

# environmental code

Second Edition - October 2005



Irish Concrete Federation







# Foreword

By Minister for the Environment, Heritage and Local Government, Mr. Dick Roche T.D.

I welcome this initiative by the Irish Concrete Federation to revise its Environmental Code. This initiative shows the Federation's renewed commitment to maintaining the highest standards in relation to the environment and to continually improve these standards in line with best practice.

The quarrying industry plays a fundamental role underpinning Ireland's development. The revised Code is particularly apt at a time when the industry is undergoing significant change with increased activity due to the high levels of economic growth and major changes in the regulation of quarries being implemented through section 261 of the Planning and Development Act 2000.

There is a need to ensure for future generations that this growth is managed without sacrificing Ireland's clean environment. We have an opportunity now to ensure that we don't repeat the mistakes of the past. Implementing this code will help to ensure that. Co-operation between quarry owners and operators and local authorities in strategic planning for the industry and implementing good practice on the ground will also be vital. Quarry owners and operators need to be "good neighbours", consulting with the local community, making environmental data freely available to the public and appointing a specific staff member to deal with queries or complaints. Adopting such measures should help to allay local concerns about the impact of quarries on the community.

I also welcome the Federation's continued commitment that its members will adhere to the Archaeological Code which was agreed with the then Minister for Arts, Heritage, Gaeltacht and the Islands.

I look forward to continued cooperation between Irish Concrete Federation members and local authorities, with the twin aims of protection of the environment and maintaining national competitiveness.

Dick Roche, T.D.  
Minister for the Environment, Heritage and Local Government



# President's Message

A Message from the President of the Irish Concrete Federation

The Irish Concrete Federation is proud to publish the second edition of its Environmental Code. The first edition ICF Environmental Code was pioneered in the very early days of the Irish Concrete Federation and has served member companies well since its launch in November 1996.

The points touched on by the then Minister for the Environment in the Foreword to that first Environmental Code, regarding members awareness of, and commitment to, good environmental management, consistent with sustainable development principles are all the more relevant today.

Since then the Code has gained national recognition and has now become a reference document in the Department of the Environment, Heritage and Local Government's "Quarries and Ancillary Activities – Guidelines for Planning Authorities" and in the recently published EPA "Environmental Management in the Extractive Industry (Non-Scheduled Minerals) – Guidelines for Operators".

The Environmental Code has also played a vital role in assisting members who have had to register quarries under Section 261 of the Planning and Development Act, 2000 by demonstrating the commitment to and compliance with recognised environmental standards and thresholds.

Other legislation, quite often driven by the European Union has placed greater emphasis on our industry to perform environmentally, not to mention the ongoing work looking at promoting sustainable development in the EU non-energy extractive industry.

This revision of the ICF Environmental Code, together with the ICF Archaeological Code, developed jointly with the Minister of Arts, Heritage, Gaeltacht & the Islands, demonstrate the ongoing commitment of the Irish Concrete Federation and its members to the highest standards of environmental management and to respect for our heritage.

The experiences gained over the past nine years have been applied to this 2nd Edition of the ICF Environmental Code making it ever more relevant, focused and practical. I am confident that the 2nd Edition will be an essential tool for members, assisting them to carry out their businesses in a manner consistent with modern environmental practices and respecting the legitimate interests and concerns of the communities in which they operate.

Declan McCartney  
President.





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The Irish Concrete Federation's Environmental Code was first published in November 1996 with a subsequent update to section 4 (iv). Now, this revised edition, April 2005, updates the Code in its entirety.

Enquiries to Irish Concrete Federation, 8 Newlands Business Park, Naas Road, Dublin 22.  
Tel: 01 4640082 Fax: 01 4640087 email: [info@irishconcrete.ie](mailto:info@irishconcrete.ie) website: [www.irishconcrete.ie](http://www.irishconcrete.ie)



# 1. Introduction

The Irish Concrete Federation is the trade organisation for the aggregate and concrete products industries in Ireland.

The Federation is very conscious of its responsibilities towards the environment. It is firmly committed to maintaining the highest standards in relation to the environment and to the continual improvement of these standards in line with best practice.

In drafting this Code the Federation has taken cognisance of other similar and parallel publications emanating through the European Aggregates Association (UEPG), the European Ready Mixed Concrete Organisation (ERMCO) and the QPA Environmental Code. The ICF gratefully acknowledges the ground work that has been done by these organisations.

Building is a barometer of human progress and modern societies need to extract and conserve the earth's mineral resources in order to create the infrastructure and facilities which are essential to develop our communities, our cities and towns.

