

Cement Sustainability Initiative (CSI)



Safety in the cement industry:
*Guidelines for measuring and
reporting*

October 2005

Health and safety

Version 2.0



World Business Council for
Sustainable Development



The Cement Sustainability Initiative (CSI)	2
Health and safety	4
Glossary of definitions	5
Definitions	6
• Exclusion or inclusion of data in CSI safety indicators	
• Safety indicators to report as CSI Group	
<i>Number of fatalities and fatality rate for directly employed</i>	
<i>Number of fatalities for indirectly employed</i>	
<i>Number of fatalities for third parties</i>	
<i>Lost Time Injuries (LTIs) and frequency and severity rates for directly employed</i>	
<i>Number of LTIs for indirectly employed</i>	
Some guidance in determining if an incident is work-related	9
• Injuries: facility premises	
• Injuries: off-facility premises	
• Restricted work after an injury	
Consolidated CSI reporting and communication	10
• Gathering of safety data from CSI member companies and creation of the report	
• Criteria regarding the use and publication of safety indicators	
Appendix	
• Draft sample CSI report format	11
About the WBCSD	12



The Cement Sustainability Initiative (CSI)

Background

Cement is one of the most widely used substances on the planet. Each year, nearly three tons of concrete (containing 10-15% cement) are consumed for each man, woman and child. Making cement is an energy and resource intensive process with both local and global impacts. Recognizing these facts, several cement companies initiated the Cement Sustainability Initiative (CSI) as a member-sponsored program of the World Business Council for Sustainable Development (WBCSD). Currently, sixteen cement companies, who together represent more than half the worldwide industry outside of China, sponsor the Initiative. Begun in late 1999, the Initiative has since enabled:

- 1 Independent research on the current performance of the industry and the major sustainability issues it faces;
- 2 A series of facilitated stakeholder dialogues in seven cities (Cairo, Curitiba, Bangkok, Lisbon, Brussels, Washington DC, and Beijing);
- 3 A set of independent recommendations to improve performance; and
- 4 An industry *Agenda for Action* to address the issues raised.

An external Assurance Group oversaw the research phase of the program, serving as advisor and “referee”. Dr. Mostafa Tolba (former Director of UNEP) chaired the group, which included Bill Reilly (former USEPA Administrator), Corinne Lepage (former Environment Minister of France), Victor Urquidi (former President, Colegio de Mexico), and István Lang (member and former President, Hungarian Academy of Science).

Current status

Major research reports were completed in March 2002, primarily by the Battelle Memorial Institute in the US, under contract with the WBCSD. An accounting protocol for reporting CO₂ emissions was developed in cooperation with the World Resources Institute. An industry action plan developed by the participating companies, and signed-off by their business leaders, was published in July 2002: The Cement Sustainability Initiative, Our Agenda for Action. Summary materials are available in nine languages through Earthprint, www.earthprint.com, or the project website, www.wbcscement.org.

Moving forward

Five Task Forces, each chaired by one or more of the participating companies, are developing materials promised in the Agenda for Action – primarily good practice guidelines, tools and procedures to be used by all CSI companies at their operating facilities, and made available on a world-wide basis for other cement companies to adapt as desired. Topics include:

- > Climate protection
- > Responsible use of fuels and raw materials
- > Employee health and safety
- > Emissions monitoring and reporting
- > Local impacts on land and communities

Several of these guidelines have involved active stakeholder consultations and partnerships. A facilitated stakeholder workshop was held in Brussels in November 2003. Some NGO organizations have provided ongoing expertise to specific task forces on an invitation basis.

Performance goals and targets

Work under this Initiative was divided into two areas: joint projects (such as the guidelines development) and individual company activities. The Initiative has not and does not plan to establish group targets for all the participating companies. This choice was made for two reasons: first, individual companies are far better able to set appropriate targets and timetables for their organizations. In a global Initiative such as this, different companies and different countries will necessarily have different priorities and resources available.

Meaningful targets can only be set in reference to meaningful company values and resources. Second, from a competitive standpoint, competition laws strictly limit the kinds of activities companies can engage in together. Several of the subject areas of the initiative are also strategic business issues for the companies involved. Group target setting could pose potentially serious legal issues.

Employee health and safety

Ensuring healthy and safe working conditions for employees and contractors is one of the most important issues for the cement industry. We recognize that more attention should be paid to this area across the whole industry and we are committed to playing a full part in that process.

