GT VET: Greening Technical VET Sustainable Training Module for the European Steel Industry

Industry Driven Job Requirements
National Report

D.6.4.1

Italy (WP 2)

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Introduction

This report contains the information concerning both the Italian legislation concerning the environmental and the health and safety regulations at the work places and the inner rules and policies concerning the same issues at the TK AST. Furthermore, the report will refer also on data collected through interview to relevant people at the steel company in Terni.

1 Environmental Statute

The Italian legislation on environment is organised, following the European, one with specification concerning waste, emission to atmosphere, emission to water, pollution of land and ground water and the most recent issue concerning climate change and efficient production and use of energy.

1.1 Waste

The following list shows a summary of the Italian legislation on waste organised in various chapter as indicated by the European relevant directives. It should also be noted that, due to the high level of autonomy of the regional government, a regional legislation could also exists for some of the following sub-chapter.

The complexity of such a framework make not easy for the steel enterprises, both the main ones and the subcontractors, to implement the legislation in all their parts.

The direct role and responsibility of maintenance technicians is very important in all the different chapters because, in many cases, they are the people directly involved in the generation of wastes due to their maintenance activity resulting is substitution.
of plants parts. They have also a fundamental role on classification of wastes as the first step for recycling of addressing them to appropriate disposals.


**Transposition deadline:** 12/12/2010


**Transposition deadline:** 17/07/2001
1. Definizione dei criteri di ammissibilità dei rifiuti in discarica.
2. Inserita nella Legge n. 422 del 29 dicembre 2000 (Allegato B - Legge comunitaria 2000) GURI n.16 del 20/01/2001 - S.O. n. 14/L
Legal act: Decreto; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, Publication date: 12/03/2003, Entry into force: 13/01/2003

Legal act: Decreto; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, Publication date: 21/03/2003, Entry into force: 13/03/2003

5. Definizione dei criteri di ammissibilità dei rifiuti in discarica, in sostituzione di quelli contenuti nel decreto del Ministro per l'Ambiente e della tutela del territorio 3 agosto 2005
Legal act: Decreto ministeriale; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, number: 281, Publication date: 01/12/2010, Entry into force: 01/12/2010; Reference: (MNE(2011)50354)


Transposition deadline: 13/08/2004


2. Disposizioni per l'adempimento di obblighi derivanti dall'appartenenza dell'Italia alle Comunità europee. (Legge comunitaria 2007).
Legal act: Legge, number: 34; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, number: S.O. n. 54/L - GU n. 56, Publication date: 06/03/2008; Reference: (MNE(2008)51787)

Legal act: Decreto ministeriale; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, number: 233, Publication date: 06/10/2007; Reference: (MNE(2007)59033)

4. Riduzione dell'uso di sostanze pericolose nelle apparecchiature elettriche ed elettroniche, nonché allo smaltimento dei rifiuti


Legal act: Decreto legislativo, number: 151; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, number: 175 - S.O. 135/L; Reference: (MNE(2005)55496)


Transposition deadline: 29/06/1996

1. Decreto legislativo del 05/02/1997 n. 22, attuazione delle direttive 91/156/CEE sui rifiuti, 91/689/CEE sui rifiuti pericolosi e 94/62/CE sugli imballaggi e sui rifiuti di imballaggio Supplemento ordinario n.33 alla GURI - Serie generale n° 38 del 15/02/1997 pag. 3


4. Decreto ministeriale del 05/02/1998, individuazione dei rifiuti non pericolosi sottoposti alle procedure semplificate di recupero ai sensi degli articoli 31 e 33 del decreto legislativo 05/02/1997 n. 22 Supplemento ordinario n. 72 alla GURI - Serie generale - del 16/04/1998 n. 88
Legal act: Decreto; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, number: 72, Publication date: 16/04/1998, Entry into force: 05/02/1998

