Guidelines for Abatement of Pollution
In
Textile Industry

Published by
Rajasthan State Pollution Control Board
4, Institutional Area, Jhalana Dungri, Jaipur
Table of Content

1. Introduction
2. Location
3. Guidelines for treatment and disposal of waste water in textile industry
4. Waste water treatment technologies in textile industry
5. Good Practices related to use of environmental friendly alternate chemicals and Cleaner production technologies in textile industries.
6. Guidelines for Air Pollution Control
   6.1 Control of air emission from Boilers & D.G. Sets
   6.2 Control of noise pollution from D.G. Sets
   6.3 Regulation on ambient air and noise quality
7. Guidelines for management of hazardous waste
8. Plantation for pollution abatement
9. General conditions
10. Statutory clearance Process
   10.1 Environmental Clearance
   10.2 Categorization, delegation of powers to Regional Officers
   10.3 Fee structure for textile industries
11. Procedure for applying for consent to establish, first consent to operate and renewal of consent to operate under the provisions of Water and Air Acts
   11.1 Procedure for applying for consent to establish
   11.2 Procedure for applying for first Consent to operate
   11.3 Procedure for applying for renewal of Consent to operate
13. Compliance of Water Cess Act, 1977
14. Periodic reports to be submitted to the State Board
15. Consequence of default in compliance of guidelines
16. Conditions for revocation of consent/authorization
17. Annexure
   17.1 Hydraulic loading applicable for different soils and wastes
17.2 Discharge standards for effluent from textile industry
17.3 Guidelines for the CETP Trust and member units of the CETP Trust
17.4 List of harmful Dyes, Pigments and other Chemicals and their Alternatives
17.5 EPA Notification no. GSR176 (E) dated 2.04.1996
17.6 GSR 475 (E) dated 5.05.1992
17.7 Ambient air quality standards prescribed under Environmental Protection Act, 1986 vide notification dated 18.11.2009
17.8 Ambient noise standards laid down vide notification dated
17.9 Format for declaration on non-judicial stamp of Rs 10/-
1. **Introduction**

Textile industry is one of the highly polluting industries in the state having potential for creating pollution of water and air. The major operations performed in a typical textile processing industry are desizing, scouring, mercerizing, bleaching, neutralizing, dyeing, printing and finishing. The discharge of polluted effluents and use of various raw materials may cause contamination of soil, ground water and surface water which may have adverse consequences on environment in general and local population in particular. The effluents generated from the textile industry are of utmost concern because of its high volume and pollution potential. Quantity and nature of waste generated depends on the fabric being processed, chemicals being used, technology being employed, operating practices etc. The important pollutants present in a typical textile waste effluent are toxic heavy metals, bio-chemical oxygen demand (BOD), chemical oxygen demand (COD), residual chlorine, dissolved solids, colour and non-biodegradable organics termed as refractory materials.

The textile units may have utilities such as raw water treatment system, cooling towers, laboratory, workshop(s), fuel storage facilities, residential colony, administrative block, canteen etc. which generates utility waste water and domestic waste water. Main sources of air pollution are boilers(s), thermo pack and diesel generator(s) which generate gaseous pollutants such as suspended particulate matter (SPM), sulphur di oxide gas and oxide of nitrogen gas.

Textile industry is also a major source of hazardous waste generation. The sources of hazardous waste generation are effluent treatment plant sludge, used oil, empty containers of dyes and other chemicals etc.

It is therefore essential that textile industries are established with complete pollution control abatement measures. Accordingly, State Board issues the following guidelines.

2. **Location**

The textile industries will only be established in a well defined industrial estate maintained by RIICO.
3. Guide lines for treatment of industrial waste water from the textile industry

Industries located in isolated areas are required to install their own effluent treatment plant for the treatment of industrial waste water. Such industries will comply with the following guidelines:

i. The highly polluting effluent stream should be segregated and treated separately. This stream normally has low volume and as such, it can be disposed of through solar evaporation pond where adequate land is available. In case of land constraints, this waste stream can be concentrated to further reduce the volume by using suitable evaporation system or it can be reused in process after tertiary treatment. The reject stream of reverse osmosis process is to be treated along with high polluting effluent stream. No discharge of highly polluting effluent stream or R.O rejects will be allowed in any river body or on land.

ii. The other low polluting streams should be treated through primary/secondary/tertiary treatment to meet the disposal standards or for reuse in industry for appropriate operations. Disposal in a river or water body will not be allowed due to inadequate surface water availability in the rivers or water bodies in the state. For industries generating waste water more than 100 KLD, at least 80% of the treated effluent needs to be reused in the process after appropriate tertiary treatment.

iii. For use of treated waste water for horticulture, adequate land area should be available as per the guidelines enclosed (Annexure-17.1).

iv. It is desirable that spent dye bath effluent is segregated and treated for recovery of salt. This effluent can be treated using a primary treatment followed by evaporation and crystallization. Glauber salt (Sodium Sulphate decahydrate, Na2SO4.10H2O).

v. A good quality water meter should be installed at the outlet of the ETP. Industries having effluent generation less than 10 KLD may install a mechanical water meter, however, the industries having effluent generation equal to or more than 10 KLD needs to install electronic water meters.
vi. Good housekeeping shall be maintained by keeping check on leaking valves, crack and fissures in pipes, faulty equipment etc so as to avoid wastage of water and other raw materials/resources.

vii. The outflow of the treated effluent should be discharged through closed conduits only so that no effluent is discharged on land.

viii. Industry will strive for adopting process/plant modifications which result in to waste minimization and conservation of chemicals, energy and water.

ix. That the sludge generated from the medium and large scale textile units will preferably be utilized for co-incineration in cement kilns.

x. Treated effluent is required to comply with the prescribed discharge standards under Environmental Protection Rules, 1986. Discharge standards for effluent from textile industries as prescribed under EPA are at annexure-17.2

xi. The industries will strive for achieving lower carbon foot prints by increasing efficiency in use of water, energy and other resources/raw materials. They will also encourage use of alternate energy in their industries.

The textile industries located in clusters like Pali, Jodhpur, Balotra etc are required to treat their waste water through Common Effluent Treatment Plant (CETP) and for such industrial clusters, separate guidelines have been provided for the member units and CETP Trusts for clear demarcation of role and responsibilities and the same are available at annexure-17.3

4. Waste Water Treatment Technologies in the Textile Industry

The waste water generated from the textile industry is required to be treated by a suitable mechanism before it can be disposed off in any receiving media such as river, pond, lake or needs to be utilized for plantation. Typically the conventional wastewater treatment system in textile processing industries includes screen chamber, oil & grease trap, equalization and coagulation in primary treatment systems and activated sludge treatment or two-stage aeration followed by clarifier in secondary treatment system. Although COD/BOD reductions are achieved through this conventional treatment system, objectionable color, high TDS levels of
effluents remain and effluents are not fit to be discharged to surface water or on land. Hence, tertiary treatment systems are becoming necessary for achieving disposal standards.

Membrane based processes such as Reverse Osmosis (R.O), ultra filtration and nano filtration are widely used as end of the treatment for removal of organics and dissolved salts. Ozonization is also one of the tertiary treatment options which is mainly used for the oxidation of organic and inorganic, deodorization, and decolonization in textile industries.

