
Total area collecting rainwater (m²)			22.852

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PROJECT REPORT





6.4. WASTEWATER DISCHARGES.

WWT control status of monitoring system			
Continuous measurement		Discontinuous measurement (key parameters)	
pH	8,2	COD	140 mg/l
T	25,5 °C	DBO5	21 mg/l
Waterflow, m³	254.000	CONDUCTIVITY	2.920 µS/cm
		SS	43 mg/l
		P	1,4 mg/l
		N	7,5 mg/l
		Hydrocarbons	100 mg/l
		Detergents	0,5 mg/l
		Dilution Colour	Non-detectable at dilution 1/40
		Cl	30 mg/l
		Sulphurs	1 mg/l
		Sulfates	20 mg/l





PROJECT REPORT





DISCHARGE BY TOTAL OR PARTIAL INFILTRATION

- * Hydrogeological Study, 2 HARD COPIES signed by competent technician.
It must include at least:
- The study of the hydrogeological characteristics of the affected zone.
 - The eventual purifying power of the soil and subsoil.
 - The risk of pollution and alteration of the quality of the underground waters in case of a discharge.
 - Determination from the environmental point of view if the discharge is harmless and constitutes a suitable solution.
 - Ownership of the areas that are affected by the spillage.
- DISCHARGE TO AN IRRIGATION DITCH:**
- Provide proof of the allowance of the holder of the ditch, authorising the discharge.



PROJECT REPORT



ABSENCE OF DISCHARGE OF WASTE WATER & TOTAL RECIRCULATION OF THE WATERS.

- *Technical justification of the total reutilization of the water (zero discharge), with explicit mention of the water streams within the installation and destination of the residual industrial sludges taking into account the industrial production processes and the available treatment facilities.
- *Technical descriptive memory of the treatment facilities, with justification of the volumes and flows processed, as well as reduction of the pollutant loads present in the waste water.
- *Certification of non-existence of discontinuous discharges to riverbed, soil or subsoil, area or reservoir.
- * Measures of control and emergency, in case of accidental spillages.



PROJECT REPORT



ABSENCE OF SPILL OF WASTE WATER DUE TO ACCUMULATION IN TANK

- Certification of the impermeability and water tightness of tank, stating the absence of water leakages in the bottom or sides of the tank.
- Justificative calculation of the dimensions of the storage tank and characteristics of the materials.
- Tank emptying frequency, contract with company in charge of its cleavage, and destination of the waste water both of industrial as of domestic origin.
- Justification of the annual volume and flows generated in both water streams.
- Supporting invoices to show the frequency and periodicity with which the extractions and cleanages are carried out.

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PROJECT REPORT





6.4. WASTE.

6.4. 1. WASTE PRODUCTION.



- ANNUAL AMOUNT.
- EWC CODE
- ORIGIN
- STORAGE
- HAZARDOUS, NON-HAZARDOUS AND PACKAGING WASTE.
- RECYCLING: INTRODUCE WASTE IN THE OWN PROCESS. E.G. CUTS OF TEXTILE FABRICS
- DISTILLATION OF SOLVENTS USED





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PROJECT REPORT



European Waste Catalogue	Description of the activity	Quantity	Unit (Kg, L, ...)	Storage system
130110 OILS	MAINTENANCE OF MACHINES	500	KG	TIGHT CONTAINER
150202 CONTAMINED TEXTILES	ALL PROCESSES	500	KG	BIG-BAGS
160107 OIL FILTERS	MACHINE	50	KG	TIGHT CONTAINER
200121 FLUORESCENT TUBES	ALL PROCESSES	20	UNITS	CONTAINER
040220 SLUDGES WWT	WASTE WATER TREATMENT PLANT	300.000	KG	BIG-BAGS
080113 RESIDUAL PRINTING PASTES	PRINTING	1.700	KG	CONTAINER
160901 LEAD BATTERIES	MAINTENANCE	100	KG	CONTAINER
160113 BRAKE FLUIDS	MAINTENANCE	50	KG	CONTAINER
180114 ANTIFREEZE FLUIDS CONTAINING DANGEROUS SUBSTANCES	MAINTENANCE	50	KG	CONTAINER
CONTAMINATED PLASTIC PACKAGING 150110	ALL PROCESSES	1.600	KG	CONTAINER
CONTAMINATED METAL PACKAGING 150110	ALL PROCESSES	1.100	KG	CONTAINER



PROJECT REPORT




6.4. WASTE.

6.4. 2. WASTE MANAGEMENT.

European Waste Catalogue	Description	Quantity	Unit	Treatment operations
040299 Residual padding dyeign liquors	Other textile industries	780	m³	Mechanical treatment (bloom, homogenization),biological treatment, secondary sedimentation, treatment of sludges, tertiary treatment

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PROJECT REPORT





NON- HAZARDOUS WASTE

European Waste Catalogue	Description	Quantity	Unit
040222 Waste fabric	All processes	13.000	Kg
170407 Iron scrap	Maintenance	7.000	Kg



PACKAGING WASTE

European Waste Catalogue	Description	Quantity	Unit
150101 Paper drums	Packaging	80.000	Kg
150202 Plastic drums	Packaging	16.000	Kg
Contaminated plastic packaging 150110	All processes	1.600	Kg
Contaminated metal packaging 150110	All processes	1.100	Kg

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PROJECT REPORT



6.5.SOIL AND GROUNDWATER PROTECTION.

Storage tanks with description						
Tank code	Tank volume (m3)	Content	Age of tank	Date of last check/ test	Prevention techniques	Type: underground/ on the ground tank
1	34	NaOH	20 YEARS	NOV-2011	SPILL PICK BUND	ON THE GROUND TANK
2	34	H ₂ O ₂	20 YEARS	NOV-2011	SPILL PICK BUND	ON THE GROUND TANK
3	2	CAUSTIC SODA	20 YEARS	NOV-2011	SPILL PICK BUND	ON THE GROUND TANK
4	20	FOAMING AGENT	20 YEARS	NOV-2011	SPILL PICK BUND	ON THE GROUND TANK
5	50	Fuel oil	30 YEARS	NOV-2011	SEALED	UNDERGROUND TANK

ACCORDING TO IED : SOIL CONDITIONS CONTROL EACH 10 YEARS
GROUNDWATER CONTROL EACH 5 YEARS.

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PROJECT REPORT



6.6.OPERATION UNDER NOT NORMAL CONDITIONS.

-Start-up and shut-down operations, leaks, malfunctions, momentary stoppages: description of the operation and the situations that cause them.

-Expected emissions in those cases.

-Measures planned.

-% of operation under not normal conditions.



- Emergency situations.

- Measures to be taken upon definite cessation. Baseline report.





WHEN THE ACTIVITY FINISH DEFINITELY THE PLACE WHEN IT TOOK PLACE MUST BE IN THE SAME CONDITIONS AS IT HAD BEFORE THE ACTIVITY BEGAN!!!

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ANNEXES



ANNEX 2. BATS- BEPS.



•DIFFERENCE BETWEEN BATS AND BEPS

•EXAMPLES FOR TEXTILE INSTALLATION:



*Related to the use of chemicals

BATS BEPS	Is BATS ? Yes/no	Environmental Improvement	Is in place? If not , what is the date of implementation
Surface active agents (Surfactants)			
To substitute alkylphenol ethoxylates and hazardous surfactants with substitutes biodegradable or bioeliminable in WWTP and do not form toxic metabolites	YES	Improve the treatability of waste water	YES
For complexing agents			
To soften clean water in order to remove from the process water iron and alkaline earth cations leading up to water hardness	YES	To avoid potential wear-out and holes in the fabric.	YES
To apply hydrogen peroxide under the optimally controlled conditions	YES	Saving hydrogen peroxide by more than 50%	NO

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ANNEXES





*Related to selection of raw materials

BATS BEPS	Is BATS ? Yes/no	Environmental Improvement	Is in place? If not , what is the date of implementation
Select material treated with low-emission and biodegradable /bioeliminable preparation agents	YES	Water saving in washing, lessen the odor problem, reduce VOCs	YES



*Concerning water and energy management

BATS BEPS	Is BATS ? Yes/no	Environmental Improvement	Is in place? If not , what is the date of implementation
Install flow control devices and automatic stop valves on continuous machinery	YES	Decrease in water consumption	YES
To improve the activity of washing in both shrinking and continuous processes	YES	Water and energy saving	YES
To use covers/floors which enable machines to be completely closed to prevent steam loss	YES	Saving in consumption chemicals, clean water and energy. Reduce solid waste and pollution load in wastewater and waste gas	YES

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ANNEXES



*** Concerning waste management**

BATs BEPs	Is BATs ? Yes/no	Environmental improvement	Is in place? If not , what is the date of implementation
To collect unavoidable solid waste separately.	YES	Saving in the cost of solid waste disposal, improve compliance with the relevant laws.	YES
To use high-volume and recyclable containers for waste.	YES	Minimization of wastes	YES

***BATs for specific operations: dyeing**

BATs BEPs	Is BATs ? Yes/no	Environmental improvement	Is in place? If not , what is the date of implementation
Dyeing			
To use automatic systems for dosing and distributing the dyes	YES	To minimize liquor surplus	YES

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ANNEXES





BEST ENVIROMENTAL PRACTICES:



- Education and environmental formation of the employees.
- Maintenance of equipments.
- Optimization in the use of the resources.
- Reduction of packaging.
- Recycling of textile remains.
- Flow charts.



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OTHER
DOCUMENTATION



1. ENVIROMENTAL IMPACT ASSESMENT.

2. URBAN REPORT.

- FOR THE APPLICATION:

PLANE OF THE PLOT

BRIEF DESCRIPTION OF THE FACILITY

NEEDS OF USING AND UTILIZATION OF THE SOIL

REQUIREMENTS OF THE INSTALLATION WITH REGARD TO THE PUBLIC ESSENTIAL SERVICES

3. REPORT OF CONTROL OF MAJOR-ACCIDENTS.

4. CONFIDENTIAL INFORMATION.


5. ANY OTHER DOCUMENTATION ACCORDING TO THE APPLICABLE LEGISLATION.

6. ANY OTHER DOCUMENTS REQUIRED BY THE COMPETENT AUTHORITY.


7. BASELINE REPORT.

8. NON-TECHNICAL SUMMARY

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OTHER DOCUMENTATION



GRAPHIC INFORMATION:

- 1. LOCATION MAP.
- 2. PLANT DRAW WITH KEY INSTALLATION ELEMENTS.
- 3. MAP OF THE EMISSION POINTS.
- 5. WATER STREAMS AND DISCHARGE POINTS.
- 6. WASTE STORAGE.
- 7. CHEMICAL STORAGE.





THANKS FOR YOUR ATTENTION;¡¡

FOR QUESTIONS OR WHATEVER YOU NEED RELATED TO IPPC:
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Tf. 34 96 197 39 20



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PERMIT APPLICATION CONTENTS TEXTILE SECTOR.

BASIC PROJECT FOR THE REQUEST OF THE INTEGRATED
ENVIRONMENTAL PERMIT OF THE FACILITIES OF :

LOCATED IN:

DATE OF ISSUE:

PREPARED BY ¹ :	APPROVED BY ² :
Name Signature	Name Signature

¹ Persons or company that have prepared the permit application

² Person who certifies the validity of this permit application on behalf of the company that owns the facilities for which the integrated environmental permit is requested.



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IMPORTANT PRELIMINARY NOTES TO UNDERSTAND AND COMPLETE THIS DOCUMENT:

1.-The meaning of the colour range that has been used in the production of this document is the following:

- ✓ **Black color:** like what is indicated in the initial Guide " Integrated Environmental Permits: Suporting Guideline for the applicants ".
- ✓ **Blue color:** New contributions for Textile industries.
- ✓ **Orange color:** examples of how should the content of the Check-list be completed by the operator of the installation.
- ✓ **Red color:** comments about what is required in the Region of Valencia

2.- When permits or other documents requested are already included in the EIA report or the clean product plan, you can make reference to the sections within the EIA or clean production plan where the requested permits or other documents can be found.

3.- Include the clean production plan as an attachment.