5. Decreto ministeriale del 01/04/1998 n. 148, regolamento recante approvazione del modello dei registri di carico e scarico dei rifiuti ai sensi degli articoli 12, 18, comma 2, lettera m), e 18, comma 4, del decreto legislativo 5 febbraio 1997, n. 22 GURI - Serie generale - del 14/05/1998 n. 110 pag. 23


7. Decreto ministeriale del 11/03/1998 n. 141, regolamento recante norme per lo smaltimento in discarica dei rifiuti e per la catalogazione dei rifiuti pericolosi smaltiti in discarica GURI - Serie generale - del 12/05/1998 n. 108 pag. 22

Legal act: Legge, Entry into force: 07/05/2003
1.2 Generation of Emissions to Atmosphere

As in the former case, the legislation in this important part is organised as the European one. This chapter is also particularly important for the external “image” of the steel companies to the local communities and the territory where they operates their activities.

The impact is particularly heavy and visible for the integrated steel production sites (ex. coke quenching) with emission in atmosphere of steam, dustes and gases but is also relevant for the EAF production cycle.

Although the task of technicians is not easy they, together with the operators of plants, are deeply involved in the prevention and in quick intervention in case of emergency events. The complexity of the case need a full knowledge of the production cycle.


NO REFERENCE AVAILABLE

Transposition deadline: 10/06/2010

1. Attuazione della direttiva 2008/50/CE relativa alla qualità dell’aria ambiente e per un’aria più pulita in Europa.


NO DOCUMENTS

1.3 Generation of Emissions to Water

Without repeating what has been written in the former chapters, it must be noted that in this case the technicians role is mainly related to the management of technical fluids, those used directly in the production processes and those used as lubricants. Due to the scale effect, is also very important to have full control of possible continuous leakages that in the past have been tolerated on the base of evaluation of cost-benefit. This oblige companies to a radical change of their approach to the problems pushing for a new awareness of problems.


Transposition deadline: 22/12/2003

1. Decreto legislativo 3 aprile 2006, n. 152 Norme in materia ambientale

1.4 Climate Change

In the last years, as a consequence of increased sensibility to the climate change issues, the new EU political orientation and international commitments, the climate change has become the top priority in the European legislation. Two fields are important in this context: the energy efficient production and use and the reduction of GHGs emissions.

Energy Intensive Industries are particularly affected by this new legislation and the quest of solutions is of fundamental importance for the future of these sectors.
The steel sector is strongly committed to find breakthrough technologies in the medium-long term but is important to implement day by day activities for a continuous improvement in this field. Maintenance technicians are in the front line of this activities.

2 Health and Safety Statute
Several legislative acts are related to this particular issue. The “mother” of all the European legislation is the framework directive 89/391/EEC of 12 June 1989 followed by its “doughters” specifying the various elements.

2.1 General employer duties.
The main objective of the EU legislation has been prevention through the identification-elimination of risks and companies’ responsible. For some EU countries, Italy is one of them, this has been a totally been approach related to their former traditions and quality of industrial relations.

One of the main innovations is the workers’ direct and indirect participation to the risk assessment procedures. The maintenance technicians, as written before, are in the front line with direct contacts with the real production sites and the relevant machinery, dangerous substances and noise sources.

Apart of the specific risks related to their activities, their role is also important for their colleagues continuously operating in the working places.

Adoption to the national law (the national execution measures)

Transposition deadline: 31/12/1992


2. Decreto legislativo del 19/03/1996 n. 242, modifiche ed integrazioni al decreto legislativo 19 settembre 1994, n. 626, recante attuazione di direttive comunitarie riguardanti il miglioramento della sicurezza e della salute dei lavoratori sul luogo di lavoro Suplemento ordinario n.75 alla GURI - Serie generale - del 06/05/1996 n. 104 pag. 3
Legal act: Decreto, number: 242; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, number: 104, Publication date: 06/05/1996, Page: 3, Entry into force: 19/03/1996


Transposition deadline: 31/12/1992

2.2 Personal Protective Equipment

Mechanical and electrical technicians should be provided with appropriate PPE, in accordance with the scope of their work and operate and use equipment as directed and should receive instruction on how to do so. Where the nature of the tasks in certain areas demands, workers should be provided with PPE, designed specifically to protect against hazards within in that particular department.