While systems for reporting on individual company occupation-related illness and injury rates do exist, in most cases we are not currently able to report industry-wide figures. Past research correctly points out that public information in this area is difficult to find. From what we do know, we believe that the incident and injury rate in our industry is higher than others such as petrochemicals and petroleum refining. We regard this as unacceptable and believe that it is affecting the reputation of the cement industry as a whole.

This report provides standard, cross-company systems to measure, monitor and report on health and safety performance, which individual companies can then implement.



Health and safety

Until now, common reporting standards for employee health & safety were not consistent across the cement industry. The purpose of this document is to ensure the accurate register of all occupational injuries of the cement company members of CSI in order to have the same basis on which to produce a consolidated report of safety indicators.

- > This consolidated CSI report will allow a common platform able to report industry-wide figures in order to compare our industry against others and to have proper benchmarking.

More importantly, the CSI is committed to improving the industry safety record. So, another objective of having the same reporting platform is to have a starting point and subsequent tracking each year of these indicators to evaluate our progress in reducing accidents and injuries to our employees.

- > To ensure achievement of this objective, each member company will share an annual safety report with the CSI using the definitions and indicators specified in this document. The coordinator of the CSI Safety Group will consolidate the information into a single report including analysis of incident causes, frequency and trends.

A third objective is to encourage transparent and consistent future public safety reporting among all CSI members, and thereby to encourage excellence in safety performance throughout the industry.

- > Each CSI member company may, of course, decide to publish its safety data within its Annual Report or Corporate Sustainability Report. Such reporting should ideally be in accordance with the definitions and indicators used in this document. The CSI actively supports publication of safety data by its members as part of the industry's wider social responsibility commitments.



Glossary of definitions

Directly employed

Own employees, including full-time, part-time and temporary employees, the latter two estimated as full-time equivalents. These include employees in all companies where there is management control and companies where there are management/technical agreements.

Indirectly employed

Contractors and sub-contractors, also estimated as full-time equivalents. This includes all individuals, firms or corporations contracting for performance of specified work, either on a short-term (for a specific job) or long-term basis (such as drivers or maintenance crews).

Third party

Any person not categorized as directly or indirectly employed. Third parties typically include customers and visitors to company locations (whether specifically invited or not). Also included are drivers or passengers involved in off-site motor accidents with company vehicles, but only if there is company culpability.

Fatality

A death resulting from a work-related accident, with no time limit between the date of the accident and the date of death. Fatalities are reported for directly employed, indirectly employed and third parties. Excluded in all cases are all fatalities in transport to and from work, fatalities due to criminal acts, and fatalities due to natural causes.

Fatality rate

Number of fatalities in a year per 10,000 people directly employed.

Lost Time Injury (LTI)

A work-related injury causing the absence of one or more working days (or shifts), counting from the day after the injury, before the person returns to normal or restricted work. LTIs are reported for directly employed and indirectly employed; LTIs to third parties are not reported as there is no basis for counting lost working days. Excluded for both directly and indirectly employed are injuries in transport to and from work, injuries due to criminal acts, and injuries due to natural causes.

LTI frequency rate

Number of LTIs in a year per million hours worked.

LTI severity rate

Number of Lost Days in a year per million hours worked.

Worked hours

Actual hours worked.



Definitions

Definitions regarding exclusion or inclusion of data in CSI safety indicators

Several member companies operate several different business sectors (eg. asphalt, ceramics, chemicals, aggregates etc.) in addition to cement production. For the purposes of comparability within the Cement Sustainability Initiative, the CSI companies decided that the safety indicators and reporting criteria used will initially only be those directly linked with the cement manufacturing process as defined below.

The following activities are included in the scope of cement manufacturing process (see figure on following page) when they are under the direct or indirect management of the company:

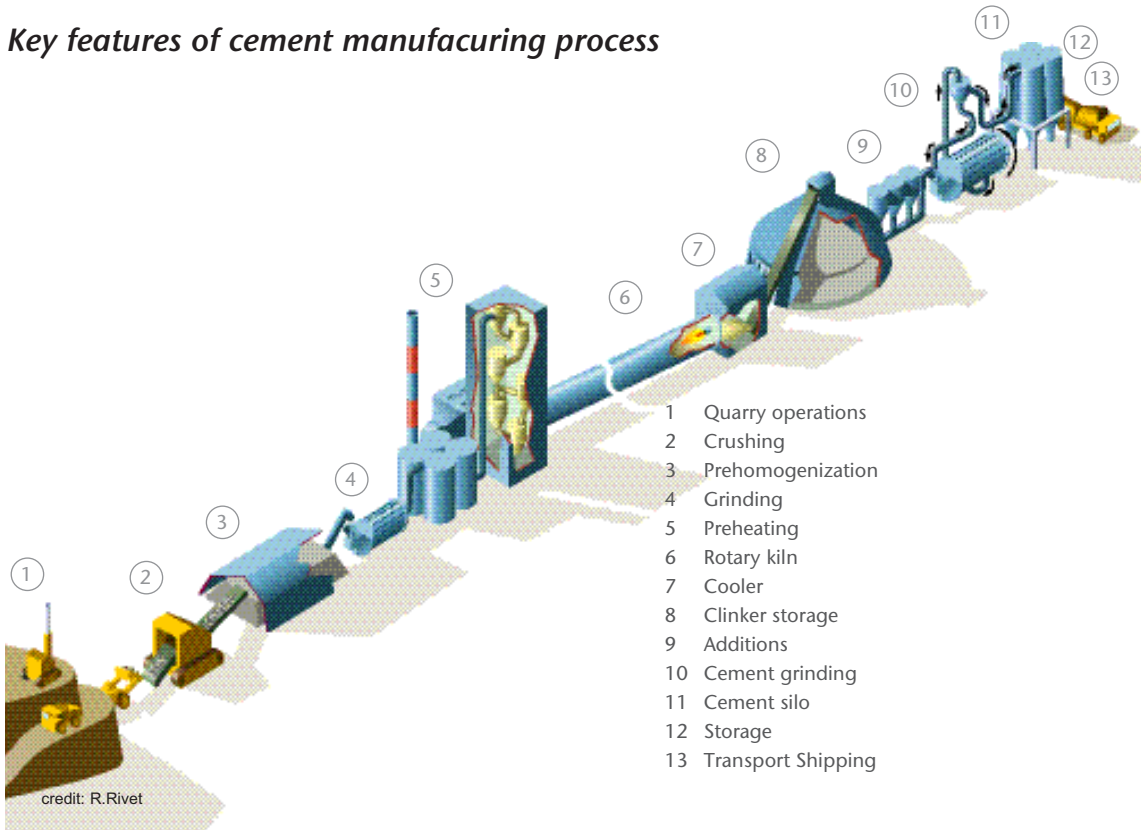
- Quarry operations for cement production, if they are under the management control of the cement plant.
- All operations in cement manufacturing plant from crushing to dispatch/shipment, including any production-related off-site activities; eg. the preparation, treatment, handling and delivery of conventional and alternative fuels and other raw materials.
- Cement milling and/or terminal/distribution silo facilities (ie. receiving clinker and/or producing or distributing cement).
- All office-based personnel directly related with these activities, including administrative and sales employees, managers and directors, even when they are on business outside the plants. Also included are any headquarters office staff directly associated with the cement manufacturing activity.

Cement and clinker delivery logistics to terminal/distribution silo facilities and to customers are included, if carried out by directly or indirectly employed personnel. Third party fatalities resulting from such activity are included only where there is company or employee (direct or indirect) culpability.

Cement and clinker delivery logistics are excluded from this definition when the customer collects these products. Aggregates and ready mixed concrete production, and any other activities beyond the cement manufacturing process are also initially excluded. (Separate external safety reporting for these activities is encouraged but optional at this time).

The reporting protocol defined in this document does not include occupational disease, defined as a condition produced in the work environment over a period longer than one workday or shift. Usually such a disease is due to repetitive factors over a period of time. It may result from systemic infection, repeated stress or strain, chronic exposure to toxins, poisons or other ongoing aspects of the work environment.

Key features of cement manufacturing process



Definitions of the safety indicators to report as CSI Group

Fatalities:

Number of fatalities and fatality rate, directly employed
 Number of fatalities , indirectly employed (contractors & subcontractors) and, third parties

Lost Time Injury (LTI):

Lost Time Injury (LTI) frequency and severity rate, directly employed
 Number of LTIs, indirectly employed (contractors & subcontractors)

1. Number of fatalities and fatality rate for directly employed

Number of fatalities for directly employed

*Fatalities (directly employed) =
 Number of fatalities of directly employed resulting from work-related incidents in a year*

Fatality rate: reported as a rate per 10,000 directly employed, calculated as follows:

*Fatality rate (directly employed) =
 (Number of fatalities in a year / number of directly employed) x 10,000*

Exclusions:

- > All fatalities resulting from travel to and from work.
- > Murders/deaths resulting from criminal actions and deaths by suicide.
- > Deaths from natural causes without a specific work-related cause.

2. Number of fatalities for indirectly employed

These are recorded only when linked to cement activities (as defined on pages 8 and 9), ie. if a customer arranges own transport or sends a contractor to collect products, any associated fatality that occurs is not counted except if it happens on a cement manufacturing site. It is then considered to be a third party fatality.