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PROJECT REPORT

The project report shall include, at least, the following basic elements related to the installation:

1. General data:

- Name of the company, trade name, VAT number, full address (including location, province, town, region and country), telephone, fax, e-mail.
- Owner of the installation, operator, legal representative, person in charge of the plant or production (if applicable), person in charge of environmental issues (if applicable) and contact person with his/her corresponding data (full name, position in the company, address, telephone and e-mail).

COMPANY	
Trade name	
Head office	
ZIP code	City
	VAT
Province	Telephone
Fax	E-mail
INSTALLATION	
Name	
Adress	ZIP code
City	Province
Telephone	E-mail
Person of contact	

In Valencia it is required to submit the power of the legal representative



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2. Description of the installation:

- 2.1. Number of work centres, plants, delegations, headquarters, corporate address... The data of the contact person, position, address, telephone, fax and e-mail should be included for each of the centres.
- 2.2. Register number of industrial establishments.
- 2.3. National Classification of Economic Activities (NACE).
- 2.4. Total number of workers.
- 2.5. Investments targeted to environmental improvements.
- 2.6. Organization chart (hierarchic representation of the staff with their corresponding positions or jobs).
- 2.7. Location: The UTM coordinates should be included, attaching a location map and an installation map.
- 2.8. Local and/or regional information on the urban planning, soil uses and conditions (orographical, morphological, geological conditions ...), soil classification (urban land, non-urban area, rural land, and industrial and special soils ...) and weather conditions.
- 2.9. Activity of the Annex 1 of the By-law to which the main activity and associated production capacity belong.
- 2.10. Main activities and others
- 2.11. Description of the environmental status of the site where the installation will be located and any impacts that may be foreseen, including any that may arise upon definitive cessation of the activities at the installation(for installations subject to EIA, this information is included in the EIA report).

CHARACTERIZATION OF WORKING REGIME			
Number of staff	Permanent		
	Temporal		
Working hours	Hours/year		
Date of the start of the activity of the facilities			
Date of commissioning of the Facility			
Coordinates UTM	X:	Y:	UTM zone ³ :
Geographical coordinates	Latitude:		Length:

³ UTM Zone: Turkey is between the zones 35 and 38.



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Extension of the Facility [m ²]
Neighboring municipalities
Watercourses affected*
Nearby infrastructure*
Environmental elements affected* <i>Nature reserve, zone of hunt, endemic flora</i>

* Location and distance with respect to the installation of infrastructures such as highways or roads.

Note: Attach a site plan for 1:5000 mapping

Explain how to come to the installation (Accesses)

CATEGORY OF ACTIVITIES AND FACILITIES	
Main category of activity /Facility	Heading annex 1 of IEP By-Law
<i>Textile</i>	6.2
Other categories activity/Facility	Heading annex 1 of IEP By-Law
NACE (National Classification of Economic Activities) code:	
Investments targeted to environmental improvements*	

* Indicate in the last 4 years in the case of existing installations .

Comentario [Cesar1]: Consult with LCP experts. In Turkey there are for the moment no fiscal exemptions related to environmental investments

Information on the Urban planning

If the facility has an urban compatibility report issued by the corresponding Competent Authority.

Information has to be provided about where is located the installation: if it is an industrial area, if the soil is an industrial urban one or not (it could be an undeveloped land or a protected soil) and if that zone has the necessary equipments developed or not (like a sewage network, street lighting...)



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Organization chart (hierarchical representation of the staff with their corresponding positions or jobs).

Note : attach chart

Environmental status of the site where the instalation is located.

(Here the goal is to know if the installation is located in a zone or close to a zone with some special environmental value, for example near a nature reserve)

Environmental impacts.

For existing installations, a brief summary about environmental status and impacts.

For new installations or substantial changes, they submit the EIA report.

3. Technical characteristics:

- Nominal production/treatment capacity or size: indicate the present capacity (if any).
- Operational time of the installation: indicate hours and days per week of the activity normal operation. Indicate also if the activity occasionally is operated in other periods (weekly annual variations, peak loads, etc.).
- Planned date for commencing and completion of building activities: date planned for commencing building activities (for new installations or substantial changes).
- Planned date for starting operation (for new installations or substantial changes).

HOURS OF OPERATION OF THE INSTALLATION PER YEAR	
Activity normal operation (Hours /day)	



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4. **Summary of the production process.** First describe the production process, with a schematic flow chart divided into phases⁴. For each of these phases the following information must be provided:

- A description of the phase.
- The duration (operational hours).
- The methods of operation (continuous or discontinuous).

E.g. Receipt of raw materials and opening of a lot (preparation of the fabric)

Describe the operations of pretreatment: combing, carding, washing, bleaching, mercerizing, singeing, desizing, scouring.

LIST of machinery used in the process

In Valencia it is required to attach an Industrial Registry which contains a list of the machinery.

Facility/ Equipment	Features (brief technical description)	Operating time	Is BAT?

Examples of installation / equipment in a textile industry could be: jets or jiggers, over flows, tumbler, washing train, paddle, drum, pad- batch, autoclave...

Ancillary installations.

⁴ The term "phase" means any activity in which the raw materials and auxiliaries, even if made from waste, and intermediates are being processed on a continuous or discontinuous way, extracted, processed, combusted, mixed, supplied, stored, etc.



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Facility	Description

Examples in a textile industry: colour kitchen, raw materials storage, dyestuffs an chemicals storage; water treatment plant; cogeneration; temporary storage of hazardous waste, power plant

NOTE: Attach a map with the distribution of the machinery, storage areas, power plant, offices, wastewater treatment plant.

5. Detailed description of the natural resources, raw and auxiliary materials and products, specifying the type, characteristics and quantity:

- Natural resources:
 - a. energy : use of fuel for heat and steam generation and for transport inside the enterprise not including use of fuel for production of electricity or combined power and heat, use of heat and steam from external suppliers, use of electricity, use of fuel for production of electricity and heat -power plants and boiler houses. Possible measures to increase energy efficiency.
 - b. water: quantity of water used in the process, intake of surface, ground and marine water – detailed description of intake, and indication of the cases of supply of water from outside or re-circulated
- Raw materials: list and quantities of raw materials, indicating hazardous or non-hazardous character
- Auxiliary materials: list and quantities of auxiliary materials, indicating hazardous or non-hazardous character
- Products and by products: list of output products types and quantity generated of each of them, per hour, day or year, or as expressed in the units indicated in the Annex I of the Integrated Environmental Permit By-Law.



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Annual consumption: water and electricity

Attach the permits related to water extraction, usage and consumption.

Year ⁵	Water Annual amount (m ³)	Electricity (selfconsumption) (MWhb)
A		
A+1		
A+2		
A+3		

Annual consumption: liquid fuels ; Coal/lignite

Year ⁶	Fuel (t)	Gasoil (t)	Gas (m ³)	Coal/lignite(t)
A				
A+1				
A+2				
A+3				
Year ⁷	Electricity generated(MWhb)			
A				
A+1				
A+2				
A+3				

⁵ The applicant should provide data of the last 4 years (for existing installations) or estimates for the next 3 years (new installations)

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Auxiliary materials and other products consumed

Auxiliary material or product consumed	
Annual amount(t)	
State (solid, liquid, gas)	
Storage place	
Input stage processs	

Notes:

- The applicant should cover many tables or columns as auxiliary materials involved in the process. Examples: dyestuffs, dyes, anti-foaming agents, dispersants, detergents ...
- The figures provided should be representative (for existing installations), or for the new installations estimates made based on the design of the installation.

Waste or / Byproducts (amounts in tonnes)

<i>Paste of printing</i>	
<i>Acetone</i>	
<i>Sludges from WWTP</i>	

6. Environmental emission and controls:

6.1. Atmospheric emissions:

6.1.1.Channeled emissions:

- Description of emissions points: for the emissions produced in each stage, specify the destination. In particular, indicate whether:
 - It is piped directly to the atmosphere (in this case indicate the number characterizing the emission point).



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- It is sent to successive stages of work.
- Requirements and technical conditions of the focus: height to ground level, diameter, outlet horizontal / vertical.
- Gaseous effluents generated: characterize the emissions that originate, specifying them qualitatively and quantitatively. The description should at least provide the following data:
 - Pollutants emitted indicating mass flow [kg / h] and concentration [mg / m³].
 - Air flow [m³ / h to 0°C and 0,101MPa and % O₂].
 - Temperature.
- Abatement equipment: techniques adopted for the treatment of emissions originated in each stage.

This table should be provided:



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Emission point		Flow (Nm ³ /h)	Hours of emission per day (h/day)	T (°C)	O ₂ (%)	Pollutant		Process	Equipment	Emission point height above ground (m)	Diameter or side section (m or m ²)	Abatement system ⁸	Observations
No	Description					Concentr ation (mg/Nm ³)	Mass flow (kg/h)						

We could add in the table: Coordinates UTM

⁸ For example: C= Cyclone; F.T.= Fabric filter ; P.E.= Electrostatic precipitator; A.U.V.= Venturi wet scrubber; A.S.= Absorber; A.D.= Adsorber; P.T.= Thermal post-combustion; P.C Catalytic post-combustion; Others= specify.

This table should be provided:

[illegible]

6.1.2. Non channelled emissions (fugitive emissions):

- Description of the sources of fugitive emissions and identification of the substances that may be present in such emissions must be provided, mentioning as well as the existence of nearby villages.

This table should be provided:

Emission source		Pollutant	Nearby villages affected by the source
No.	Description		

⁹ Here by “internal” it is meant that the monitoring and control is done by the operator of the installation, and “external” means that this task is performed by an external company.



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- Estimation or calculation of fugitive emissions arising from the installation, expressed as a mass flow for each pollutant, describing the procedure of estimation / calculation used to obtain the quantities. If the estimate is made from real measurements, the relevant certificate and an analytical plan in which sampling points are defined must be attached.
- Note : International EFs (emission factors) are available.
- **NOTE:** Attach a location map of emission sources and an elevation drawing of them.

Comentario [Cesar2]: to be commented in training

6.2. Noise emissions to the surroundings of the installation (emissions within the installation are excluded):

- If available, certificate of exemption from the control of noise emissions.
- If not, description of the main sources, including:
 - Description of the type of activity, existing or planned the production process, equipment and machinery that are expected to be used, location of the installation and the description of the surrounding area.
 - Description of the scheduling of activities and those of main and subsidiary operations within the installation, specifying the temporal characteristics of activities, such as the possible seasonal nature, duration during the day and night and if that period is continuous or discontinuous, the operating frequency, the possibility/need during the year that doors or windows are open, simultaneous sound sources, etc.

This table should be provided:

Description of the scheduling of activities			
Activity	Season	Duration during the day and night	Frequency



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- Description of noise sources related to the activity, their location and the characterization of each noise. It will include the indication of the data related to acoustic power of the different noise sources or, if not available, sound pressure levels, presence of an impulsive and tonal component, and, if necessary, the directionality of each source. In situations of uncertainty on project type or location of sound sources to install, emission levels should be estimated by analogy with those from similar sources.

This table should be provided:

Identification and description of noise sources						
Identification of noise sources	Description	Location	Characterization of noise	Frequency	Sound Power or Sound Pressure	...



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- Identification and description of receivers (eg hospitals, schools, homes, parks, etc.) present in the surrounding area, with details of their relevant characteristics in terms of noise (eg intended use, height, distance from the installation or activities planned, etc.).

This table should be provided:

Identification and description of receivers				
Receiver	Intended use	Height	Distance	.....
Receiver 1	Hospital	.....	.....	.....
Receiver 2	School	.....	.....	.....
Receiver 3	Homes	.....	.....	.....
Receiver 4	Park	.....	.....	.....

Note :Noise issues must be conditioned as specified in the laws of the Turkey.

For existing installations they must attach the noise assessment report. At new installations or substantial changes, operators must provide estimations about how much the noise could increase when the new installation or change in the installation takes place.

6.3. Wastewater discharges:

- Description of the Waste Water Flows: A summary list of flows (including process, sanitary and rain waters), together with maps, drawings and supporting documentation should be included. For each of the flows the following information should be provided:
 - Industrial wastewaters: details of all emission sources of industrial waste waters¹⁰ and emissions points from them to the receiving medium (inland and sea surface water) or to the public sewage system with the industrial waste water (pre)treatment plant data should be provided.