Advance waste water treatment technologies specially, membrane filtration has a problem of disposal of highly concentrated high volume waste water generated as reject. Multiple Effect Evaporators, Mechanical Vapor Compression, Direct Contact Evaporation etc are various technologies used for evaporation of effluents or rejects generated from the membrane processes. Also, various advance treatment like reverse osmosis, sand filter, activated carbon, adsorption, iron and manganese filter etc have strict feed waste water quality requirements which requires close quality monitoring at each stage of treatment Therefore trained manpower and good laboratory facilities are required to operate such treatment systems.

5. Good Practices related to use of environmental friendly alternate chemicals and Cleaner production technologies in textile industries.

Textile processing units, particularly wet processing units consume large quantities of water and discharge large quantities of wastes. It also uses various chemicals and dyes, which can harm the environment. There are huge opportunities in the textile sector of using alternative chemicals and reducing generation of wastes from process by adopting cleaner production techniques.

5.1 Use of alternate dyes, pigments, acids and other chemicals

A number of dyes, pigments, acids and other chemicals have been banned from use as they have potentially toxic, mutagenic or carcinogenic properties. Some of the dyes are known to release amines during processing. Due to carcinogenic potential of these amines, many dyes and pigments are being banned or suggested to go for alternative dyes/pigments in many countries. List of such potentially harmful dyes, pigments, acids and other chemicals and their alternatives are given at annexure. 17.4
5.2. Use of Cleaner Technologies & Resource Conservation

There are many alternative process technologies which can reduce overall load at source. Some of them are solvent-aided scouring and bleaching processes, use of padding method in place of exhaust methods for dyeing, wherever possible, electrolytic process for the dyeing of vat colors and reduction-clearing of disperse-colour printed synthetic fabrics etc. For more details of please consult www.unep.org/publications/search/pub_details_s.asp?ID=2257 and http://www.envirowise.gov.uk/uk.html

The recovery and re-use of chemicals are to be explored in the following areas:

- The re-use of dye solutions from the dye bath;
- The recovery of caustic after the mercerizing process;
- The recovery of size in cotton processing (in practice this is limited to integrated operations which apply and remove size)

In conventional dyeing, usually only the dye and a few specialty chemicals are totally consumed during the process. Most of the chemicals remain in the dye bath and are discarded with it. The feasibility of dye bath re-use depends on dye, colour, shade and whether dyeing is carried out in a batch or a continuous process. In some cases, dye baths can be re-used at least 5 - 10 times (in other cases up to 25 times) until the build-up of impurities limits further re-use.

Water Conservation Measures

Following water conservation methods can be adopted in textile units depending on the processes being used and size of the unit:

- Installing water meters to monitor water use,
- Using automatic shut-off nozzles and marking hand-operated valves in such a way that open, close and directed-flow positions are easily identified
- Using high-pressure, low volume-cleaning systems, such as CIP (clean in place) for washing equipment
• Installing liquid level controls with automatic pump stops where overflow is not likely to occur
• Recycling cooling water through cooling towers
• Minimizing spills on the floor minimizes floor washing in the dye house
• Repairing leaks in the water pipe network
• Handling solid waste dry
• Recycling steam condensate whenever possible
• Using technologies which do not require large quantities of water, such as low dye bath ratio, high pressure steam washing and plasma cleaning of fabrics

Process Water Re-Use Options in Textile industry

Significant savings can be made in textile processing industries by recovering and re-using of water at processes itself. Few areas where these options can be examined by the units are outlined hereunder:

• Recycling of final wash water after H2O2 bleaching as a wash water for second scouring step or for earlier bleaching steps
• Reusing bleaching wash water to start another bleaching batch.
• Re-use of hot bleach water for starting optical brightening batch
• Re-use of optical brightening wash water to start another batch of optical brightening batch
• Final wash water of cone scouring and bleaching can be used as wash water for scouring and bleaching
• Cold rinse water used after scouring step for sulphur black dying can be used for the reduction step
• Re-use of hydrosulphite wash water for another batch of hydrosulphite batch
• Re-use of clarified print wash water in washing and blankets and screens of the print machine

6. Guidelines for Air Pollution Control

Main sources of air pollution in textile industry are boilers, furnaces and D.G. sets on which adequate air pollution control measures, stack heights and infrastructure facilities for air pollution monitoring are required to be provided. Apart from that, D.G sets also generate noise pollution for which separate standards are laid down.
6.1 Standards for control of air emission from Boilers and D. G. Sets

On coal fired boilers of steam capacity up to 15 tons per hour, industry is required to install cyclone, multi cyclone, bag filter or electro static precipitator (ESP) depending on the steam generating capacity. On all boilers using liquid fuel or coal, height of the stack will be governed by flow rate of sulphur di oxide emissions. However, in no case the stack height will be less than 11 meters. The type of air pollution control equipment required to be installed, emission standards to be complied and procedure for calculating the stack height is governed as per EPA Notification no. GSR176 (E) dated 2.04.1996 copy of which is at annexure-17.5. For boilers using bagasse as fuel, emission standards have been laid down vide GSR 475 (E) dated 5.05.1992 which are at annexure-17.6.

Air emissions from D.G sets are presently governed by adequate stack height to be provided on the D.G. sets depending on its capacity. Emission Regulation part-IV published by CPCB has given the formula for working out the stack height. For regulation of stack emissions of D.G sets of capacity more than 0.80 MW, separate standards are laid down vide GSR 489 (E) dated 9.07.2002 which needs to be complied with.

6.2 Standards for control of noise pollution from D.G. Sets.

Noise standards for D.G sets have been laid down vide notification No. 371(E) dated 27.05.2002 under Environmental Protection Act, 1986. Separate noise standards for D.G sets up to 100 KVA and other are prescribed under these standards.

**Noise limit for Diesel Generator Sets (up to 1000 KVA) manufactured on or after the 1st July, 2003:**

- The maximum permissible sound pressure level for new diesel generator (DG) sets with rated capacity up to 1000 KVA, manufactured on or after the 1st July, 2003 shall be 75 dB (A) at 1 meter from the enclosure surface
- The diesel generator sets should be provided with integral acoustic enclosure at the manufacturing stage itself
Noise limit for DG sets not covered above:

- Noise from the DG set should be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end
- The acoustic enclosure or acoustic treatment of the room shall be designed for minimum 25 dB (A). Insertion Loss or for meeting the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may not be possible to check the performance of the acoustic enclosure/acoustic treatment. Under such circumstances the performance may be checked for noise reduction up to actual ambient noise level, preferably, in the night time). The measurement for Insertion Loss may be done at different points at 0.5m from the acoustic enclosure/room, and then averaged
- The DG set shall be provided with proper exhaust muffler with Insertion Loss of minimum 25 dB (A).

6.3. Regulation on ambient air and noise quality

All the industries are required to comply with the prescribed ambient air and noise quality standards. For ambient air, standards are prescribed under Environmental Protection Act, 1986 vide notification dated 18.11.2009 (Copy at annexure-17.7) while for ambient noise, standards are laid down vide notification dated 14.02.200 (copy at annexure-17.8). The ambient air and noise quality standards as notified under E (P) Act, 1986 shall be monitored at the boundary of the industry for compliance.