**Personal Protective Equipment**


**Adoption to the national law (the national execution measures)**

**Transposition deadline:** 31/12/1991


2.3 Exposure to Chemical and Physical Agents

Many European directives (see the following list) are dealing with the workers’ exposure to physical and chemical agents and substances at the workplace.

Risk of exposure to hazardous chemicals and industrial gases for mechanical and electrical technicians while performing their daily duties such as repairs and maintenance of machines and installations, and moving around the site. They should also be protected against noise during their work activities and be trained to face potentially dangerous situations as those Potentially Explosive Atmospheres.

They must be aware and trained to the new European legislation on Registration, Evaluation, Authorisation and restriction of Chemicals in force since 2007, particularly to the new labelling regulation of chemicals.

Dangerous agents at work

COUNCIL DIRECTIVE of 7 April 1998 (98/24/EC) on the protection of the health and safety of workers from the risks related to chemical agents at work (fourteenth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC).

Adoption to the national law (the national execution measures)

Transposition deadline: 05/05/2001
Legal act: Decreto; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, Publication date: 08/03/2002, Page: 58, Entry into force: 02/02/2002

2. Inserita nella Legge N. 422 del 29 dicembre 2000 (Allegato A, legge comunitaria 2000) GURI n. 16 del 20/01/2001 - S.O. n. 14/L

Exposure to chemical agents and chemical safety

Directive 2004/37/EC - carcinogens or mutagens at work of 29 April 2004 on the protection of workers from the risks related to exposure to carcinogens or mutagens at work (Sixth individual Directive within the meaning of Article 16(1) Directive 89/391/EEC.

Adoption to the national law (the national execution measures)

NO REFERENCE AVAILABLE


Adoption to the national law (the national execution measures)

NO REFERENCE AVAILABLE
Directive 2009/148/EC - exposure to asbestos at work of 30 November 2009 on the protection of workers from the risks related to exposure to asbestos at work (Text with EEA relevance).

Adoption to the national law (the national execution measures)

NO REFERENCE AVAILABLE


Adoption to the national law (the national execution measures)

Transposition deadline: 31/12/2001


Adoption to the national law (the national execution measures)

Transposition deadline: 01/09/2007

   Legal act: Decreto legislativo, number: 81; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, number: S.O. n. 101, Publication date: 30/04/2008; Reference: (MNE(2008)52965)

Legal act: Decreto ministeriale; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, number: 48, Publication date: 26/02/2008; Reference: (MNE(2008)51526)


Adoption to the national law (the national execution measures)

Transposition deadline: 31/12/1993


Noise


Adoption to the national law (the national execution measures)

Transposition deadline: 14/02/2006
Artificial optical radiation


Adoption to the national law (the national execution measures)

Transposition deadline: 27/04/2010


Legal act: Decreto legislativo, number: 81; Official Journal: Gazzetta Ufficiale della Repubblica Italiana, number: S.O. N.108/L - GU N. 101, Publication date: 30/04/2008; Reference: (MNE(2008)52938)
3 TK AST Steel Policy – Environmental/ Health and Safety

3.1. Environmental Position
ThyssenKrupp Acciai Speciali Terni (recently INOXUM) is strongly committed to respect and implement the legislation concerning environment involving all the personnel at all the different level of responsibility. This commitment has been stated in many official documents and positions papers.

It is important to note that recently the attention has shifted from the traditional environmental problems related to the steel production technologies to the ones related to climate changes, particularly the efficient use of energy and climate change.

The efficient use of energy has always been one of the main objective of the company due to the high energy costs in Italy compared to other countries both in the European and International context.