¹⁰In case of cooling systems (direct cooling, indirect cooling, open/close loops), description and supporting documentation (like the list of substances used in cooling waters in an existing installation, and heat discharge calculation sheets) should be also provided.



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- Sanitary Waters: details of all emission sources of sanitary waste waters and emissions points from them to the sewage system with external or internal waste water treatment plant data should be provided.
- Rainwater discharges: details of all emission sources of rainwater (rainwater drainage) and emissions points from them to the receiving media should be provided.
- Other discharges: a detailed overview and a summary of emissions into ground (land spreading) should be provided. An assessment of waste water discharge into the ground from existing or planned waste water discharges should be provided and it should include at least the following information: amount of water per day/per year, way of discharging (filtration, land spreading), protection of groundwater – description of the geology, hydrogeology, meteorological conditions, location of discharging, distance to drinking water zones, ...

This table should be provided:



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1. Data for the discharge					
Discharge name		code			
U.T.M. coordinates		X:		Y:	
Municipal/region name		code		Parcel No:	
2. General data					
Discharge into:					
Public sewage (y/n)		Sewage with WWT (y/n)		WWT name	
Sewage network		Sewage with WWT (y/n)		WWT name	
Inland or sea surface water (y/n)		Surface water name			
Other		External professional opinion by institute enclosed (y/n)			
		description			
3. Volume flow, amount and type of waste water for particular stream which is conducted on that discharge					
Kind of stream: industrial, sanitary and rainwater on that discharge					
Stream code	X1	X2	X3	X4	
Waste water type (industrial, sanitary, rainwater)					
Max. 6 hours average volume flow (l/s)					
Max. amount per day (m ³ /day)					
Max. annual amount (m ³ /a)					
actual annual amount (m ³)					
Type of discharging:					
Total area collecting rainwater (m ²)					



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- Requirements and technical conditions of the discharging points: Detailed description of the existing sampling points within the installation, for each of the wastewater flows. Besides, the following information about existing wastewater depuration systems shall be provided:
 - Industrial Waters: Detailed description of the industrial WWT plant or other depuration systems. For each industrial WWT plant the operational procedure should exist together with operational records. The operational procedures should include at least the following information:
 - WWT plant operator.
 - Information regarding the input specific substances/pollutants.
 - Treatment techniques; Pollution reduction %.
 - Average emission value after (pre)treatment: Normal operation (Kg/tonnes product)/ Abnormal operation (start-up, etc).
 - WWT plant operational data (technology/process description, WWT plant efficiency).
 - Management of sludges (solid or liquid) after treatment.
 - Operational and maintenance procedure.
 - Procedure for the control together with monitoring system.
 - Corrective actions in case of accidents (incidents) together with start-ups and WWT plant interruptions.
 - Maintenance and preparation procedure of operational records.

This table should be provided:

WWT operator ¹¹	Treatment techniques of the industrial WWT ¹² :				
	Specific substances input	Average EVLs after treatment at normal condition, kg/tonnes	Average EVLs after treatment at abnormal condition, kg/tonnes	WWT efficiency, %	Sludges (liq./sol.), kg
WWT control status of monitoring system					
Continuous measurement			Discontinuous measurement (key parameters)		
pH			COD		
T			Heavy metals		

¹¹ It can be the same operator as the one of the installation that discharges the wastewaters, or a different one, for example it may be a different operator in Organised Industrial Zones.

¹² Examples: mechanical treatment, chemical treatment, biological treatment



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Waterflow, m ³		other ¹³	
Accident/incident: (examples : malfunction of the chemical or biological treatment, unexpected events like filtration from wastewater tanks, breakdown of some of the equipment...)			
Corrective action:			
Maintenance:			
Date/Location/Signature:			

- Sanitary Waters: detailed description of the sanitary WWT plant and all techniques for pollution prevention should be described.
- Rainwaters: description of all the buffer measures implemented to contain rainwaters.
- Other discharges: detailed description of the decentralised or centralised (on-site or off-site) treatment facilities or other depuration systems and all techniques for pollution prevention should be described.

NOTE: Attach a plan of the water lines of the installation and discharge points.

- Plan for Monitoring and Control: It will contain the following data: Emission point, pollutants, sampling, control and data collection, transmission and registration system. The plan may be in any case subject to the modifications considered relevant by the Competent Authority.

¹³ Include at least all those which are established as compulsory for your kind of installation in the national legislation.



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This table should be provided:

Discharging point	Pollutant/s	Monitoring and Control				
		No.sample	Internal/ External ¹⁴	Frequency (hourly, daily...)	Description	Reports

Reports should be available about the water body that receives the discharges of treated wastewater. Physical, chemical and biological parameters of the receiving water bodies of the effluent from the facility (upstream and downstream of the discharge point).

The environmental quality of the receiving environment must be known.

These points will be reported by the corresponding competent authorities.

In Valencia a report from the manager of the treatment plant where the facility is connected is required, and for existing installations a certificate of connection to the sewage system is required too.

6.4. Waste:

6.4.1. Hazardous waste (including waste oils):

6.4.1.1. Waste production:

- Waste characterization: Detailed description of the activities (related to the production processes or to other activities not related to production processes) where the hazardous waste is generated. Information related to classification, labelling and storage of hazardous waste should be provided.
- Storage conditions: Description of key features of storage (area, height, type of floor, presence of isolating covers, spill prevention devices).

This table should be provided:

European Waste Catalogue ¹⁵	Description of the activity	Quantity	Unit (kg, g...)	Storage system

¹⁴ Here by "internal" it is meant that the monitoring and control is done by the operator of the installation, and "external" means that this task is performed by an external company.

¹⁵ See Annex 7 of the By-Law 25755, published in the Official Gazette on the 14/03/2005, on Hazardous Waste Control



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- Plan for the minimization of waste. A detailed description of the plan prepared to minimize hazardous waste generated per product unit in production processes. The plan may be in any case subject to the modifications considered relevant by the Competent Authority.

6.4.1.2. Waste management:

- Offsite transfer to authorised waste operators: identification of the transfer and shipment notification of hazardous waste should be provided.
- In-site treatment of waste: describe in detail treatment given to each waste, quantities treated. Include a detailed map showing the areas related to the treatment given to each type of waste. Measures to handle waste to mitigate the risks to human health and the environment should be provided.

This table should be provided:

European Waste Catalogue	Description	Quantity	Unit	Treatment operations ¹⁶

¹⁶ Any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage, or reduced in volume.



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- Admission procedure for waste: description of the procedure for admission of waste should be provided including the way that the operator implements the following aspects:
 1. Check of the documentation (approval of the vehicle, monitoring and control document fill-in...).
 2. Weight and register of the load (weighing, date and time of arrival, waste origin, type of waste, waste vessel...).
 3. Visual inspection.
 4. Characterization and / or periodic sampling of the waste.
 5. Notification to the Competent Authority in the absence of waste acceptance.
- Treatment operations: description of the treatment operations including the following aspect:
 1. A flow chart of treatment operations.
 2. The techniques¹⁷ used for the treatment operations.
 3. The quantity of materials recovered.
 4. Any energy recovery (mode, use, quantity).
 5. Nominal capacity of the system (kg / h).
 6. Current capacity of the system (kg / h).
 7. Number of daily hours of operation.
 8. Number of days in a year.

This table should be provided in the case that there are co-incineration facilities:

¹⁷ A comparison of the techniques used with respect to the BATs included in the BAT Conclusion documents approved by the European Commission should be provided.



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Treatment operations					
Quantity of material recovered (ton/g)	Type and quantities of energy recovery (Kwt/h) or (Kwe/h)	Nominal capacity of the system (kg / h)	Current capacity of the system (kg / h)	Number of daily hours of operation (h)	Days in a year

- Technical requirements for disposal: describe in a detailed manner the activities that will be carried out for the final disposal of the rejected materials resulting from the treatment operations.

6.4.2. Non-hazardous waste:

6.4.2.1. Waste production:

- Waste characterization: Detailed description of the activities (related to the production processes or to other activities not related to production processes) where the non hazardous waste is generated.

This table should be provided:

European Waste Catalogue	Description	Quantity	Unit

6.4.3. Packaging waste:

6.4.3.1. Waste production:



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- Waste characterization: Detailed description of the packaging waste generate (related to the production processes).

This table should be provided:

European Waste Catalogue	Description	Quantity	Unit

- Plan for the minimization of waste: A detailed description of the plan prepared to minimize¹⁸ packaging waste generated in production processes. The plan may be in any case subject to the modifications considered relevant by the Competent Authority.

NOTE: Attach a map indicating the points where waste is generated and where it is stored.

6.5. Soil and groundwater protection:

- Requirements and Technical Conditions:
 - Safety measures for storage: Detailed list of all storage tanks and other storage should be indicated (see the following table) as follows:
 - Reference number, location/code.
 - Content (chemical substances, products and/or by-products).
 - Type (underground, on the ground, indoors) and size.
 - Age.
 - Location on site.
 - Distance from sewer – enclosed a map.
 - Date of last check/test made by competent laboratory.
 - Technical check-up, prevention techniques, Best Available Techniques (BAT).
 - Other requirements derived from the By-Law 27605, published in the Official Gazette on the 08/06/2010 on soil pollution.

This table should be provided:

Storage tanks with description

¹⁸ Minimization means reducing the material amount of the packaging waste in (quantitative prevention) and the harm that these materials can cause in the environment (qualitative prevention).



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Tank code ¹⁹	Tank volume (m3)	Content	Age of tank	Date of last check/ test	Prevention techniques	Type: underground/ on the ground tank

- Systems of drainage or collection of potentially polluted waters: A detailed description concerning maps, drawings of systems of drainage or collection of potentially polluted waters should be provided by the operator of the installation.

6.6. Operation under not normal conditions:

- o Description of the operation modes different from the normal operation (start-up and shut-down operations, leaks, malfunctions, momentary stoppages, definitive cessation of operations, etc) and of the situations which cause them.
- o Expected emissions under those circumstances (pollutants and concentrations).
- o Expected percentage of operation under those circumstances (hours/year).
- o Special measures planned to be followed under those circumstances and goals to be achieved by taking those measures.
- o Systems for the monitoring and control of parameters under those circumstances.
- o Description of the operation under emergency situations.
- o Measures previewed to be taken upon definite cessation of activities to avoid any risk of pollution and return the site of operation to the state defined in the baseline report (the baseline report is defined below, in subsection III.vi)

¹⁹ Identification code according to the plant design



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ANNEXES TO THE PROJECT REPORT

Annex 1. - Future actions in the company in order to minimize the environmental impact of its activities and / or adapt to the new legal requirements.

For example: improvements in water consumptions, improvements in plant's wastewater treatment, improvements in energy consumptions It includes also those investments which are expected to be done and which are not a consequence of a legal requirement stated in national legislation.

Annex 2. - BATs. / Best environmental practices (BEPs).

A listing of BATs implemented. Summary of each indicating what environmental improvement related to the BAT was achieved when it was implemented. List first the BATs which are general for the whole installation, and afterwards the ones which are specific for particular processes, following the categorization shown below.

Indicate as well, in each of the categories below, any Best Environmental Practices (BEPs) carried out (BEPs are those actions which are not BAT but which contribute to the reduction of the environmental impact of the installation).



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A. – Related to Management.

1. Education and environmental training to employees.
2. Equipment maintenance.
3. Handling of chemical substances.
4. Automation of the cuisine of colors and the different dosing equipment.
5. Provision of information concerning the items and matters raw material in general.

Example: Handling of chemical substances

BATs/ BEPBs	Is BAT? Yes/no	Environmental improvement	Is in place? If not , what is the date of implementation ?
<i>To select chemicals according to their impacts on water and air</i>	YES		YES

B. Related to the use of chemicals

1. Replacement or disposal of chemicals used throughout the textile chain, other environmentally sustainable.
2. Optimize the process conditions to promote appropriate chemical reactions and thus achieve higher performance of the products used.
3. Printing.
4. Finishing.

Example: Replacement or disposal of chemicals used throughout the textile chain, other environmentally sustainable.