7. Guidelines for Management of Hazardous Waste

Handling, storage, treatment and disposal of the hazardous waste is governed by Hazardous Waste (Management, Handling and Trans boundary Movement) Rules, 2008. In the textile industries, major probable sources of hazardous waste generation covered under various categories of schedule IV are as follows:

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Waste Generating Process</th>
<th>Category</th>
<th>Hazardous Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Industrial operations using mineral/synthetic oil as lubricant in hydraulic system or other applications</td>
<td>5.1</td>
<td>Used /Spent oil</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------------------------------</td>
<td>-----</td>
<td>---------------</td>
</tr>
<tr>
<td>2</td>
<td>Production of canvas and textiles</td>
<td>24.1</td>
<td>Chemical residues</td>
</tr>
<tr>
<td>2</td>
<td>Production or industrial use of synthetic dyes, dye-intermediate and pigments.</td>
<td>26.1</td>
<td>Process waste sludge/residue containing acid or other toxic metals or organic complexes</td>
</tr>
<tr>
<td>3</td>
<td>Disposal of barrels/containers used for handling of hazardous waste/chemicals.</td>
<td>33.1</td>
<td>Chemical-containing residue arising from decontamination</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33.2</td>
<td>Sludge from treatment of waste arising out of cleaning/disposal of barrels/containers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>33.3</td>
<td>Discarded Containers/ barrels /liners contaminated with hazardous wastes/chemicals</td>
</tr>
<tr>
<td>5</td>
<td>Purification and treatment of exhaust air, water &amp; waste water from the processes in this schedule and common industrial effluent treatment plants (CETP’s)</td>
<td>34.1</td>
<td>Flue gas cleaning residue</td>
</tr>
<tr>
<td></td>
<td></td>
<td>34.2</td>
<td>Spent ion exchange resin containing toxic metals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>34.3</td>
<td>Chemical sludge from waste water treatment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>34.4</td>
<td>Oil and grease skimming residue</td>
</tr>
<tr>
<td></td>
<td></td>
<td>34.5</td>
<td>Chromium sludge from cooling water</td>
</tr>
</tbody>
</table>

Following guidelines are prescribed for handing, storage, treatment and disposal of the hazardous waste generated from the textile industries:

i. The hazardous waste needs to be stored under covered shed so that problems like odour, surface water contamination, ground water contamination etc. do not occur

ii. No hazardous waste can be stored beyond a period of 90 days except with the prior permission of the State Board as per rule 7 of the HWMR, 2008.

iii. Transfer of hazardous waste for sale, recycling, reprocessing or disposal shall be done through the manifest system only as per rule 21 of HWMR, 2008.

iv. The spent/used oil is to be disposed off through sales to the registered recycler of the spent/used oil after obtaining authorization from the State Board
v. In case the industry wants to utilize the hazardous waste as a supplementary resource or for energy recovery, or after processing then the industry needs to obtain approval under rule 11 of HWMR, 2008 from the competent authority.

vi. All the hazardous waste like oil soaked material, sludge containing oil etc which are having calorific value more than 2500 Kcal are required to be disposed off through incineration.

vii. The unit has to display the data outside the factory main gate in Hindi & English both on a 6’X 4’ display board in the manner & format prescribed by the State Board.

8. Plantation for Pollution Abatement

For conserving environment from adverse effect of emissions, the industry must ensure that:-

i. Minimum 33% of the land on which industry is established or proposed to be established is covered by plantation.

ii. At least two rows of tall trees of suitable species are planted along the boundary on all the sides and such plantation should be carried out within a minimum width of 10 meter. An additional row of shrubs shall also be preferable.

iii. If the soil is not fit for plantation, the project proponent will import soil and ensure that saplings with minimum height of 5 feet are planted.

iv. The plantation is carried out as per guidelines issued by the State Board.

9. General conditions

i. A Sign Board showing the name, address and capacity of the industry as well as validity of the consents should be displayed at the entrance of the site.

ii. In case the industry intends to use ground water more than 25 kilolitres/ day, the industry must obtain prior permission from the competent authority (Central Ground Water Authority) for withdrawal of ground water.

iii. The application for consent and reply to notices etc. must be furnished by owner (including lawfully empowered attorney for such purpose) of the industry. Where the owner of the industry is a Juristic person (Company, Firm, Association etc.), the
applications must be filed/ information must be furnished under the seal and signature of a person authorized for such purpose and the document confirming the authorization must be attached.

10. Statutory Clearance Process

It is essential for entrepreneurs to know the statutory clearances which are required to be obtained from the State Board and method and requirements for filling of applications consents/authorizations to the RSPCB and submission of various returns. This chapter provides details of various statutory clearances and guidelines for filing of applications as well as relevant data and forms.

All the industries which are covered under the provisions of Water (Prevention & control of Pollution) Act, 1974 and Air (Prevention & control of Pollution) Act, 1981 are required to obtain ‘consent to establish’ for establishment of any new unit or before carrying out expansion/modernization of any existing unit. These units after establishment are required to obtain ‘consent to operate’ before commencing commercial production. Consent to operate is also required for all the existing units which are covered under the provisions of Water (Prevention & control of Pollution) Act, 1974 and Air (Prevention & control of Pollution) Act, 1981. Consent to establish is one time and required only at the time of establishment of new unit or before carrying out expansion/modernization in the existing unit whereas consent to operate is granted for a specific period and needs to be got renewed every time after expiry.

Industries which are covered under the provisions of Hazardous Waste ((Management, Handing and Trans boundary Movement) Rules, 2008 are also required to obtain authorization under the provisions of the rules.

10.1 Environmental Clearance

Environmental Impact Assessment Notification S.O.1533 (E) of 14th September 2006 as amended in 2009 has made it mandatory to obtain prior environmental clearance for Common Effluent Treatment Plants (CETPs). As per the provisions of the aforesaid notification, CETPs are covered under category ‘B’ and competent authority for considering the environmental clearance in such cases is State Environmental Impact Assessment Authority (SEIAA). The
application in prescribed form along with necessary enclosures is required to be submitted to State Expert Appraisal Committee (SEAC). For further information please contact SEAC on State Board’s website.

**10.2 Categorization of textile industries and delegation of powers to Regional Officers**

State Board has categorized the industries under Red, Orange and Other categories depending on their pollution potential. Accordingly, the textile industries have been categorized as under:

<table>
<thead>
<tr>
<th>Category</th>
<th>Type of textile industries included</th>
</tr>
</thead>
</table>
| **Red**  | 1. Manmade fibers manufacturing (rayon and others)  
2. Yarn and textile processing involving scouring, bleaching, dyeing, printing or any effluent/ emission generating process  
3. Wool scouring unit |
| **Orange** | 1. Yarn and textile manufacturing/ processing not involving scouring, bleaching, dyeing, printing or any effluent/ emission generating process including weaving and spinning unit.  
2. Carpet processing units  
3. Surgical cotton and gauges |
| **Green** | All those industries/project processes/ activities/mines which are not covered under Red or Orange category and are discharging waste water and/or air emissions will be covered under Green category |

As per delegation of powers to Regional Officers issued vide order dated 21.12.2010, all the textile industries categorized under Orange and Green categories and small and tiny scale wool scouring units covered under the Red category, respective Regional Officer of the State Board will be the competent authority for grant or refuse of the Consent to Establish/ Operate under the provisions of the Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 located within their territorial Jurisdiction.