The climate change is mainly related to the CO2 emissions and the company participate to the ETS as implemented by the European directive.
3.1.1 Involvement of Mechanical and Electrical operators

<table>
<thead>
<tr>
<th>Role</th>
<th>Main functions</th>
<th>Environmental impact</th>
<th>Protective actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical maintenance operator</td>
<td>Takes all safety measures to plants for recovery operations; verifies the electric or electronic nature of failure; identifies electronic failures and calls electronic maintenance operator for repair; solves electric failures</td>
<td>Waste disposal</td>
<td>Capillary separate waste collection of:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. copper; 2. alloys; 3. gloves; 4. oil-imbued cloths and garments; 5. unrecoverable electric spares</td>
</tr>
<tr>
<td>Mechanical maintenance operator</td>
<td>Identifies and solves mechanical failures of plants</td>
<td>Oil and lubricant disposal</td>
<td>Application of leakage reducing procedures e.g. changing stand speed; increasing temperature etc..</td>
</tr>
<tr>
<td>Electronic maintenance operator</td>
<td>Restarts electronic equipment that supervises the control of plant movements</td>
<td>Waste disposal</td>
<td>Capillary separate waste collection of:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1. control PCs; 2. cards; 3. sensors; 4. special equipment (e.g.: strip thickness gauges)</td>
</tr>
</tbody>
</table>

The table summarizes the main tasks of the mechanical and electrical-electronic operators related to the environmental issues.

Responsibility for environmental (and related health and safety) issues and specific regulations impacting upon electrical and mechanical technicians tasks are:

- Correct waste disposal, after maintenance operations (respect of maintenance plants for steam cutting down; exhaust gas system; promoting of capillary waste disposal);
- Checking that no occasional pollutant flowing back of the plant, overflows to the water after maintenance operations.
At TK AST, the Mechanical and Electrical Technicians are involved in Environmental/green aspects of skilled work, namely:

- Slag and refractory recycling project
- Water recirculation
- Separated waste collection
- Energy optimisation

Furthermore, company promotes and monitors environmental/health and safety strategy/policy with periodical meetings with corporate entities and contractors.

Over the last year the most important developments for the steel industry changed in relation to environmental issues within the company with direct impact on the tasks of mechanical and electrical technicians, trough:

- REACH to record the effects on health of chemical substances
- IPPC directive (integrated pollution, prevention and control)
- The fulfilment of prescription included in AIA (integrated company permit)
- Emissions trading (Kyoto protocol for emissions of CCo2), with reference to the period 2013/20

### 3.2 Position on Health and Safety

The following scheme shows the main principles of the TK AST concerning the health and safety management in the company.

Priority is given to the human factor an to the organisational managerial aspects as the result of the evolution of policies in the last decades up to the actual situation.
The implementation of this company policy is done utilising powerful tools as the continuous education (TK AST has a very advanced and effective training and education centre within the Terni’s steelworks), the technical prevention by means of all the available knowledge in all the main domains and the management system for the coordination of activities including the corporate social responsibility and the sustainable development.
Workers are continuously directly and indirectly (through their representatives) informed and involved in all the activity stages from the risk evaluation to the implementation of appropriate remedies.

Appropriate statistical continuous monitoring, based on indexes for accidents and diseases, is provided to assess the degree of policy implementation in the real production cycle.

In this general context, the company established the relevant tasks for the Mechanical and electrical maintenance technicians as follows:

The **Mechanical technician** assures functioning of plants by means of maintenance operations. His main tasks are:

- Minute maintenance of mechanical parts
- Mechanical inspections
- Safety measures on the mechanical parts of plants
- Troubleshooting
- Plant cleaning and tidying up
- Waste disposal
- Wastewater control

The **Electrical Technician** assures functioning of plants by means of operating maintenance. His main tasks are:

- Minute maintenance of electrical equipment
- Electrical maintenance
- Preventive maintenance of electrical parts
- Safety measures on the electric parts of plants
- Troubleshooting
• Gearing recovery
• Electric black-out recovery
• Plant cleaning
• Waste disposal

4 Empirical Data

4.1 Background - Structure
No interviews were conducted: the company provided information concerning the European, national legislations and the internal applied regulations.