BATs BEPs	Is BATs ? Yes/no	Environmental improvement	Is in place? If not , what is the date of implementation
<i>Surface active agents (Surfactants)</i>			
<i>To substitute alkylphenol ethoxylates and hazardous surfactants with substitutes</i>	YES	<i>Improve the treatability of</i>	YES



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<i>biodegradable or bioeliminable in WWTP and do not form toxic metabolites</i>		<i>waste water</i>	
<i>For complexing agents</i>			
<i>To soften clean water in order to remove from the process water iron and alkaline earth cations leading up to water hardness</i>	YES	<i>To avoid potential wear-out and holes in the fabric</i>	YES
<i>To apply hydrogen peroxide under the optimally controlled conditions</i>	YES	<i>Saving hydrogen peroxide by more than 50%</i>	NO
<i>To reduce antifoaming agents</i>			
<i>To use bath-less air jets, where the liquor is not agitated by fabric rotation</i>	YES	<i>To avoid floating resulting from liquor circulation Reduce the water consumption</i>	<i>Use antifoaming chemicals in the dyeing processes and eliminate the foaming problem by means of operational settings</i>
<i>To reuse the process liquor</i>	YES	<i>To reduce the water consumption</i>	<i>In process</i>
<i>To select anti-foaming agents free from minerals oils</i>	YES	<i>To lessen the hydrocarbon load in waste water</i>	YES

C. - Related to selection of raw materials.

1. Selection of raw materials .

Example: Selection of chemicals fibers.

BATs BEPs	Is BATs ? Yes/no	Environmental improvement	Is in place? If not , what is the date of implementation
<i>Select material treated with low-emission and biodegradable /bioeliminable preparation agents</i>	YES	<i>Water saving in washing, lessen the odor problem, reduce VOCs</i>	YES



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D. Concerning water and energy management.

1. Monitor water & energy consumption in the various processes.
2. Install flow control devices and automatic stop valves on continuous machinery.
3. Install automatic controller for control of fill volume and liquor temperature in batch machines.
4. Establish well-documented production procedures in order to avoid wastage of resources from inappropriate work practices.
5. Optimise scheduling in production and adjust processes in pretreatment to quality requirements in downstream processes.
6. Investigate the possibility of combining different treatments in one single step.
7. Install low-and ultra-low liquor ratio machinery in batch processes.
8. Introduce low add-on application techniques in continuous processes.
9. Improve washing efficiency in both batch and continuous processing.
10. Re-use cooling water as process water.
11. Investigate possibilities for water re-use and recycling.
12. Fit hood and covers ensuring full closure of machinery that could give rise to vapour losses.
13. Insulate pipes, valves, tanks, machines to minimize heat losses.
14. Optimise boiler houses by applying re-use of condensed water, preheating of air supply, heat recovery from combustion gases.
15. Segregate hot and cold waste water streams prior to heat recovery and recover heat from hot stream.
16. Install hot recovery systems for off-gases.
17. Install frequency-controlled electric motors.

BATs BEPs	Is BATs ? Yes/no	Environmental improvement	Is in place? If not , what is the date of implementation
<i>Install flow control devices and automatic stop valves on continuous machinery</i>	YES	<i>Decrease in water consumption</i>	YES
<i>To mount automatic control devices to keep the volume and bath temperature under control in shrinking machines</i>	YES	<i>Cost saving, reduction in water consumption and spill</i>	YES
<i>To establish well-documented production processes</i>	YES	<i>Savings in water and energy consumption</i>	<i>YES in some processes like dyeing</i>
<i>To optimize programming in production and adjust pretreatment processes according to the quality needs of the subsequent processes</i>	YES	<i>Cost saving, reduction in water consumption and energy</i>	YES



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To seek possibilities of putting different processes together in one step	YES	Reduce water and energy consumption, reduce the number of chemical discharges	YES, desizing+bleaching Bleaching+fluorescent whitening
To use low and ultra-low ration machines in shrinking processes.	YES	Less energy demand	In process
To improve the activity of washing in both shrinking and continuous processes	YES	Water and energy saving	YES
To use covers/doors which enable machines to be completely closed to prevent steam loss	YES	Saving in consumption chemicals, clean water and energy. Reduce solid waste and pollution load in wastewater and waste gas	YES

E. Concerning waste management.

1. To collect unavoidable solid waste separately.
2. To use high-volume and recyclable containers for waste.

BATs BEPs	Is BATs ? Yes/no	Environmental improvement	Is in place? If not , what is the date of implementation
To collect unavoidable solid waste separately.	YES	Saving in the cost of solid waste disposal, improve compliance with the relevant laws.	YES
To use high-volume and recyclable containers for waste.	YES	Minimization of wastes	YES

F. BATs for specific operations.

1. BATs for Pretreatment (desizing, bleaching, mercerizing).
2. BATs for Dyeing.
3. BATs for Printing.
4. BATs for Washing.



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BATs BEPs	Is BATs ? Yes/no	Environmental improvement	Is in place? If not , what is the date of implementation
<i>Removal of Knit oils from fabrics</i>			
<i>To remove the non-water soluble oils using organic solvent washing</i>	YES	<i>To save water and energy. To reduce organic load in waste air</i>	YES
<i>Desizing</i>			
<i>To follow the oxidative way when the resource of raw material cannot be checked</i>	YES	<i>Water, energy and chemical saving</i>	YES
<i>To combine desizing and bleaching in one single step</i>	YES	<i>Reduce water and energy consumption</i>	YES
<i>Dyeing</i>			
<i>To use automatic systems for dosing and distributing the dyes</i>	YES	<i>To minimize liquor surplus</i>	YES
<i>Printing</i>			
<i>To lessen losses of printing paste in the rotary screen printing</i>	YES	<i>Reduce waste load</i>	NO
<i>To use digital ink-jet printing machines for short-length productions of flat fabrics.</i>	YES	<i>To minimize dyestuffs, paste and water</i>	YES
<i>Finishing</i>			
<i>To minimize energy consumption in stenters by: mechanical preheating</i>	YES	<i>Reduce energy generation related emissions, save energy</i>	YES
<i>To apply softeners in padding machines or spray or foam applications</i>	YES	<i>Water, energy and chemical saving</i>	YES
<i>Washing</i>			
<i>To use drain and fill method or "smart rinsing" methods</i>	YES	<i>Reducing in water consumption</i>	YES
<i>To apply softeners in padding machines or spray or foam applications</i>	YES	<i>Water, energy and chemical saving</i>	YES

G. BATs for waste water treatment and sludge disposal.

1. Treatment of textile waste water in activated sludge system with low food-to-microorganisms ratio (F/M).
2. Treatment of selected and segregated, non-biodegradable waste water stream by chemical oxidation.



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3. Waste water treatment by flocculation/precipitation and incineration of the resulting sludge.

4. Anaerobic removal of residual dyestuff from padding liquors and printing paste residues.

BATs BEPs	Is BATs ? Yes/no	Environmental improvement	Is in place? If not , what is the date of implementation

OTHER DOCUMENTATION DIFFERENT FROM THE PROJECT REPORT

- i. **Submission of an Environmental Impact Assessment (EIA) Report according to the legislation on the environmental impact assessment to the Competent Authority and after its acceptance preparation of the EIA report and project presentation file**(if applicable to the installation, taking into account if it is a new or existing installation). The report is the one mentioned in article 11 of the EIA By-Law 26939.
- ii. **A report from the competent administration responsible of development plans and landscape planning in which the site for the installation is located, evidencing compatibility of the project with urban planning provisions.** If the applicant applied for such report to that competent administration and no report is provided within 40 working days, that report shall be replaced by the applicant with a copy of the application for the report. In any case, if the urban report is negative, the Competent Authority will bring the permit procedure to an end.
- iii. **A report from the Competent Authority on control of major-accident hazards involving dangerous substances, classifying the activity according to the legislation.**
- iv. **Identification of the information which the applicant deems to be confidential under the provisions in force.** When assessing this point, the applicant should take into account that the application will be submitted to public information during 15 working days, plus the legislation applicable.
- v. **Any other documentation evidencing compliance with the requirements under the applicable environmental legislation on obligatory security or insurance²⁰.**

²⁰ We should take care that this part is compatible with the final version of the By-Law.



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vi. Any other documentation evidencing compliance with the requirements under the applicable environmental legislation.

vii. Any other documents required by the Competent Authority.

E.g. the installation could affect an artistic or cultural heritage, and maybe a report from the competent authority is needed.

viii. Where the activity involves the use, production or release of relevant hazardous substances and having regard to the possibility of soil and groundwater contamination at the site of the installation, the operator shall prepare and submit to the Competent Authority with the application a baseline report or before a permit for an installation is updated for the first time. The baseline report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for under Article 29.2(site closure). The baseline report shall contain at least the following information:

- A. information on the present use and, where available, on past uses of the site;
- B. information on soil and groundwater measurements that reflect the state at the time the report is drawn up having regard to the possibility of soil and groundwater contamination by those hazardous substances to be used, produced or released by the installation concerned.
- C. Plan for monitoring and control of survey of the state of soil and groundwater contamination.

In any case it should be indicated whether there is any soil analysis available. If so, indicate the parameters discussed in the report and their analytical values.

Indicate as well if the risk index of soil contamination has been made or assessed.

ix. The application for an Integrated Environmental Permit shall be accompanied by a non-technical summary of the details specified in the foregoing paragraphs, to enable their comprehension in the public information period. Concerning this report there is no maximum size.

ANNEX I. CHECK-LISTS TO BE USED IN THE ASSESSMENT OF THE PERMIT APPLICATION

CONTENTS OF THE PERMIT APPLICATION FILE					
			DESCRIPTION	CHECK	
PROJECT REPORT	Owner of the company		Name of the company	1	<input type="checkbox"/>
			Full address	2	<input type="checkbox"/>
			VAT number	3	<input type="checkbox"/>
			Main activity	4	<input type="checkbox"/>
	Operator (if is different from the owner)		Name of the company	5	<input type="checkbox"/>
			Data of the contact person (in each work centre)	6	<input type="checkbox"/>
			Full address	7	<input type="checkbox"/>
			VAT number	8	<input type="checkbox"/>
			Main activity	9	<input type="checkbox"/>
	Description of the installation and technical characteristics		Number of work centres	10	<input type="checkbox"/>
			Register number of industrial establishments	11	<input type="checkbox"/>
			National Classification of Economic Activities (NACE)	12	<input type="checkbox"/>
			Total number of workers	13	<input type="checkbox"/>
			Investments targeted to environmental improvements.	14	<input type="checkbox"/>
			Organization chart	15	<input type="checkbox"/>
			UTM coordinates	16	<input type="checkbox"/>
			Activity of Annex I of the By Law	17	<input type="checkbox"/>
			Main activity and others	18	<input type="checkbox"/>
			Nominal production/treatment capacity and size	19	<input type="checkbox"/>
			Planned date for commencing and completion of building activities (for new installations)	20	<input type="checkbox"/>
			Planned date for starting operation (for new installations)	21	<input type="checkbox"/>
			Operational time of the installation	22	<input type="checkbox"/>
	Description of the production process		Production process description, with a schematic flow chart divided into phases.	23	<input type="checkbox"/>
			Description of the phases	24	<input type="checkbox"/>
			Operational hours in each phase	25	<input type="checkbox"/>
			The methods of operation (continuous or discontinuous)	26	<input type="checkbox"/>
			Description of the equipment and the techniques used, specifying which of them are considered as Best Available Techniques (BAT)	27	<input type="checkbox"/>
Detailed description of the natural resources, raw and auxiliary materials and products		Energy consumption: use of fuel for heat and steam generation and for transport inside the enterprise not including use of fuel for production of electricity or combined power and heat, use of heat and steam from external suppliers, use of electricity, use of fuel for production of electricity and heat -power plants and boiler houses. Measures to increase energy efficiency.	28	<input type="checkbox"/>	
		Water: quantity of water used in the process, intake of surface, ground and marine water –detailed description of intake, and indication of the cases of supply of water from outside or re-circulated	29	<input type="checkbox"/>	
		Raw materials: list and quantities of raw materials, indicating hazardous or non-hazardous character	30	<input type="checkbox"/>	
		Auxiliary materials: list and quantities of auxiliary materials, indicating hazardous or non-hazardous character	31	<input type="checkbox"/>	
		Products and by-products: list of output products and by-products, types and quantity generated of each of them, per hour, day or year.	32	<input type="checkbox"/>	
PROJECT REPORT	Air quality		Modelization requirements	33	<input type="checkbox"/>
			Plan for monitoring of immisions	34	<input type="checkbox"/>
	Air: Channelled		Description of the emission points	35	<input type="checkbox"/>
			Requirements and technical conditions of the focus (including operational hours)	36	<input type="checkbox"/>
			Gaseous effluents generated (air flow, temperature and pollutants emitted and their amounts)	37	<input type="checkbox"/>