For all the Red category of textile industries except for small and tiny scale wool scouring units, Head Office will be the competent authority for grant or refuse of the Consent to Establish/ Operate under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981 and for grant/refuse of authorizations under the provisions of Hazardous Waste ((Management, Handling and Trans boundary Movement) Rules, 2008.
However, the consent applications of the entire industry/project process/activity mine etc. covered under EIA Notification, 2006 and Aravali Notification, 1992 shall be dealt at RSPCB Head Office irrespective of the delegation of power noted above. Also, in case any application is refused at the Regional Office level, the decision on the application submitted subsequently by the unit shall be taken by at RSPCB, Head Office level.

10.3 Consent/Authorization Fee structure for textile industries

Fee structure for all the industries has been defined based on notification dated 10.12.2010 issued by Department of Environment. In the notification, industries have been classified in Appendix A and Appendix B. Amount of fee to be paid by a unit depends on appendix under which the unit is covered, its capital investment and whether the unit is generating hazardous waste as per the provisions of HWMR, 2008. Copy of notification dated 10.12.2010 issued by Department of Environment is available at the State Board’s website. In case of renewal of consent to establish and consent to operate under Air and Water Acts, the fee will also depend on date of expiry of the last consent and date of submission of renewal application to the State Board. Please see notification dated 25.06.2010 issued by Department of Environment for further details. The notification is also available on the State Board’s website.

As per the fee structure dated 10.12.2010, classification of textile industries under appendix A and B is as under:

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Type of textile industries included</th>
</tr>
</thead>
</table>
| A        | 1. Manmade fibers manufacturing (rayon and others)  
          | 2. Yarn and textile processing involving scouring, bleaching, dyeing, printing or any effluent/ emission generating process other than small and tiny scale unit located at isolated places other than cluster areas.  
          | 3. Wool scouring unit other than small and tiny scale unit |
| B        | 1. Yarn and textile manufacturing/ processing not involving scouring, bleaching, dyeing, printing or any effluent/ emission generating process including weaving and spinning unit.  
          | 2. Yarn and textile processing involving scouring bleaching, dyeing-printings or any effluent/emission generating and located at isolated places other than cluster areas (small and tiny scale units).  
          | 3. Carpet processing units  
          | 4. Surgical and medical products not involving prophylactics and latex  
          | 5. Wool scouring unit (small and tiny scale unit) |
11. Procedure for applying for consent to establish, first consent to operate and renewal of consent to operate under the provisions of Water Act, 1974 and Air Act, 1981

11.1 Procedure for applying for consent to establish

The application in the prescribed form must be filed and submitted online at the State Board website with the following documents for consent to establish:-

i. Requisite consent fee

ii. Requisite Declaration on Rs. 10/- non judicial stamp paper duly attested by notary public (As per annexure 17.9).

iii. Land allotment/land conversion letter from the competent authority.

iv. Details of various sources of air pollution, water pollution, hazardous waste etc and proposal for pollution control measures (enclose feasibility report).

v. In case of small scale textile units proposed to be connected to CETP, please also submit copy of NOC issued by the Trust and details of plant and machinery proposed to be installed.

vi. Copy of Partnership deed/ MoU & Article of Association or authority letter in favour of applicant as the case may be.

vii. Financial Project report duly attested by Chartered Accountant.

viii. NOC from Central Ground Water Authority (CGWA) in case:
   a) The abstraction of ground water is $\geq 25$ m$^3$/day, in case of over exploited areas
   b) The abstraction of ground water is $\geq 50$ m$^3$/day, in case of critical areas
   c) The abstraction of ground water is $\geq 100$ m$^3$/day, in case of semi critical areas
   d) Industry/infrastructure project/mine (proposed/existing) located in safe category areas, are also required to obtain NOC from CGWA if ground water abstractions exceeds 1000m$^3$/day for hard rock areas and 2000m$^3$/day for alluvial areas.

ix. Registration from Industry Department.

x. Compliance of earlier consent conditions, if applied for expansion in capacity/machinery or additional products.
xi. Point wise commitment for compliance of EC conditions in case EC is applicable.

xii. Check list

Please note that consent to establish application in above cases will be considered only after submission of NOC from CGWA where ever applicable. For further details please see detailed notification issued by the State Board vide letter dated 8.01.2010 at State Board website.

After filing the application online please take print out of the filled in application and ensure to submit one hard copy with requisite consent fee and other documents to the head office in case head office is empowered to deal with the application or to the concerning Regional Officer in case power to dispose the application has been delegated to the Regional Officers.

11.2 Procedure for applying first consent to operate

The application in the prescribed form must be filed and submitted online at the State Board website with the following documents for consent to operate:-

i. Requisite consent fee.

ii. Requisite Declaration on Rs. 10/- non judicial stamp paper (as per annexure-17.9).

iii. Report of compliance of conditions of consent to establish.

iv. Copy of requisite documents required with consent to establish as per Para 10.1, if not submitted earlier.

v. Certified capital investment (land, building, plant and machinery) for assessing adequacy of deposited fee.

vi. Tentative/ proposed date of commissioning

vii. Check list

After filing the application online please take print out of the filled in application and ensure to submit one hard copy with requisite consent fee and other documents to the head office in case head office is empowered to deal with the application or to the concerning Regional Officer in case power to dispose the application has been delegated to the Regional Officers.

The consent application will be examined by the competent authority and field inspection/sampling/monitoring will be undertaken wherever required. In case of any deficiencies, the same will be communicated by email and in writing. The application will be decided within a period of 4 months.
In case, the applicant has paid fee for more than one year, the fee in excess of one year shall be returned to the applicant on refusal of application. The fresh application shall be considered with fees as per the notification number G.S.R. 73 dated 10.12.2010

11.3. Procedure for applying for renewal of consent to operate

The application in the prescribed form must be filed online at the State Board website and submitted to the State Board with the following documents for renewal of consent to operate:

i. Requisite consent fee.
ii. Requisite Declaration on Rs. 10/- non judicial stamp paper (as per annexure-17.9)
iii. Report of Compliance of conditions of earlier consent to operate.
iv. Certified capital investment (land, building, plant and machinery) without depreciation.
v. Copy of periodical reports submitted.
vi. Check list

After filing the application online please take print out of the filled in application and ensure to submit one hard copy with requisite consent fee and other documents to the head office in case head office is empowered to deal with the application or to the concerning Regional Officer in case power to dispose the application has been delegated to the Regional Officers.

The consent application will be examined by the competent authority and field inspection/sampling/monitoring will be undertaken wherever required. In case of any deficiencies, the same will be communicated by email and in writing.

In case, the applicant has paid fee for more than one year, the fee in excess of one year shall be returned to the applicant on refusal of application. The fresh application shall be considered with fees as per the notification number G.S.R. 73 dated 10.12.2010.