TK AST allocate responsibilities on both the environmental and H&S issues to the same single department to underline the strict connections between the two fields in the concrete production and service activities and the external context (territory, city, local community)

4.2 Regulation and Legislation
Compliance with environmental legislation is sought in the areas of waste, air, water, land and groundwater contamination, as well as carbon dioxide emissions under the ETS scheme.

In some cases the legislation is implemented extensively while in other cases only specific parts of it are applied, particularly where risks of internal and external pollution or contamination are higher.
The geographic location of the steelwork within the Terni’s urban area contributed to rise the level of awareness together with the positive effect of the correct environment management on costs and economic results.

Workforce engagement is seen as an essential element in securing such compliance. Although the company is positively willing to implement the EU and national legislation, the burden of bureaucratic procedures is considered by the company too much time consuming and costly.

4.3 Company Strategy
The company aim is however to move from compliance to improvement, with regulation seen as the baseline from which to progress.

Environmental protection and producer waste responsibility are and will increasingly be a challenge and a critical aspect in the neat future for the survival of industries.

Levers should be used to set up the basis for future development such as:

- Collective awareness campaigns on environmental protection *(improvement groups; awards)*
- General information on company-produced wastes and handling techniques;
- Location of waste disposal areas serving individual working areas;
- Incentives of eco-friendly behaviours
4.4 Workplace Culture and Practice
Changing behaviours and culture are an important aspect of a strategy. A complete reversal in taking care also the environmental issues and not only production cycle, need time and an everyday effort in changing many behaviours kept for a long time.

TK AST has already point out several target to reach in a short time and strengthen with a continuous specific training:

- To develop/increase the awareness of how maintenance may impact the environment
- To develop and/or spread environmentally friendly behaviours
- To know the distinction between ordinary and special wastes, the related handling methods and the location of storage and disposal places
- To be aware of industrial waste disposal systems and waste reduction practices

4.5 Occupational/Job Requirements
As stated in a former chapter, the environmental aspects of the work of mechanical and electrical technicians were identified.

TK AST clearly identified the need to develop, increase the awareness of how maintenance may impact the environment. The main point of this strategy is developing and spreading environmentally friendly behaviours.

To this purpose, it is of paramount importance to know the distinction between ordinary and special wastes, the related handling methods and the location of storage and disposal places, as far as to be aware of industrial waste disposal systems and waste reduction practices.
4.6 Training
At TK AST training is worked out and administered at the internal Training Centre, an entity recognized as a training agency and qualified to issue certificates and qualifications. On-the-job technical training is developed by AST’s own technicians.

Safety training is provided by contract agencies in compliance with the Italian safety regulation. Training includes a base refresher course on the fundamental principles of electricity, mechanics and electronics and courses on the operation of specific plants (e.g.: operating practices).

Concerning the environmental aspects, for the time being, training on the job is the only existing way to train new employees in strict cooperation with more experienced colleagues.

Specific training for operators on issues as reference laws and regulations, waste types, classifications and volumes, environmental impact, storage and disposal methods and waste minimization techniques is still missing.

4.7 Future Developments
In the recent past, production/operational issues were the priorities, with other issues (including environmental aspects) perceived as secondary. This is now felt to be changing – environmental aspects are ‘moving up the agenda’ and will ultimately become as central as health and safety actually is.

However, greater environmental awareness and workforce engagement is seen as essential to the progress of such an agenda. Environmental protection and producer
waste responsibility are and will increasingly be a challenge and a critical aspect in the near future for the survival of industries.

Levers should be used to set up the basis for future development such as collective awareness campaigns on environmental protection (*improvement groups; awards*), general information on company-produced wastes and handling techniques; location of waste disposal areas serving individual working areas, incentives of eco-friendly behaviours.

### 5. Conclusions

This report summarizes the main aspects concerning the state of the legislation and the company policies and organisation deployed at TK AST to face the challenge of a more aware maintenance technicians on the environmental issues. Naturally this is an ongoing process that need tools and guidance to be fully implemented to face the complex and demanding future challenge.