CONTENTS OF THE PERMIT APPLICATION FILE						
F	DESCRIPTION				CHECK	
Environmental emissions and controls	emissions:		Abatement equipment, specifying which ones are BAT	38	<input type="checkbox"/>	
			Plan for Monitoring and Control	39	<input type="checkbox"/>	
	Air: Non channelled emissions		Description of the emission points	40	<input type="checkbox"/>	
			Pollutants emitted	41	<input type="checkbox"/>	
			Abatement equipment, specifying which ones are BAT	42	<input type="checkbox"/>	
			Plan for Monitoring and Control	43	<input type="checkbox"/>	
	Noise		Description of sources (location and characterization)	44	<input type="checkbox"/>	
			Acoustic study	45	<input type="checkbox"/>	
			Abatement measures, specifying which ones are BAT	46	<input type="checkbox"/>	
			Plan for Monitoring and Control	47	<input type="checkbox"/>	
	Waste water		Description of the flow (including discharging points) and the associated process (industrial, sanitary, rainwater or other discharges)	48	<input type="checkbox"/>	
			Requirements and technical conditions of discharging points	49	<input type="checkbox"/>	
			Description of pollutants and emitted amounts	50	<input type="checkbox"/>	
			WWTP (specifying BAT)	51	<input type="checkbox"/>	
			Monitoring and control (sampling points)	52	<input type="checkbox"/>	
	Hazardous waste		Production (amounts) and characterization (classification according EWC and labelling)	53	<input type="checkbox"/>	
			Storage conditions	54	<input type="checkbox"/>	
			Prevention on pollution measures (specifying BAT)	55	<input type="checkbox"/>	
			Waste management (inside/offside treatment)	56	<input type="checkbox"/>	
			Plan for minimization of waste	57	<input type="checkbox"/>	
	Non hazardous waste		Characterization (classification, amounts and labelling)	58	<input type="checkbox"/>	
			Prevention on pollution measures (specifying BAT)	59	<input type="checkbox"/>	
			Waste management (inside/offside treatment)	60	<input type="checkbox"/>	
	Packaging waste		Characterization	61	<input type="checkbox"/>	
			Plan for minimization of waste	62	<input type="checkbox"/>	
	Soil and groundwater protection		Safety measures for storage, specifying BAT	63	<input type="checkbox"/>	
			Systems of drainage or collection of potentially polluted waters.	64	<input type="checkbox"/>	
			Plan for monitoring and control	65	<input type="checkbox"/>	
	Not normal operation conditions		Situations when not normal operation will take place. Characterization	66	<input type="checkbox"/>	
			Measures which will be taken to minimize environmental impact in these not normal conditions	67	<input type="checkbox"/>	
			Description of operation under emergency situations	68	<input type="checkbox"/>	
			Measures to be taken upon definite cessation of activities	69	<input type="checkbox"/>	
ADDITIONAL INFORMATION	Non-technical summary of the details specified in the foregoing paragraphs			70	<input type="checkbox"/>	
	Environmental Impact Assessment (EIA) Report (for new installations, article 11 By Law 26939)			71	<input type="checkbox"/>	
	Development plans and landscape planning report			72	<input type="checkbox"/>	
	SEVESO report (classification of the installation according to applicable legislation on control of major-accident hazards involving dangerous substances)			73	<input type="checkbox"/>	
	Identification of the information which the applicant deems to be confidential under the provisions in force			74	<input type="checkbox"/>	
	Any other documentation evidencing compliance with the requirements under the applicable environmental legislation including, where applicable, the legislation on obligatory security or insurance required under the applicable environmental legislation			75	<input type="checkbox"/>	
	The baseline report, that shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities			76	<input type="checkbox"/>	
	Receipt of the fees paid by the operator			77	<input type="checkbox"/>	

BREF SECTIONS TO BE TAKEN INTO ACCOUNT TO ESTABLISH THE PERMIT'S CONDITIONS, AND CORRESPONDENCES WITH THE BATs MENTIONED IN THE COMMUNICATION 28142 OF THE MINISTRY OF ENVIRONMENT AND URBANISM

The sections indicated below in the middle column correspond by default to the BREF Document for Textile Industry. Where there is reference to other relevant BREF Documents, their name is explicitly indicated. The last column shows the sections in the “Communication 28142 on integrated pollution prevention and control in the textile industry” which are related to the subjects mentioned in the first column. For some operations, there are techniques in the decree which are not included in the BREF.

SUBJECT		BREF SECTION	MoEU's Communication 28142
Generic BAT for the whole sector			
1	Management	4.1.1, 4.1.2?, 5.1	Sections A.1 and A.2
2	Use of chemicals	4.1.3, 5.1	Sections A.2.2.3–A.2.2.5, B.2.19, B.2.8, B.2.13.1, B.2.16.2
3	Selection of raw materials	4.3, 5.1	A.3
4	Water and energy management	4.1.4, 4.1.5, 5.1	Sections B.2.20.2,, B.2.2.3, B.2.20, A.4
5	Waste management	5.1	A.1 and F
BATs for specific operations			
6	Pretreatment	4.5, 5.2.2	Section B.2.1, B.2.2, B.2.3, B.2.4
7	Dyeing	4.6, 5.2.2	Section B.2.5, B.2.6, B.2.7, B.2.8, B.2.9, B.2.10, B.2.11, B.2.12 C.1
8	Printing	4.7, 5.2.2	Section B.2.13, B.2.14, B.2.15
9	Finishing	4.8, 5.2.2	Section B.2.16, B.2.17, B.2.18, B.2.19 C.2,C.3 and C.4
10	Washing	4.9, 5.2.2	Section B.2.20
11	Wool scouring	4.4, 5.2.1	Section B.1 and C.4.9
12	Use of less hazardous chemicals in pretreatment, dyeing, finishing, printing, washing	4.1.3, 5.1	Section A.2.2
13	Waste water treatment and sludge disposal	4.10, 5.3	Section D.2, D.5.4, D.7.3, D.3
HORIZONTAL ISSUES			
14	Emission monitoring and reporting	BREF on General Principles of Monitoring, Chs. 2, 4, 5, 7, 8	Section E

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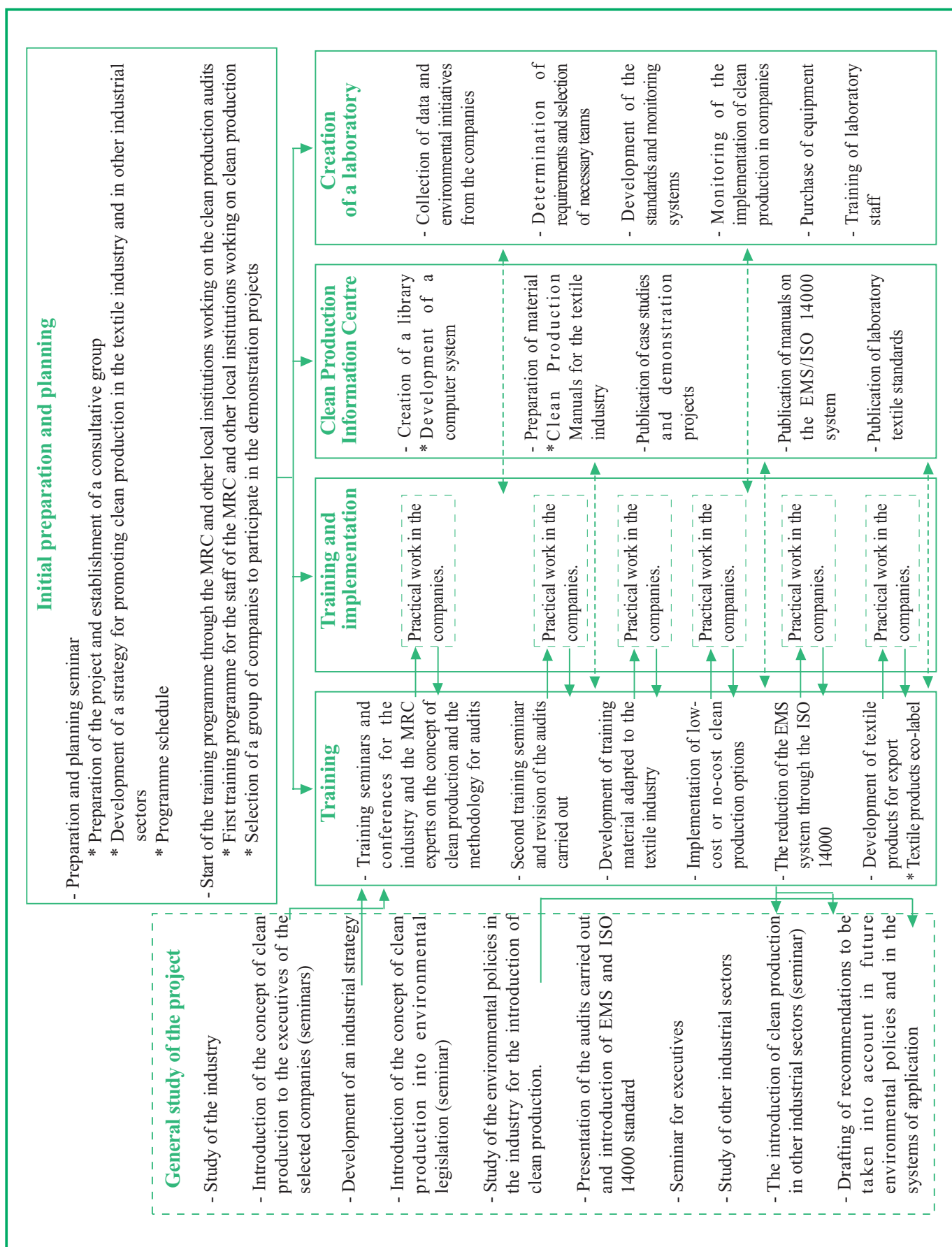


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No. 6 Examples of waste and admission minimisation initiatives

Promotion of clean production in the textile industry

Institution in charge	The Scientific and Technical Research Council of Turkey (TUBITAK) - Marmara Research Center
Project manager	Mr Akin Geveci (RAC/CP National Focal Point in Turkey)
Country	Turkey
Industrial sector	Textile industry
Summary of action	<p>In July 1997 a project was initiated for the promotion of clean production (CP) in the textile industry. The duration of the project was two years and its total cost USD2.6 million.</p> <p>The Danish Technological Institute (DTI) was chosen to act as a consultant to aid in the Marmara Research Centre (MRC) as an institutional training centre. This centre was to be entrusted with the task of carrying out training, collaborating in the projects and audits to be carried out and providing the management support necessary for the MRC to establish the principal mechanisms and services required to introduce Clean Production in the textile industry.</p> <p>For the diffusion of the concept of clean production and to convince entrepreneurs to invest in clean technology demonstration plants, it was necessary to study the economic and technical viability of these plants. To this end, the incorporation of a number of demonstration plants into the project was planned.</p> <p>Six textile companies were identified and selected for the application of clean production in their factories. Two textile experts from each selected company along with twelve experts from the MRC (a mixture of environmental and textile experts), i.e. a total of twenty-four experts, were assigned to the project. They were trained as clean production auditors and would carry out the training.</p> <p>The establishment of a Clean Production Information Centre in the MRC was also planned.</p> <p>The final objective of this project was the establishment of a National Clean Production Centre (NCPC), the principal aim of which would be the organisation of initiative on clean production in the country.</p>



NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.