The application in the prescribed form must be filed online at the State Board website and submitted to the State Board with the following documents:

i. Requisite declaration on Rs. 10/- non-judicial stamp paper
ii. Report of compliance of conditions of previous authorization, if issued
iii. Detail method of pre-treatment (if any) and disposal of wastes
iv. Details of storage facilities provided to store the hazardous waste

v. Copy of membership of the Common Treatment, Storage and Disposal Facility (CTSDF) for hazardous waste in case the hazardous waste needs to be disposed at the CTSDF.

vi. In case the hazardous waste is being co processed in a cement unit then copy of agreement with the cement unit for co processing of the hazardous waste.

vii. Details of the arrangements made for display of the requisite information at the factory main gate

viii. Record of the hazardous waste, generated, disposed, co incinerated, sold to recycler with copies of manifests.

ix. Monitoring/analysis reports of soils, ground water and ambient air around the hazardous wastes storage area.

x. Check list.

After filing the application online please take print out of the filled in application and ensure to submit one hard copy with requisite documents to the respective Regional Office and to head office. The application will be examined and field inspection/sampling/monitoring will be undertaken wherever required. In case of any deficiencies, the same will be communicated by email and in writing.


If the industry consumes water for different applications including domestic more than 10 KLD shall file the Water Cess returns in the prescribed format along with analysis report of treated effluent.

The Central Government exempted industries consuming water less than 10 KLD per day from the levy of cess, provided that no such exemption shall be applicable in case of industries generating ‘hazardous wastes’ as identified in clause (i) of Rule 3 of the HW (MH &TM) Rules, 2008.

Rates applicable are as under:
<table>
<thead>
<tr>
<th>S.No</th>
<th>Purpose for which water consumed</th>
<th>Rate ( paise per kl)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sub.Sec2</td>
</tr>
<tr>
<td>1</td>
<td>Industrial cooling spraying in mine pits or boiler feed</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Domestic purpose</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Processing where by water gets polluted &amp; pollutants are easily biodegradable</td>
<td>10</td>
</tr>
<tr>
<td>4</td>
<td>Processing where by water gets pollution the pollutants are not easily biodegradable and are toxic</td>
<td>15</td>
</tr>
</tbody>
</table>

Industries which have installed ETP, are complying with all the provisions of section 25(5) of the Water (Prevention & Control of Pollution) Act, 1974 as well as standards framed under the Environment (Protection) Act, 1986 are eligible to avail incentive by way of lower rates as per provision of section 3(2) of Water (Cess) Act and 25% rebate under Water (Cess) Act, 1977.

Cess assessment order will be passed by Member secretary and communicated to industry. Mode of payment shall be through cash or Demand Draft to be paid in the account of Member Secretary, RPCB in Uco Bank, Banipark Branch, Jaipur or any of its local branches through Challan. Demand draft can also be submitted to concerning R.O.

RSPCB had simplified the Cess assessment procedure for certain category units. The scheme shall be applicable to small assess whose Cess liability under the existing rates does not exceed Es. 6,000/- PA. Under this scheme the eligible assesses shall submit a self-assessment before 31\textsuperscript{st} May of every year, for the ensuing year as a whole, based on earlier year’s data and as per the latest rates. The amount payable shall be submitted in the form of Demand Draft taken in favor of Member Secretary, Rajasthan State Pollution Control Board and the same shall be submitted to the Member Secretary, Rajasthan State Pollution Control Board, Jaipur with a copy to the concerned Regional Officer of the Board.

14. Periodical Reports required to be submitted to the State Board

Following periodical reports must be submitted to the State Board
i. Quarterly compliance report of consent conditions to Regional Office & Head Office in case of Red category of industries and six monthly compliance report in case of ‘Orange and Other’ category.

ii. Monthly treated effluent quality Monitoring Report along with quantity of effluent received, treated and recycled to Regional Office & Head Office both.

iii. Quarterly Stack/ambient air quality monitoring reports.

iv. Annual Environment Statement to Regional Office & Head Office both.

v. Environment Audit Report from the certified Environmental Auditor once in every three years.

15. Consequence of default in Compliance of the Guidelines

If any non-compliance is observed during the operations, notice U/s 31(A) of the Air Act, 1981 and U/s 33 (A) of the Water Act, 1974 will be issued and proponent will be directed to rectify the non-compliance within specified period. If non compliances are found to be continuing even after show cause notice, the consent will be revoked/ refused and closure directions will be issued forthwith. The owner will also be liable for criminal prosecution.

16. Conditions for Revocation of Consent

The consent granted will be revoked if it is found that:-

- It has been obtained by misrepresentation of facts.
- The industry defaults in Pollution Control Measures and other conditions of consent to establish or consent to operate.
- The industry defaults in furnishing of annual information even after expiry of 30 days from the prescribed period.
- The industry violates provisions of Water Act, 1974 and /or Air Act, 1981.

These guidelines will be applicable while deciding cases of textile industry for consent to establish or consent to operate under Water Act, 1974 or Air Act, 1981 and authorization under HWMR, 2008. All concerned are directed to ensure strict compliance.
## Annexure 17.1

### Hydraulic Loading Applicable For Different Soils and Wastes

<table>
<thead>
<tr>
<th>S.No</th>
<th>Soil Texture Class</th>
<th>Dosage of settled sewage applied m³/hectare/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sandy</td>
<td>225 to 282</td>
</tr>
<tr>
<td>2</td>
<td>sandy loam</td>
<td>168 to 225</td>
</tr>
<tr>
<td>3.</td>
<td>loam</td>
<td>112 to 168</td>
</tr>
<tr>
<td>4</td>
<td>clay loam</td>
<td>56 to 112</td>
</tr>
<tr>
<td>5</td>
<td>clayey</td>
<td>35 to 57</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>S.No</th>
<th>Soil Texture Class</th>
<th>Dosage of Settled Industrial Waste applied (m³/hectare/day)</th>
<th>BOD upto 300mg/l</th>
<th>BOD more than 300mg/l but less than 500 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sandy</td>
<td>180 to 226</td>
<td>90 to 113</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Sandy loam</td>
<td>134 to 180</td>
<td>67 to 90</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>loam</td>
<td>90 to 134</td>
<td>45 to 67</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>clay loam</td>
<td>45 to 90</td>
<td>22 to 45</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>clayey</td>
<td>28 to 44</td>
<td>14 to 22</td>
<td></td>
</tr>
</tbody>
</table>
## DISCHARGE STANDARDS FOR EFFLUENT FROM TEXTILE INDUSTRY

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Concentration not to exceed, milligram per litre(mg/l), except pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>5.5-9.0</td>
</tr>
<tr>
<td>Total suspended solids</td>
<td>100</td>
</tr>
<tr>
<td>Bio-chemical oxygen demand (BOD)</td>
<td>30</td>
</tr>
<tr>
<td>Chemical oxygen demand(COD)</td>
<td>250</td>
</tr>
<tr>
<td>Total residual chlorine</td>
<td>1</td>
</tr>
<tr>
<td>Oil and grease</td>
<td>10</td>
</tr>
<tr>
<td>Total chromium as Cr</td>
<td>2</td>
</tr>
<tr>
<td>Sulphide as S</td>
<td>2</td>
</tr>
<tr>
<td>Phenolic compounds as C₆H₅OH</td>
<td>1</td>
</tr>
</tbody>
</table>