*Number of fatalities (indirectly employed) =
 Number of fatalities of indirectly employed resulting from work-related incidents in a year.*

3. Number of fatalities for third parties

These are recorded only if they arise from an incident in cement manufacturing (see above or pages 8 and 9). Offsite traffic accident fatalities are included only if there is company or employee (direct or indirect) culpability and are only for cement manufacturing activities.

*Number of fatalities (third party) =
Number of deaths of civilians resulting from incidents related to cement activities (as defined in the scope of cement manufacturing process).*

4. Lost Time Injury (LTI) Frequency Rate (LTI FR) for directly employed

General: The frequency rate is the number of Lost Time Injuries divided by the total hours worked related to a defined period of time, in this case one (1) calendar year.

$$\frac{\text{Number of Lost Time Injuries} \times 1,000,000 \text{ hrs (1 million hrs)}}{\text{Total actual hours worked and paid to employees in a year}}$$

Note 1: Fatalities and Lost Time Injuries (LTIs) are counted separately. A fatality is not double-counted as a LTI.

Note 2: If a company has already adopted use of differently defined frequency rates, it may of course continue to use these internally, however it will report to the CSI (and optionally in public) using the above definition.

5. LTI Severity Rate (LTISR) for directly employed

In principle, the Severity Rate is calculated as the number of lost days per 1,000,000 hours worked.

$$\text{Severity Rate (SR)} = \frac{(\text{Number of Lost Days}) \times (1,000,000 \text{ hrs})}{(\text{Total number of hours worked in a year})}$$

It will be necessary to specify whether the Lost Days are counted on the basis of calendar days lost or working days lost.

Statistical calculation has demonstrated that the Lost Calendar Day basis is = 1.5 times the Lost Working Day basis, within a +/- 3% accuracy.

Therefore it is agreed that:

LTI Severity Rate (basis of worked days lost) x 1.5 = LTI Severity Rate (basis of calendar days lost).

To calculate the Severity Rate precisely, there should be a year-end adjustment to include either:

- a Estimated number of Lost Days carrying forward into the following year; or
- b Actual number of Lost Days carried forward from LTIs in the previous year.

There is general agreement that the counting of Lost Days ceases with a return of the injured person to Restricted (or Light) Work or Normal Work.

6. Number of LTIs for indirectly employed

Recorded only when linked to the activities of cement manufacturing (as defined previously).

*LTIs (indirectly employed) =
Number of LTIs in a year of indirectly employed*

Note 1: If the customer arranges own transport or sends a contractor to collect products, any injury sustained during the transport/pick-up off-site is the responsibility of the customer and is not counted.

Exclusions: Excluded for both directly and indirectly employed are injuries that occur in travel to and from work, injuries due to criminal acts, injuries due to natural causes and occupational diseases.



Safety training on the procedures for working in confined areas at Jura Cement, Wildegg facility.

Some guidance in determining if an incident is work-related

Injuries: facility premises

In many countries, government regulations define the types of incidents which must be legally reported.

Generally, all injuries that result from an event or exposure on the facility's premises are considered work-related. The facility premises consist of the total establishment, including the primary work facility, administration buildings, hallways, washrooms, etc.

An exception to this rule is if an employee exhibits signs or symptoms of a non work-related event or exposure while on the work-site (natural causes). This situation should, of course, be addressed medically.

Some work-related incident clarification and reference criteria:

1. If an employee is injured on the facility premises while engaged in horseplay (rough & tumble, fooling around, play-fun), the injury is recordable. Of course such horseplay should be strongly discouraged.
2. If an employee is injured on the facility premises while under the influence of alcohol or drugs, the injury is also recordable, and may lead to disciplinary procedures depending on company policies in place and legal regulations.

Injuries: off-facility premises

Some reference criteria for off-facility incidents:

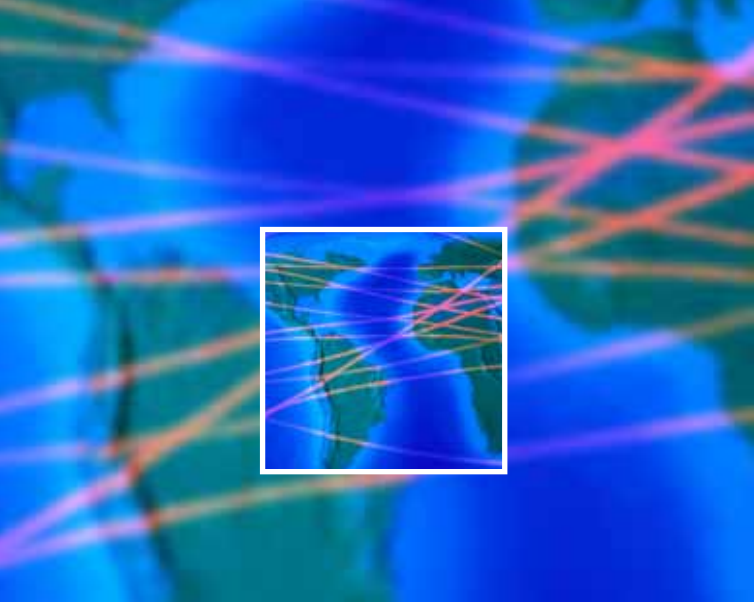
1. If an employee has reported to work, and is injured while off the facility premises performing work-related activities, such as purchasing a company paid lunch, obtaining supplies or carrying out general company errands, the injury is considered work-related.
2. If an employee who with permission leaves work, is injured off-site while at lunch, and the luncheon is not work related, the injury is not considered work-related.

Restricted (or light) work after an injury

Provided it is legally acceptable in the country concerned and medically approved, it is beneficial for both the injured employee and the company to have the employee initially return to restricted/light work duties while the natural healing and recovery process is completed.

When an injured employee returns to restricted/light work, the LTI is over. If the return is the day/shift immediately after an injury, then there is no LTI as no days are lost.

It should be noted however that national incident and/or accident reporting requirements might be different from the CSI definitions described above. In such cases, the national reporting requirements should always be met.



Consolidated CSI reporting and communication

Gathering of safety data from CSI member companies and creation of the report

Every company member of the Cement Sustainability Initiative will elaborate their own annual safety indicator report according to the definitions and formulas in this document and will share its report for the previous calendar year among all CSI members during the month of May every year.

The person designated to make the consolidated report will combine all the individual reports and will create the Consolidated Safety Indicator Report. This will be produced during the month of June every year.

Criteria regarding the use and publication of CSI safety indicators

The consolidated CSI report will not exhibit figures comparing individual, named cement companies. The figures must exhibit all the cement companies reporting as a group in order to make comparisons between the CSI group and the other sectors, or show trends and progress within the CSI group between years.

Companies not involved in the CSI are encouraged to collect and report their data.

Appendix 1 - Draft sample CSI report

(based on approximate 2003 data)

Cement Sustainability Initiative

Consolidated Safety KPI report for 2003 for CSI member cement activities

Year 2003

Reporting scope

Number of CSI member companies reporting	11
Total directly employed	259,450
Estimated manhours worked, directly employed (Millions)	501

Number of Lost Time Injuries (LTIs)

Number of LTIs, directly employed	4682
LTI frequency rate directly employed (per million manhours)	9.35
LTI severity rate directly employed (per million manhours)	
Number of LTIs, indirectly employed	725

Number of fatalities

Number of fatalities, directly employed	41
Fatality rate (per 10,000 directly employed)	1.58
Number of fatalities, indirectly employed	41
Number of fatalities, third parties	37

Of which, logistics fatalities were:

Directly employed	12
Indirectly employed	13
Third parties	29

About the WBCSD

The World Business Council for Sustainable Development (WBCSD) is a coalition of 170 international companies united by a shared commitment to sustainable development via the three pillars of economic growth, ecological balance and social progress. Our members are drawn from more than 35 countries and 20 major industrial sectors. We also benefit from a global network of 50 national and regional business councils and partner organizations involving some 1,000 business leaders.

Our mission

To provide business leadership as a catalyst for change toward sustainable development, and to promote the role of eco-efficiency, innovation and corporate social responsibility.

Our aims

Our objectives and strategic directions, based on this dedication, include:

- > **Business leadership:** to be the leading business advocate on issues connected with sustainable development
- > **Policy development:** to participate in policy development in order to create a framework that allows business to contribute effectively to sustainable development
- > **Best practice:** to demonstrate business progress in environmental and resource management and corporate social responsibility and to share leading-edge practices among our members
- > **Global outreach:** to contribute to a sustainable future for developing nations and nations in transition

Ordering publications

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Disclaimer

This report is released in the name of the WBCSD. It is the result of a collaborative effort by members of the secretariat and executives from several member companies participating in the Cement Sustainability Initiative (CSI). Drafts were reviewed among CSI members, so ensuring that the document broadly represents the majority view of this group. This does not mean, however, that every member company agrees with every word.

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