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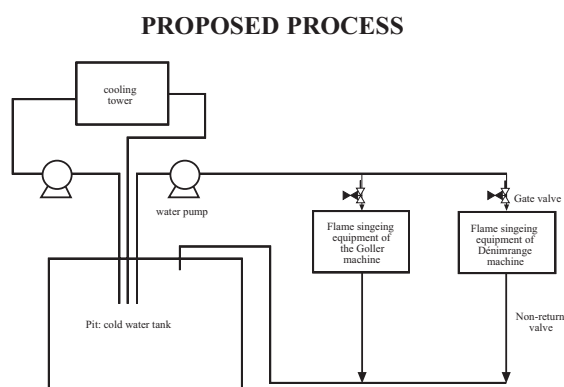
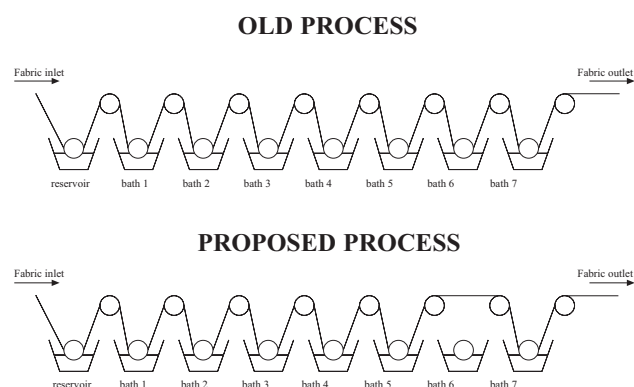
No. 10

Pollution prevention case studies

Cleaner production programme in a textile industry

Company	Société Industrielle de Textile - SITEX (Tunisia).
Industrial Sector	Textile industry. Production of Denim - Indigo fabrics.
Environmental considerations	Aware of the importance of Cleaner Production as a preventive measure for the protection of the environment, the CITET, the National Focal Point of the RAC/CP in Tunisia, carried out a pilot project on methods of rationalisation of production, optimisation of procedures and minimisation of waste with the aim of cutting back production costs, reducing the impact of the industrial activity on the environment and strengthening the competitiveness of the company. This project affected several industrial sectors including the textile industry, represented by the company SITEX.
Background	<p>The objectives sought by the cleaner production programme of SITEX were:</p> <ol style="list-style-type: none"> 1. To reduce water consumption at the fabric finishing stage. 2. To reduce the impact of the fabric dyeing process on the environment.
Summary of actions	<p>Three cleaner production options were identified:</p> <ol style="list-style-type: none"> 1. To reduce the consumption of water at the level of the rinsing procedure through the elimination of the basin and of rinsing bath no. 5 (diagram 1). Saving of 6 m³/h of softened water. This reduction was only possible after bringing the flow of rinsing water under control. 2. Recovery of the cooling water from the flame singeing of the Goller machine toward the Frigotol cooling basin (diagram 2). Saving of 3.3 m³/h of softened water. 3. Recovery of the cooling water from the flame singeing of the Dénimrange toward the Frigotol cooling basin. Saving of 4 m³/h of softened water.

Diagrams



Balances

	Option 1	Option 2	Option 3	Project
Reduction of the volume of wastewater	18,000 m ³ /y	10,000 m ³ /y	12,000 m	
Annual saving	29,000 USD/y	16,000 USD/y	19,000 USD/y	64,000 USD/y
Saving in consumption of power	843,000 th/y			
Annual saving	13,000 USD/y			13,000 USD/y
Saving in Chemicals for the treatment	32,8 t/y	18 t/y	22 t/yr	
Annual saving	11,000 USD/y	6,000 USD/y	7,000 USD/y	24,000 USD/y
Saving in machinery pieces				
Annual saving	9,000 USD/y			9,000 USD/y
Total annual savings	62,000 USD/y	22,000 USD/y	26,000 USD/y	110,000 USD/y
Investment	1,000 USD	2,000 USD	2,000 USD	5,000 USD
Payback period	Immediate	1 month	1 month	17 days

Conclusions

The options proposed allow considerable savings to be achieved in relation to consumption of water, power and chemical products used for wastewater treatment. At the same time, these minimisation options require a relatively low investment cost for which the recovery of the investment is immediate.

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No. 13

Pollution prevention case studies

Cleaner production in a textile industry

Company background

First Textile (Corlu - Turkey). First Textile produces knitted textile, yarn, fabric-dyed textile (cotton, PES and cotton/PES) and printed textile. Its production capacity is approximately 1600 t/year of knitted cotton, 4500 t/year of dyed textile, 800 t/year of yarn and fiber dyeing and 940 t/year of printed textile. The company is EKO-TEX-100 certified.

Industrial Sector

Textile industry.

Environmental considerations

The biggest problem in textile processes is the large quantity of water used. Water consumption can be up to 90 m³/kg of product. This situation increases the pollutant load of wastewater effluents. In addition to this, high losses of energy are observed and considerable amounts of emissions have to be managed.

Background

The company studied their processes and identified different cleaner production options. Some of the identified options are as follows:

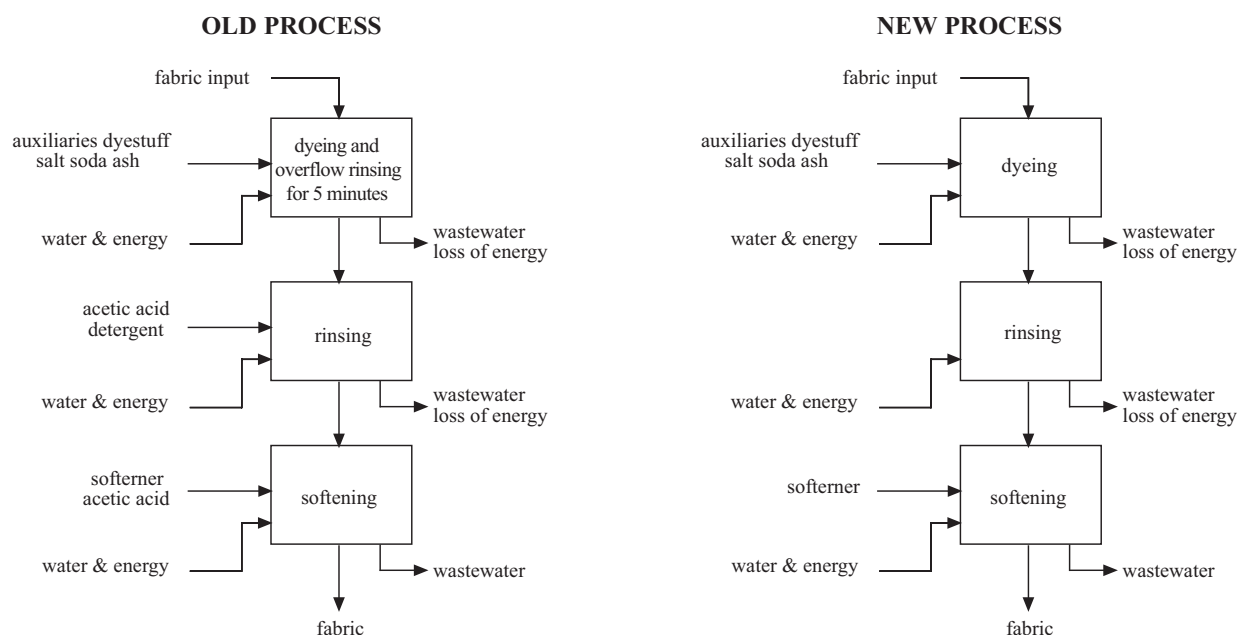
1. Heat recovery from stenters and wastewater.
2. Liquor ratio in bleaching and dyeing processes was 1:10. After the feasibility study, the ratio was reduced to 1:8.
3. Water savings and removal of some chemicals from bleaching and dyeing processes of cotton fabrics.
4. Water savings in the regeneration process of resins of process water preparation.

Summary of actions

After the feasibility study, some identified options were implemented. Specifically:

1. The company changed the recipe for cotton bleaching and dyeing processes by omitting overflow rinsing, as well as neutralisation stages and detergent usage.
2. The regeneration process of resins for the softening of raw process water was also optimised.
3. First Textile company established air-water heat exchangers at the end of the stenters to supply hot process water for certain dyeing recipes.

Diagrams



Balances

Option	Environmental Benefits	Cost (Investment+Operational)	Annual saving	Payback period
1	<ul style="list-style-type: none"> Reduction of water, energy and chemical consumption 	USD0	USD58,340-32,370	immediate
2	<ul style="list-style-type: none"> Reduction of water and salt consumption 	USD20,000	USD57,680	3 months
3	<ul style="list-style-type: none"> Reduction of steam and energy consumption Air pollution control 	USD328,820	USD513,000	1 year

Conclusions

The implemented cleaner production options, resulting from a previous diagnosis and feasibility study, led the company to a significant water conservation and also to the reduction of the pollutant load of wastewater that has to be treated. In addition to that, energy conservation is achieved by heat recovery from water of process. Also a significant reduction of the consumption of chemicals used in the process was achieved.

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No. 20

Pollution prevention case studies

Pollution prevention in the textile industry

Company background

El Nasr Spinning and Weaving Co., Dakahleya Spinning and Weaving Co., and Amir Tex Co., (Egypt) are three textile companies where an industrial audit was carried out to identify pollution prevention opportunities in the sulphur black dyeing process.

Industrial sector

Textile industry sector.

Environmental considerations

Sulphur black dyes are a method of producing a jet-black colour in cotton fibres, and must be converted to a water soluble form by adding a reducing agent, traditionally sodium sulphide, so that the dyes can be absorbed by the fibre. After dyeing the fabric, the dye is converted back to insoluble form with the addition of an oxidising agent, often acidified dichromates.

Both sodium sulphide and acidified dichromate are hazardous to handle, and their usage may leave harmful residues in the finished fabric and generate effluents that are difficult to treat.

Background

The audit carried out in the selected facilities approached cleaner production by proposing chemical substitution in order to reduce the identified environmental considerations at source. Therefore, an evaluation was undertaken to assess the feasibility, costs and quality of using various potential substitutes for sodium sulphide and acidified dichromates, and pilot trials were carried out to assess its reproducibility at production scale. In addition, process optimisation opportunities were also identified to achieve greater productivity and financial savings.

Summary of actions:

The following measures were put into practice:

1. Replacement of sodium sulphide and acidified dichromates.
It made the final effluent easier to treat and savings in wastewater treatment were achieved.
- Replacement of sodium sulphide in all three factories with glucose, which gives good depth of shade when used with sodium hydroxide and has a lower cost compared to other possible substitutes. In addition, elimination of free sulphur also avoids the past problem of tendering upon storage.
- Replacement of dichromate: in *El Nasr Spinning and Weaving Co.* dichromate was replaced with sodium perborate since it is an acceptable substitute and has a lower cost compared to others. In *Dakahleya Spinning and Weaving Co.*, and *Amir Tex Co.* hydrogen peroxide was preferred as it is particularly suitable for processed knitted fabrics (one of the main products of both companies).

2. Process optimisation:

- In *El Nasr Spinning and Weaving Co.* the desizing and scouring processes were combined and temperature in the soaping bath was reduced. Achievements were savings in steam (16%) and electricity (22%) and reduction of the processing time by 2 hours.
- In *Dakahleya Spinning and Weaving Co.* cold washes were used between the dyeing and oxidation steps, and two baths were eliminated: one cold wash after oxidation, and one hot wash after the soaping bath. As a result, steam, water and electricity costs were reduced by 38-39% and processing time was reduced from 13 hours to 8 hours thereby increasing production capacity.
- In *Amir Tex Co.* two cold washing steps (after the overflow washing) were eliminated, thereby reducing water consumption by 15%, and temperature and duration of the oxidation bath were reduced. Other savings were electricity (18%), steam (21%), water (15%), time and labour.