**Note:**

1. Where the treated effluent is discharged into municipal sewer leading to terminal treatment plant, the BOD may be relaxed to 100 mg/l and COD to 400 mg/l.
2. The quantity of effluent (litre per kilogram of product) shall not exceed 100, 250 and 80 in composite cotton textile industry, composite woolen textile industry and textile processing industry, respectively.
Guidelines for the CETP Trust and member units of the CETP Trust

(a) Member units of the CETP Trust

i. The industry should be established only after following due procedure of law regarding registration, allotment of land and other permission/consent from competent authority

ii. Industry should obtain membership of local CETP Trust with allowed quantity of effluent discharge.

iii. Adequately designed primary treatment facility so as to achieve standards prescribed for inlet of CETP should be installed.

iv. A good quality water meter should be installed at the outlet of the ETP. Industries having effluent generation less than 10 KLD may install a mechanical water meter, however, the industries having effluent generation equal to or more than 10 KLD needs to install electronic water meters.

v. Industry should have only one single outlet for discharge of effluent to drain leading to CETP.

vi. Industry needs to carry out plantation in 33% of the factory area.

vii. Good housekeeping shall be maintained by keeping check on leaking valves, crack and fissures in pipes, faulty equipment etc so as to avoid wastage of water and other raw materials/resources.

viii. Industry will strive for adopting process/plant modifications which result in to waste minimization and conservation of chemicals, energy and water.

(b) For the CETP Trusts

i. The Trust will ensure that the quantity of waste water received at the CETP never exceeds the designed capacity of the CETP so that at no point of time untreated waste water is discharged by passing the CETP.
ii. The Trust shall develop a mechanism to monitor quantity of effluent being discharged by the member units.

iii. Power back up arrangement in the form of D.G. sets should be installed for continuous operation of CETPs even during power failure.

iv. Good quality electronic flow meter should be installed to measure inlet/outlet quantity of waste water at CETP.

v. The raw effluent from all the member units should be conveyed to the CETP through closed pipelines only. No raw effluent should be transported through open drains.

vi. The discharge allowed by the Trust to each member unit should be based on scientific rational preferably based on likely effluent quantity generated from the member units depending on their manufacturing processes/machinery installed.

vii. CETP Trusts will be responsible to operate and maintain the CETPs as per the prescribed standards. It will ensure that the CETPs are operated and maintained by expert agencies only which have adequate experience and expertise in the field. Guidelines issued by the State Board/CPCB from time to time for operation and maintenance of CETPs will be complied with.

viii. That the sludge generated at the CETP will need to be stored in covered sheds as per the prescribed guidelines and should be preferably co-incinerated in cement kilns.

ix. Treated effluent quality of the CETP has to comply with the discharge standards prescribed under EPA, 1986.

x. The Trust will strive for making arrangements for recycling of the treated effluent by installing tertiary treatment in the form of RO plants etc.

xi. That the Trusts will be responsible for carrying regular ground water and surface water quality monitoring of the receiving water and ground water along its reaches.

xii. The Trust should develop their own mechanism to monitor the compliance of the conditions of the NOC issued by them.
# List of Harmful Dyes, Pigments and Other Chemicals and their Alternatives

## (1) Usage of Alternative Dyes

<table>
<thead>
<tr>
<th>Banned Disperse Dye</th>
<th>CI Number</th>
<th>Alternative</th>
<th>CI Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disperse Yellow 7</td>
<td>23660</td>
<td>Disperse Yellow 15</td>
<td></td>
</tr>
<tr>
<td>Disperse Yellow 23</td>
<td>22130</td>
<td>Disperse Orange 102</td>
<td>29156</td>
</tr>
<tr>
<td>Disperse Blue 12</td>
<td>3900</td>
<td>Disperse Red 81</td>
<td>28160</td>
</tr>
<tr>
<td>Disperse Orange 50</td>
<td>22145</td>
<td>Disperse Red 120</td>
<td>25275</td>
</tr>
<tr>
<td>Disperse Yellow 24</td>
<td>29185</td>
<td>Disperse Yellow 23</td>
<td>29160</td>
</tr>
<tr>
<td>Disperse Yellow 46</td>
<td>23050</td>
<td>Disperse Yellow 31</td>
<td>29100</td>
</tr>
<tr>
<td>Disperse Yellow 62</td>
<td>29175</td>
<td>Disperse Yellow 4</td>
<td>29165</td>
</tr>
<tr>
<td>Disperse Yellow 1</td>
<td>22570</td>
<td>Disperse Violet 66</td>
<td>29120</td>
</tr>
<tr>
<td>Disperse Yellow 2</td>
<td>22311</td>
<td>Disperse Yellow 112</td>
<td>29166</td>
</tr>
<tr>
<td>Disperse Yellow 29</td>
<td>22580</td>
<td>Disperse Yellow 51</td>
<td>27720</td>
</tr>
</tbody>
</table>

## Safer Alternatives for Banned Acid Dyes

<table>
<thead>
<tr>
<th>Banned Acid Dye</th>
<th>CI Number</th>
<th>Alternative</th>
<th>CI Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid Orange 45</td>
<td>22195</td>
<td>Acid Orange</td>
<td>1914690</td>
</tr>
<tr>
<td>Acid Red 4</td>
<td>14710</td>
<td>Acid Red 157</td>
<td>17990</td>
</tr>
<tr>
<td>Acid Red 5</td>
<td>14905</td>
<td>Acid Red 191</td>
<td>14730</td>
</tr>
<tr>
<td>Acid Red 24</td>
<td>16140</td>
<td></td>
<td>17900</td>
</tr>
<tr>
<td>Acid Red 26</td>
<td>16150</td>
<td>Acid Red 37</td>
<td>17045</td>
</tr>
<tr>
<td>Acid Red 115</td>
<td>27200</td>
<td>Acid Violet 72</td>
<td>42665</td>
</tr>
<tr>
<td>Acid Red 49</td>
<td>42640</td>
<td>Acid Violet 13</td>
<td>16640</td>
</tr>
</tbody>
</table>
### Safer Alternatives for Banned Direct Dyes

<table>
<thead>
<tr>
<th>Banned Direct Dye</th>
<th>CI Number</th>
<th>Alternative</th>
<th>CI Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Yellow 48</td>
<td>23660</td>
<td>Direct Yellow 15</td>
<td></td>
</tr>
<tr>
<td>Direct Orange 8</td>
<td>22130</td>
<td>Direct Orange 102</td>
<td>29156</td>
</tr>
<tr>
<td>Direct Red 2</td>
<td>23900</td>
<td>Direct Red 81</td>
<td>28160</td>
</tr>
<tr>
<td>Direct Red 10</td>
<td>22145</td>
<td>Direct Red 120</td>
<td>25275</td>
</tr>
<tr>
<td>Direct Red 24</td>
<td>29185</td>
<td>Direct Red 23</td>
<td>9160</td>
</tr>
<tr>
<td>Direct Red 46</td>
<td>23050</td>
<td>Direct Red 31</td>
<td>29100</td>
</tr>
<tr>
<td>Direct Red 62</td>
<td>29175</td>
<td>Direct Red 4</td>
<td>29165</td>
</tr>
<tr>
<td>Direct Violet 1</td>
<td>22570</td>
<td>Direct Violet 66</td>
<td>29120</td>
</tr>
<tr>
<td>Direct Brown 2</td>
<td>22311</td>
<td>Direct Brown 112</td>
<td>29166</td>
</tr>
<tr>
<td>Direct Black 29</td>
<td>22580</td>
<td>Direct Black 51</td>
<td>22720</td>
</tr>
</tbody>
</table>