Balances

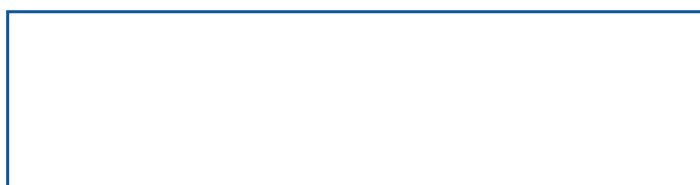
Options	Environmental benefits	Additional costs <i>Due to an increase in chemicals used cost (glucose)</i> €/tonne of processed fabric	Savings €/tonne of processed fabric	Payback period
Replacement of sodium sulphide and dichromates	<ul style="list-style-type: none"> • Reduction of toxic and hazardous wastes in wastewaters • Elimination of toxic and hazardous materials from the workplace 	<ul style="list-style-type: none"> • Nasr Spinning and Weaving Co: 23.82 • Dakahleya Spinning and Weaving Co: 3.57 	<ul style="list-style-type: none"> • Nasr Spinning. and Weaving Co: 91.23 • Dakahleya Spinning and Weaving Co: 118 • Amir Tex Co: 61.26 	Immediate
Process optimisation	<ul style="list-style-type: none"> • Reduction of water consumption and steam • Electricity savings 			

Conclusions

By means of the carrying out of an environmental audit and implementing the proposed pollution prevention opportunities, the three companies achieved economic savings and environmental benefits. In addition, due to process optimisation and replacement of sodium sulphide and dichromates other positive outcomes such as improvement in the fabric quality, improved production efficiency (by decreasing processing time), and increased productivity were also achieved. Buyer reaction to the quality of the fabric produced was also favourable.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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No. 21

Pollution prevention case studies

CP implementation in the textile sector

Company background	Pisa Tekstil ve Boya A.S. (Y. Bosna-Istanbul, Turkey).
Industrial sector	Textile sector, cotton sub-sector.
Environmental considerations	Although, on the one hand, the area where the facility is located is very convenient for its customers from the point of view of transportation (this is also convenient for the company, which works on commission), on the other hand, in addition to the fact that water consumption is very high in the textile sector, there is a water shortage problem in the area where the textile facility is located.
Background	<p>The environmental assessment carried out in the company evaluated the general water consumption of the plant and identified pollution prevention and energy and water conservation opportunities without high capital investment requirements. These opportunities can be summarised as follows:</p> <ul style="list-style-type: none"> • Heat recovery by vapour-liquid heat exchangers • Reduction in liquor ratio of dyeing baths • Reuse of treated wastewater • Possibilities of energy recovery from fabrics • Water conservation in the regeneration operation of the resins of water process preparation
Summary of actions	<p>After carrying out a feasibility study concerning technical, environmental and economic aspects, the following opportunities were found to be worth implementing:</p> <ol style="list-style-type: none"> 1. Reduction of the liquor ratio of dyeing baths from 1:7 to 1:4 2. Reuse of treated wastewater for the pre-washing of screens 3. Optimisation of the regeneration process of resins by controlling the hardness of the water. The company carries out a resins regeneration process that lasts 62 minutes although after 43 minutes the hardness of the water is almost zero. If the regeneration process is carried out in 43 minutes, not only a time reduction of 19 minutes can be achieved, but also savings of 3 m³ of water to regenerate the resins. If two regeneration processes are applied every day, 6 m³ of water are saved and money can be spared, since the cost of 1 m³ of process water including the cost of raw water, process water treatment, wastewater treatment and cost of discharge is 0.64 €/m³.

Balances

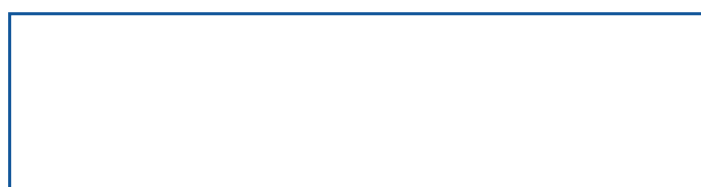
		Old process	New process	Savings
Inputs	Energy consumption (kWh/d)	880.2	877.2	3
	Consumption of chemicals (kg/d)	1,924	1,916	8
	Consumption of chemicals (€/d)	149	143.3	5.7
	Water consumption (m³/d)	1,800	1,794	6
	Water consumption (€/d)	929.6	925.5	4.1
Output	Chemicals (kg/d)	1,163	1,156	7
	Chemicals (€/d)	82.3	81.3	1
	Wastewater generation (€/d)	602.2	599.1	3.1
Environmental Benefits		<ul style="list-style-type: none"> • Energy conservation • Water conservation • Reduction of chemicals in wastewater treatment • Reduction in wastewater 		
Cost		Neither capital nor running investment is necessary		
Total Annual Saving		€2,007.5		
Payback period		Immediate		

Conclusions

By means of the application of the presented options, savings in water, energy and raw materials have been achieved and, in addition, a labour reduction of 0.36 €/d has also been possible. The steady tightening of environmental regulations and the successful application of CP options in the textile sector encourage the application of opportunities that, as this example shows, sometimes need no initial or running investment and generate economic savings.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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No. 34

Pollution prevention case studies

Combining preparatory processes. A low-cost high-productivity solution

Company background

Misr Beida Dyers Company is a public company in Kafr El-Dawar, Alexandria. The factory treats, dyes, prints and finishes cotton fabrics and cotton/synthetic blends; processes yarns; scours and dyes wool “tops” and produces absorbent cotton.

Giza Spinning, Weaving, Dyeing and Garments Co. is a private company located at Kafr Hakeim in Giza, Egypt. The factory processes and manufactures cotton and polyester/cotton garments, as well as finished fabrics.

Industrial sector

Textile industry.

Environmental considerations

Desizing, scouring and bleaching were undertaken as three separate steps in the preparatory stages for textile wet processing.

The warp threads were normally sized in order to increase their tensile strength and reduce fibre breakage during weaving; the size could then be removed thanks to desizing. Scouring, a process carried out to remove impurities that are present in cotton, was done with sodium hydroxide, which produced strongly alkaline effluents (around pH 12.5) with high organic loads.

Because of the use of sodium hypochlorite (a toxic and hazardous chemical) during the bleaching process, there was a strong odour of chlorine and worker safety concerns associated with its handling. Furthermore, there was high steam, energy and water consumption.

Background

Several pollution prevention opportunities were identified in the desizing, scouring and bleaching processes.

Summary of actions

The implemented cleaner production option consisted of adopting combined processing. In Misr Beida Dyers, several production trials were conducted to improve efficiency and combine the desizing and scouring process:

- Concentrations and rates at which chemicals were added were varied as well as the temperature, number and timing of washes.
- Two hot washes were eliminated from the half bleaching process.
- More expensive chemicals were phased out and replaced with ammonium persulphate and Egyptol.

In Giza Spinning and Weaving, through chemical substitution and process optimisation, it was possible to combine the scouring and bleaching processes and to phase out the use of sodium hypochlorite.

Stages were optimised for greater productivity and financial savings as outlined below:

- Two hot washes and one cold wash were eliminated from the half bleaching process.
- One hot wash, two cold washes and three flotation rinses were eliminated from the full bleaching process.
- Reuse of the bleaching bath for the optical brightening step in the full bleaching process.
- Hydrogen peroxide was used to substitute sodium hypochlorite.

Balances

Savings	Giza Spinning & Weaving		Misr Beida Dyers
	Half bleach	Full bleach	Half bleach
Cost of chemicals	(25%)	(14%)	(1%)
Water consumption	59%	61%	30%
Steam consumption	40%	15%	27%
Electricity consumption	53%	27%	19%
Cost of labour	53%	27%	19%
Processing time	4 hours	5 hours	2 hours
Savings in operating costs	€20,712.02		€20,555.70
Net benefit on increased production capacity	€23,177.97		
Total annual benefits	€64,445.7		

Note: figures in brackets indicate an increase in cost.

Conclusions

At Giza Spinning and Weaving, processing time has been considerably shortened in the half bleaching process and enabled production to be increased by 40%. Sodium hypochlorite has been phased out of the bleaching process. As a result, worker conditions and safety have improved and the amount of halogenated organic hydrocarbons (AOX) in the final effluent has been minimised. Water and energy consumption has also been reduced.

At Misr Beida Dyers, there was a reduction in water, energy and steam consumption and the processing cycle was shortened by 2 hours (18% reduction in processing time).

In both companies, apart from the environmental benefits, there have been other improvements in productivity and in fabric quality.

As regards economic costs and savings, the increase in chemical costs before and after was offset by savings in utilities and labour. Therefore, no capital expenditure was necessary for implementation and the benefits were immediate.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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Regional Activity Centre
for Cleaner Production



Generalitat de Catalunya
Government of Catalonia
Department of the Environment
and Housing

No. 41

Pollution prevention case studies

Reduction of re-dyeing in a textile company

Company background

The company is located on the European side of the region of Istanbul (Turkey). It is a relatively modern company, which operates as a commission dyer. Its main activity is cotton textile wet processing (up to 80-85% of its total production), although processes of manmade fabrics also take place.

Industrial sector Textile industry

Environmental considerations

It is crucial in dyeing operations to achieve the required shade and fastness on the fabric.

Fluctuations in the fabric quality and the quantity of production volumes that are handled require the proper adjustment of operational parameters (reaction time, concentrations of dyestuff and chemicals, etc.) to ensure the achievement of the desired quality. Failures in doing so result in dyeing errors, which require re-processing of the goods and thus additional chemical and resource consumption.

Therefore, the percentage of goods that require re-processing is an important parameter that influences the amount of water, energy and chemicals used in dyeing and subsequent washing stages.

Background

Before the improvement, several factors curbed the efficiency of the dyeing process thus requiring re-dyeing operations. One problem was that dyeing process was done with the doors of the machines open, which implied a loss in efficiency. Another was that the dyestuff was not mixed long enough with water in the dying process and the amount of steam used was insufficient.

The company's main aim was therefore to reduce re-dyeing operations by increasing the process efficiency in order to save water, energy and chemicals.

Summary of actions

In order to increase the process efficiency, the company made the following changes:

- It was ensured that doors were kept closed throughout the dying process through the control of machines.
- The parameters regarding dyestuff-water mixture were controlled to ensure the optimal process.
- The dispersant used to facilitate penetration of the dyestuff on the cloth was changed to improve the efficiency of the process and to reduce dyestuff in the liquor bath.

The results obtained from the implementation of these options were:

- Reduction in water consumption: 1.1%
- Reduction in thermal energy consumption: 0.8%
- Reduction in chemicals consumption: 1.7%

Balances

	Old process	New process
Material balances		
Energy consumption (MJ/year)	102,742,422	101,952,869
Water consumption (m ³ /year)	381,696	377,395
Raw material consumption (t/year)	3,549	3,487
Wastewater generation (m ³ /year)	316,808	313,238
Waste generation (kg/year)	72,832	72,832
Economic balances		
Energy (€/year)	908,826	901,680
Water (€/year)	348,376	344,365
Raw material (€/year)	977,596	964,938
Wastewater treatment (€/year)	61,038	60,335
Waste management (€/year)	3,550	3,550
Other costs		
Total annual cost (€)	2,299,386	2,274,868
Investment	non-significant	
Annual savings (€)	24,518	
Payback period	immediate	

Conclusions

By reducing the number of re-dyeing operations, the company has achieved significant savings without investing in costly machinery. Thus, by improving the dyeing process, the company has reduced its overall costs and achieved a €24,518 annual saving.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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Regional Activity Centre
for Cleaner Production



Generalitat de Catalunya
Government of Catalonia
Department of the Environment
and Housing

No. 43

Pollution prevention case studies

Energy recovery in a textile company

Company background

The company is located in the region of Denizli (Turkey). It is a relatively modern company, which operates as a commission dyer. Its main activity is cotton textile wet processing. The main type of fabric processed is mostly cotton (up to 80-85%), although processes of manmade fabrics also take place.

Industrial sector Textile industry

Environmental considerations

The impact of textile companies' activities on the environment mostly depends on the dyeing technique, which is usually highly water and energy consuming.

Actually, it is estimated that wet processes use up approximately 60% of the energy consumed in the textile industry. In an integrated textile mill 70% to 85% of the overall thermal energy consumption takes place in the wet treatment stage. Besides, the share of electrical energy consumption of the wet processing stage is around 25%. It is therefore crucial to recover the greatest possible amount of thermal energy for both economic and environmental reasons.

Background

Great amounts of hot water from hot dye bath discharged into the treatment plant obviously implied significant heat losses.

Summary of actions

The company installed a heat exchanger to recover heat from the process. Heat recovery from hot dye bath discharges of the dyeing machines was achieved with a 28.85% cost efficiency in terms of thermal energy recovery.

The cost of a heat exchanger is €406 for a 1 t/hour capacity, and it increases with the capacity. The company needed a capacity of 26 t/hour for heat recovery. Thus, when including additional elements necessary for heat recovery, the cost of the equipment reached €10,556.

Balances

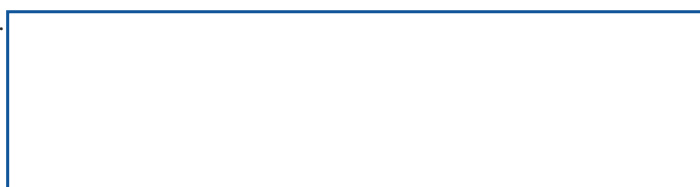
	Old process	New process
Material balances		
Energy consumption (MJ/year)	71,692,991	51,003,884
Water consumption (m ³ /year)	239,526	239,526
Raw material consumption (t/year)	1,589	1,589
Wastewater generation (m ³ /year)	198,806	198,806
Waste generation (kg/year)	42,493	42,493
Economic balance		
Energy consumption cost (€/year)	671,014	477,791
Water consumption cost (€/year)	218,482	218,482
Raw material consumption cost (€/year)	343,818	343,818
Wastewater treatment cost (€/year)	38,308	38,308
Waste management cost (€/year)	3,550	3,550
Other costs		
Annual total cost (€)	1,275,172	1,081,949
Investment (€)		10,556
Annual savings (€)		193,223
Payback period		1 month

Conclusions

With the implementation of this new cleaner technique, the company has significantly reduced its energy consumption by 28.85% along with its overall cost, thus putting less pressure on the environment. Moreover, the fact that heat recovery practices resulted in a €193,223 annual saving allowed for a very short pay-back period, less than one month.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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Generalitat de Catalunya
Government of Catalonia
Department of the Environment
and Housing

No. 44

Pollution prevention case studies

Reduction of the liquor ratio in a textile company

Company background

The company is located in the region of Denizli (Turkey). It is a relatively modern company, which operates as a commission dyer. Its main activity is cotton textile wet processing. The main type of fabric processed is mostly cotton (up to 80-85% of its total production), although processes of man-made fabrics also take place.

Industrial sector Textile industry

Environmental considerations

The “liquor ratio” (LR) is a very important parameter since it strongly influences the amount of water, energy and chemicals used in every stage of the textile processing where batch-wise operations are employed. The value of LR is powerful in highlighting the company’s potentials for significant improvements, both from economic and environmental angles.

Background

The improvement of the “liquor ratio” can be achieved through the use of cleaner technologies in the process.

Thus a reduction of LR from 1:9 to 1:7 can be obtained by changing the conditions in which the process is carried out. Nevertheless, in order to achieve a reduction from 1:9 to 1:4, the company had to buy a new machine.

Summary of actions

The company had “overflow” machines having a total capacity of 2,900 kg. The replacement of these machines by ULLR (Ultra Low Liquor Ratio) type jets (with the following capacities: 3 of 600 kg, 2 of 300 kg and 3 of 150 kg) allowed for the achievement of the desired improvement.

Balances

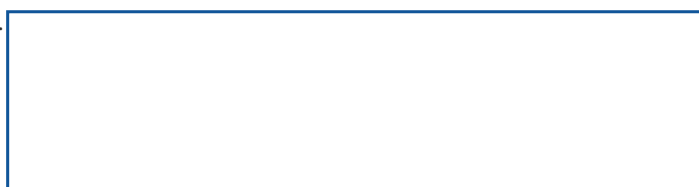
	Old process	New process
Material balances		
Energy consumption (MJ/year)	71,692,991	42,116,218
Water consumption (m ³ /year)	239,526	106,456
Raw material consumption (t/year)	1,589	706
Wastewater generated (m ³ /year)	198,806	88,358
Waste generated (kg/year)	42,493	42,493
Economic balance		
Cost of energy consumption (€/year)	671,014	394,785
Cost of water consumption (€/year)	218,482	97,211
Cost of raw material consumption (€/year)	343,818	153,067
Cost of wastewater treatment (€/year)	38,308	17,029
Cost of waste management (€/year)	3,550	3,550
Other costs		
Annual total cost (€)	1,275,172	665,642
Investment (ULLR-type jets)		968,629
Annual savings (€)		609,530
Payback period		20 months

Conclusions

The reduction of the bath ratio from 1:9 to 1:4 allows saving as much as 55% of water. The annual saving, in this case, is €609,530 which represents 4.4% of the total cost if we consider it as the added costs of water, energy and chemicals used in wet processes.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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SATI TEXTILE GROUP

IPPC IMPLEMENTATION

23 March 2012



Integrated Pollution Prevention and Control (IPPC national and regional transposition)

- **What steps have been necessary to take by SATI to obtain the IPPC permit?**
- With the appearance in 1998 of the Regional Law of Catalonia on integrated pollution and prevention it is decided to:
 - Contract a specialized external consultancy firm.
 - An initial environmental assessment is performed, to implement an Environmental Management System (ISO 14.001)
- Allocation of one staff of the organisation as Environmental Coordinator (Silvia Diloy)
- Implementation of an Environmental Management System (**ISO 14.001**)



Integrated Pollution Prevention and Control (IPPC national and regional transposition)

- Application for the IPPC permit. For this sake it was necessary to present a "**Basic Project file**", with the following information:
- For the environmental assessment:
 - Description of activities, facilities, processes and kinds of products.
 - Documentation to obtain the "activities license" from the municipality.
 - Report on the starting environmental status and previewed impacts.
 - Raw materials, substances and energy generated and used in the installation..
 - Emission sources (kinds and amounts).
 - Measures for the prevention and management of waste.
 - Systems for the control of emissions and waste water discharges..
- For the assessment of fire prevention issues:
 - Updated maps with the fire prevention equipments and pipe system.
 - Determination of the evacuation ways to be followed by staff in case of fire and establishment of new evacuation exits.
 - Assessment of the fire load (potential) of each section..
 - Substitution of normal doors by fire-proof doors in all the accesses between sectors..
 - Division into zones to reduce the fire risk and redistribute the fire load.
 - Enlargement of the fire control network so that it covers completely the textiles finishing fabric..



Integrated Pollution Prevention and Control (IPPC national and regional transposition)

- Once this project is presented, a verification is done by a so-called Authorised Environmental Entity.
- A first draft of IPPC permit is provided by the province office of the Regional Environmental Competent Authority, which implies some measures to take and some modifications of the facilities.
- Finally the IPPC permit is obtained, with a validity of 8 years. There is no need to apply again for a permit except from the case of a substantial modification of the installation.
- Obligations which have to be fulfilled by SATI :
 - Make a periodic control every 2 years on all environmental aspects.
 - Until now 2 periodic controls have taken place, in 2009 and 2011. In both there were some minor environmental issues, already solved, so that the industrial activity can continue.



Integrated Pollution Prevention and Control (IPPC national and regional transposition)

- Results achieved in the last years, through the actions performed following the objectives stated within the environmental management system:
 - Reduction of an 11% of water consumed per Kg. of textile in the dyeing machines.
 - Reduction of a 7% of water consumed per Kg. of textile in the processes of preparation and washing.
 - Reuse hot water coming from the cooling process of the dyeing machines, to reintroduce it in the system at a temperature of 60°C.
 - Usage of water discharged from the waste water treatment plant (WWTP) for industrial cleaning processes, after a prior treatment with hypochlorite.
 - Reduction bigger than 30% of the polluting charge of the waste waters discharged by the WWTP, specially regarding oxidizable substances (mgO_2 / l).
 - Channelling of waters with high salts content, coming from its treatment for its use in dyeing processes, directly and in a controlled way to the WWTP, improving the performance of the biological treatment process of the WWTP.



Integrated Pollution Prevention and Control (IPPC national and regional transposition)

- Main objectives established in the environmental management system in 2012:
 - Reduction of a 7.6% in the electricity consumed per Kg of finished. Fabrics
 - Reduction of a 4.7% in the heat consumed per Kg of finished. fabrics
 - Reduction of a 23% of electricity consumed in the compressed air circuit.
 - Reduction of a 26% of electricity consumed by the WWTP.
 - Reduction of more than 20% of the electricity consumed in internal lighting system.
 - Reduction of the electricity consumed in the external lighting system.
 - Reduction in the amount of unused chemical products for printing.
 - Use of chemical products with a higher biodegradability.
 - Reduction of the total volume of waste generated.
 - Substitution of the cardboard tubes by reusable metallic tubes..



Integrated Pollution Prevention and Control (IPPC national and regional transposition)

COSTS/INVESTMENTS done to obtain the IPPC permit (expressed in euros)

	2007	2008	2009	2010	2011
Costs related to the obtention of the IPPC permit	34.484	25.230	4.800	4.200	4.200
Periodic controls			6.820		6.767
Investments to adapt to IPPC requirements stated in the permit	73.989	132.475	38.634	10.642	8.511
Other environmental investments	13.786	12.796	13.099	13.684	9.093
Chemical products / waste water treatment	77.469	106.306	76.585	70.240	79.029
Taxes related to waste water discharged from our WWTP into the municipal network and WWTP	84.603	90.309	75.741	76.886	59.150



Integrated Pollution Prevention and Control (IPPC national and regional transposition)

- **Advantages**
 - Need to implement a good environmental management system.
 - Reduction of water, energy and electricity consumption, with the corresponding savings.
 - Reduction of waste generated.
- **Disadvantages**
 - Investment costs to adapt to the new legislative requirements.
 - Increased human resources costs (environmental coordinator).
 - Costs of the periodic controls done every 2 years.
 - Need to renew the IPPC permit every 8 years.
 - Duplicity of the information to be sent to the Administration (waste management, PRTR, DUCA).

THANK YOU FOR YOUR ATTENTION

www.sati.es

INTEGRATED ENVIRONMENTAL PERMIT PROCEDURE

Developer

MoEU/permits department

MoEU/inspection department

Stakeholders / general public

Art. 14: Application form
(Permit-related info + EIA report art. 11 +
Seveso notification)

Seveso notification indicating
Seveso category IF NEEDED

EIA report (corresponding to
art. 11 of EIA By-law) IF
NEEDED

Art. 15: Competent Authority 10 working days

Rectify the lack
of information
10 working days

Art. 16: Public information File available 15
working days

Art. 17: Obtaining reports issued by different
Competent Authorities or departments

- Reports of the Municipality
- Final reports on:
• the different waste water discharges
• wastes
• noise control
• air emissions
• groundwater and soil
• Final report & Decision on EIA (IF
NEEDED)
- Health protection buffer zone (IF
NEEDED)
- WWTP design approval
- Ground water search and use permit (if
no EIA needed)
- Establishment permit (IF NEEDED)

Art. 18: Assessment of the project as a whole
EIA + Environmental Permit 20
working days

Art. 18: Draft Decision of
Integrated Environmental Permit

Art. 19: Plea of allegations
Competent Administrations & Public

Art. 19: Forwarding allegations to
relevant competent authorities

Art. 19: Forwarding allegations to authorities
related to reports, and elaboration of
comments by these authorities

Art. 20: Assessment of allegations by the Competent Authority 20 working days

Art. 20: Int. Env. Permit by the Competent Authority (specifying conditions
to be fulfilled to keep its validity after Verification of compatibility)

Art. 20: Denied

Art. 22: Notification to the
developer

Art. 22: Publication

Art 12: Rest of building permits before construction (if constr. needed)

Construction and adaptation to permit requirements (if needed)

Notification to Competent Authority

Verification of compatibility with Integrated Environmental Permit

Favorable

Unfavorable

4 months (new) / 1
year (existing inst.)
for needed changes

5 working days
Favorable
5 working days
Unfavorable

Compatibility document

Notification to the developer

Building usage permit & other non-environmental permits to start operation IF NEEDED

OPERATION STARTS

240 working days this part of the procedure

Arts. 23 & 24

Art. 25

Special cases requiring
more time are described in
arts. 23 & 24 of the By-Law