Source: Environmental Quick Scan Textiles, compiled for CBI and SIDA by Consultancy and Research for Environmental Management, Published by CBI, SIDA, VIVO, 1996

### Use of Alternative Pigments used in Printing

<table>
<thead>
<tr>
<th>Suspected Pigment</th>
<th>CI Number</th>
<th>Alternative</th>
<th>CI Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigment Orange 50</td>
<td>20170</td>
<td>Pigment Orange 38</td>
<td></td>
</tr>
<tr>
<td>Pigment Yellow 12</td>
<td>21090</td>
<td>Pigment Yellow 147</td>
<td>12367</td>
</tr>
<tr>
<td>Pigment Yellow 63</td>
<td>21091</td>
<td>Pigment Yellow 148</td>
<td>50600</td>
</tr>
<tr>
<td>Pigment Yellow 126</td>
<td>21101</td>
<td>Pigment Yellow 5</td>
<td>11660</td>
</tr>
<tr>
<td>Pigment Red 39</td>
<td>21080</td>
<td>Pigment Red 87</td>
<td>73310</td>
</tr>
<tr>
<td>Pigment Yellow 176</td>
<td>21103</td>
<td>Pigment Yellow 101</td>
<td>48052</td>
</tr>
<tr>
<td>Pigment Yellow 114</td>
<td>21092</td>
<td>Pigment Yellow 10</td>
<td>12710</td>
</tr>
</tbody>
</table>

Source: Environmental Quick Scan Textiles, compiled for CBI and SIDA by Consultancy and Research for Environmental Management, Published by CBI, SIDA, VIVO, 1996
### (3) Chemical Substitution

<table>
<thead>
<tr>
<th>Process</th>
<th>Chemical</th>
<th>Substitute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sizing</td>
<td>Starch based wrap sizes by PVA</td>
<td>Acrylates or partial substitution</td>
</tr>
<tr>
<td>Desizing Scouring</td>
<td>Acid</td>
<td>Hydrogen Peroxide and enzymes</td>
</tr>
<tr>
<td>Aqueous Scouring</td>
<td>Alkylphenol Ethoxylates TSP, NaOH</td>
<td>Fatty alcohol ethoxylates Sodium Carbonate</td>
</tr>
<tr>
<td>Detergent Scouring</td>
<td>Alkyl benzene sulphonates</td>
<td>Fatty alkyl sulphates Polyglycolether</td>
</tr>
<tr>
<td>Light Scouring</td>
<td>NTA, EDTA</td>
<td>Zeolites (sodium aluminium Silicate)</td>
</tr>
<tr>
<td>Bleaching</td>
<td>Reductive sulphur bleaches</td>
<td>Peroxide bleaches</td>
</tr>
<tr>
<td></td>
<td>Chlorine compounds</td>
<td>Peroxide Bleaches</td>
</tr>
<tr>
<td>Dyeing</td>
<td>Benzidine based dyestuffs and other amine releasing dyes</td>
<td>Mineral/pigment dyes single class dyes like indigso, pigments, reactives</td>
</tr>
<tr>
<td></td>
<td>Dichromate used for oxidation in vat and sulphur dyes</td>
<td>Peroxide, air oxygen, metal free agents</td>
</tr>
<tr>
<td></td>
<td>Acetic acid in the dyeing bath</td>
<td>Formic acid</td>
</tr>
<tr>
<td></td>
<td>Dispersants for dyes and chemicals</td>
<td>Water based system</td>
</tr>
<tr>
<td></td>
<td>Copper sulphate used to treat direct dyes</td>
<td>Polymeric compounds</td>
</tr>
<tr>
<td></td>
<td>Dye powder in automatic injection</td>
<td>Liquid dyes</td>
</tr>
<tr>
<td></td>
<td>Sodium hydrosulphite</td>
<td>Stabilized sodium hydrosulphite</td>
</tr>
<tr>
<td></td>
<td>Aldehyde and toxic metallic salts used as auxiliaries</td>
<td>High molecular weight polymeric auxiliaries</td>
</tr>
<tr>
<td>Crayoning</td>
<td>Sodium sulphide</td>
<td>Glucose based reducing agents</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Printing</td>
<td>Kerosene or white spirit</td>
<td>Water based systems</td>
</tr>
<tr>
<td>Finishing</td>
<td>Formaldehyde</td>
<td>Poly carboxylic acid</td>
</tr>
<tr>
<td></td>
<td>Alkyl phenol</td>
<td>Fatty alcoholethoxylates</td>
</tr>
<tr>
<td>Anti-wrinkle finishing</td>
<td>Dimethylol dihydroxyethylene urea</td>
<td>(Poly carboxylic acids mainly 1,2,3,4 butane tetra carboxylic acid) Glyoxales</td>
</tr>
<tr>
<td>Flame retardant finishing</td>
<td>Asbestos, Halogenated compounds like, bromated diphenylethers (PBDEs) and heavy metal containing compounds</td>
<td>Inorganic salts and phosphonates</td>
</tr>
<tr>
<td>Preservation finishing</td>
<td>Biocides such as chlorinated phenols (PCP), metallic salts (As, Zn, Cu or Hg), DDE, DDT, Benzothiazole</td>
<td>UV Treatment, mechanical or enzymatic finishing</td>
</tr>
</tbody>
</table>

*Source: Textile Sector Part A*  
([http://www.eea.gov.eg.seam/Manuals/TextilesectorReport/content.htm](http://www.eea.gov.eg.seam/Manuals/TextilesectorReport/content.htm))
### Annexure 17.5

**BOILERS (SMALL)**

<table>
<thead>
<tr>
<th>Steam generation capacity (ton/hour)</th>
<th>Particulate matters emission (mg/Nm³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 2</td>
<td>1200*</td>
</tr>
<tr>
<td>2 to less than 10</td>
<td>800*</td>
</tr>
<tr>
<td>10 to less than 15</td>
<td>600*</td>
</tr>
<tr>
<td>15 and above</td>
<td>150*</td>
</tr>
</tbody>
</table>

- to meet the respective standards, cyclone/multicyclone is recommended as control equipment with the boiler.
- To meet the standard, bag filter/ESP is recommended as control equipment with the boiler.

**Note:**

(i) 12% of CO₂ correction shall be the reference value for particulate matter emission standards for all categories of boilers.

(ii) These limits shall supersede the earlier limits notified under Schedule I at serial number 34 of Environment (Protection) Act, 1986 vide notification GSR 74(E), dated 30th August, 1990.

(iii) Stack Height for small Boilers.

For the small boilers using coal or liquid fuels, the required stack height with the boiler shall be calculated by using the formula.

\[ H = 14Q^{0.3} \]

Where \( H \) is total stack height in meters from the ground level.

\( Q = \text{SO}_2 \text{ emission rate in kg/hr.} \)

In no case the stack height shall be less than 11 meters.

Where providing tall stacks are not feasible using above formula the limit of 400 mg/Nm³ for \( \text{SO}_2 \) emission shall be met by providing necessary control equipment with a minimum stack height of 11 meters.

Source: EPA Notification (GSR 176 (E), April 2, 1996)
Emission Standards for bagasse fired boilers

<table>
<thead>
<tr>
<th>BAGASSE-FIRED BOILERS</th>
<th>EMISSIONS</th>
<th>(Concentration in mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Step Grate</td>
<td>Particulate Matter</td>
<td>250</td>
</tr>
<tr>
<td>(b) Horse shoe/pulsating grate</td>
<td>Particulate Matter</td>
<td>500 (12% CO₂)</td>
</tr>
<tr>
<td>(c) Spreader Stroker</td>
<td>Particulate Matter</td>
<td>800 (12% CO₂)</td>
</tr>
</tbody>
</table>

Note: In the case of horse shoe and spreader stroker boilers, if more than one boiler is attached to a single stack, the Standard shall be fixed based on added capacity of all the boilers connected with the stack.

GSR 475 (E) dated 5.05.1992
## Annexure 17.7

### National Ambient Air Quality Standards (NAAQS)

<table>
<thead>
<tr>
<th>S. No</th>
<th>Pollutant</th>
<th>Time Weighted Average</th>
<th>Concentration in Industrial, Residential, Rural and other areas</th>
<th>Ecologically sensitive area (notified by central government)</th>
<th>Methods of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
</tbody>
</table>
| 1     | Sulphur dioxide (SO₂), µg/m³ | Annual*               | 24 hours**         | 50                | 20                             | -Improved West & Gaekke  
- Ultraviolet fluorescence |
| 2     | Nitrogen Dioxide (NO₂), µg/m³ | Annual*               | 24 hours**         | 40                | 30                             | -Modified Jacob & Hochheiser (Na-arsenate) 
- Chemiluminescence |
| 3     | Particulate Matter (Size less than 10 µm) or PM₁₀ µg/m³ | Annual*               | 24 hours**         | 60                | 60                             | - Gravimetric  
- TOEM  
- Beta attenuation |
| 4     | Particulate Matter (Size less than 2.5 µm) or PM₂.₅ µg/m³ | Annual*               | 24 hours**         | 40                | 40                             | - Gravimetric  
- TOEM  
- Beta attenuation |
| 5     | Ozone (O₃) µg/m³ | 8 hours**             | 1 hour**           | 100               | 100                            | - UV photometric  
- Chemiluminescence  
- Chemical method |
| 6     | Lead (Pb) µg/m³ | Annual*               | 24 hours**         | 0.50              | 0.50                           | - AAS/ICP method after sampling on EPF 2000 or equivalent filter paper  
- ED-XRF using Teflon filter |
| 7     | Carbon Monoxide (CO) mg/m³ | 8 hours**             | 1 hour**           | 02                | 02                             | - Non Dispersive Infra Red (NDIR) spectroscopy |
| 8     | Ammonia (NH₃) µg/m³ | Annual*               | 24 hours**         | 100               | 100                            | - Chemiluminescence  
- Indophenol blue method |
| 9     | Benzene (C₆H₆) µg/m³ | Annual*               | 01                 | 05                | 05                             | - Gas chromatography based continuous analyzer  
- Adsorption and Desorption followed by GC analysis |
| 10    | Benzo(a)Pyrene (BaP) - particulate phase only, ng/m³ | Annual*               | 01                 | 01                | -Solvent extraction followed by HPLC/GC analysis |
| 11    | Arsenic (As) ng/m³ | Annual*               | 06                 | 06                | - AAS/ICP method after sampling on EPF 2000 or equivalent filter paper |
| 12    | Nickel (Ni) ng/m³ | Annual*               | 20                 | 20                | - AAS/ICP method after sampling on EPF 2000 or equivalent filter paper |

* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals

** 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year. 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.

**Note:**

Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

*(Source: National Ambient Air Quality Standards, CPCB Notification dated 18th November 2009)*
## Noise Ambient Air Quality Standards

<table>
<thead>
<tr>
<th>Area code</th>
<th>Category of area</th>
<th>Limits in db (A) Leq</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Industrial area</td>
<td>Day time: 75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Night time: 70</td>
</tr>
<tr>
<td>B</td>
<td>Commercial area</td>
<td>Day time: 65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Night time: 55</td>
</tr>
<tr>
<td>C</td>
<td>Residential area</td>
<td>Day time: 55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Night time: 45</td>
</tr>
<tr>
<td>D</td>
<td>Silence zone</td>
<td>Day time: 50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Night time: 40</td>
</tr>
</tbody>
</table>

**Note:**

1. Day time shall mean from 6.00 a.m. to 10.00 p.m.
2. Night time shall mean from 10.00 p.m. to 6.00 a.m.
3. Silence zone is an area comprising not less than 100 meters around hospitals, educational institutions, courts, religious places or any other area, which is declared as such by the competent authority.
4. Mixed categories of areas may be declared as one of the four above-mentioned categories by the competent authority.

* dB(A) Leq denotes the time weighted average of the level of sound in decibels on scale A which is relatable to human hearing.

A “decibel” is a unit in which noise is measured.

“A”, in dB(A) Leq, denotes the frequency weighting in the measurement of noise and corresponds to frequency response characteristics of the human ear.

Leq: It is an energy mean of the noise level over a specified period.

*(Source: Noise pollution (Regulation and control) Rules, 2000)*
PERFORMA AFFIDAVIT FOR CTE/CTO AFFIDAVIT

(To be submitted on stamp paper of rupees ten and duly attested by notary)

I, _____________ (with name and designation) S/o Shri ________________
Resident of _______________ do solemnly affirm and declare as under:-

1. That I am responsible for establishing/operating the unit named M/s.
   ________________ (Name & address of the unit).

2. That I, _______________ (with name and designation) am authorised to sign the consent
   application form and other enclosures with the application.

3. That the plot area of the unit is ________________ Sq. Meters.

4. That the number of workers to carry out various activities in the unit is
   ________________.

5. That the total number of employees proposed in the unit is ____________.

6. That the total capital investment on the project is Rs. ____________.

7. That this Consent to Establish/Operate is being obtained for manufacturing of/providing
   service for ________________ up to ________________ per year. In case of any increase/change in
   capacity or addition/modification/alteration or change in process or raw material or project or
   discharge points, we will obtain fresh Consent to Establish.

8. That the quantity of trade/domestic effluent shall not exceed _______ KLD. The mode of
   disposal shall be ________________. In case of any increase in quantity of effluent or alteration in
   outlet or mode of disposal, we shall obtain prior consent from the Board.

   OR

   That there will no effluent discharge from the premises (applicable only in the case of dry units).

9. That the industry is a small/medium/large scale unit with SSI Registration No. /DGTD
   Registration No. /Letter of Intent No. ____________.

10. That all adequate measures for control and treatment of water/air pollution from the various
    processes/activities shall be taken to meet the prescribed standards as per the Environment
    (Protection) Rules, 1986 as amended to date.
DEPONENT

VERIFICATION

Verified at _______ on this __________(day, month and year) that the above contents of this affidavit are true and correct to the best of my knowledge and belief and nothing has been concealed there from.

DEPONENT

Note: The aforementioned Affidavit must be duly signed by the Deponent and duly attested by the Notary Public thereof.

Note: Please omit whatever is not applicable.