The Federation and its members are aware of the special position that the Federation enjoys in relation to the country's national resources. The Federation will develop a positive industry-wide programme designed to protect the environment in a co-ordinated and effective way. The member companies of ICF therefore commit themselves to the principles of this Environmental Code.

Senior management and employees of member companies will develop awareness and training programmes which will reflect the long term commitment by our industry to the environment and our neighbours. Environmental policies will reflect compliance in both the letter and spirit of the relevant legislation.

## 2. The Objective

The objective of this Code is to ensure that all ICF members will:

Carry out the business of aggregate extraction, processing, delivery, reinstatement and associated concrete production in a manner which minimises adverse effects upon the environment and the local community;

Operate to those standards required by law and good industry practice, as outlined in this Code;

Conserve resources by the efficient use of energy supplies and raw materials;

Ensure that employees and contractors perform their duties in a manner consistent with these environmental policy objectives;

Respect the legitimate concerns and interests of the community;

Be committed to good environmental management practice;

Adopt the guidelines as laid out in the following pages.





## 3. Environmental Management Systems

An Environmental Management System will be installed appropriate to the nature of the activity. This EMS will be set up to facilitate compliance with the legal planning and environmental requirements of the site including any planning permissions, local authority permits, IPPC licences where relevant and will also facilitate compliance with the principles of this Environmental Code. This EMS will include the following provisions.

### Environmental Policy Statement

A Policy will be developed setting out broad statements of intent and objectives covering all activities that have a bearing on environmental and community concerns.

### Responsibility for Planning and Environmental Matters

A designated person shall be given the responsibility for all planning & environmental matters affecting the site, including the successful implementation and running of the EMS.

### Initial Planning & Environmental Audit

An initial audit will be carried out in order to establish the existing planning & environmental status of the site and on the basis of the audit results, an action programme, or Environmental Management Programme, for the site will be drafted.

### Formulation of an Environmental Management Programme

The designated person will be responsible for the formulation and the implementation of an annual Environmental Management Programme (EMP) for the site. This EMP will include the objectives and targets for the site, the designation of responsibility for achieving the targets, the means by which they will be achieved and the timeframe within which they are to be achieved. The objectives & targets of the EMS will, at a minimum, include the audit corrective action recommendations.





## Awareness & Training

Appropriate awareness and training programmes will be formulated as part of the EMS. All training records will be maintained.

## Environmental Monitoring

As part of the EMS, an appropriate monitoring or assessment system will be established to provide a check on compliance with guidelines, thresholds and procedures.

## Audit the EMS

The success of the EMS implementation and in meeting the objectives & targets of the EMP will be evaluated by audit on an annual basis. Any corrective actions identified will be addressed and corrected in the following year's EMP.

## Annual Environmental Report on the EMS

An annual environmental report (AER) will be produced which reports on the success of the EMS implementation. This AER will also include the objectives & targets for the following year's Environmental Management Programme. Any non-compliances with the EMS should be identified and included for corrective action in the following year's EMP.

## Permissions/Licences

Planning permissions and licences are important regulatory requirements. ICF recommend that a copy of any relevant planning permissions along with licences and safety procedures be available at the site office, for reference by operatives and contractors on the site.

## General Note:

In putting forward this guideline the ICF suggests that the BAT, the Best Available Techniques, approach should be used. If this principal is adopted, a judicious balance will then be struck between environmental benefit and financial expense.



## 4. Environmental Impacts to be Addressed

### (i) Noise

#### Objective

ICF members accept that excessive noise can cause impact on the public who live in relative close proximity to quarries, pits and production plants. ICF members will use practical means to reduce noise to acceptable levels.

#### Noise Minimisation Measures

ICF members will use practical means to reduce noise to acceptable levels, including;

- Bunding, cladding, screening, earth mounding for fixed & mobile plant.
- Minimising material drop heights.

#### Noise Limits

Activities on-site shall not give rise to noise levels off-site, at noise sensitive locations which exceed the following sound pressure limits by more than 2 dB(A).

Daytime (i.e. 08.00 hrs to 20.00 hrs)	$L_{Aeq\ 1\ Hour}$	55 dB(A).
Night time (i.e. 20.00 hrs to 08.00 hrs)	$L_{Aeq\ 1\ Hour}$	45 dB(A).



The sensitivity to noise is usually greater at night-time than it is during the day, by about 10dB(A), hence the differential between night and day time levels in the guideline. Audible tones and impulsive noise at sensitive locations at night should be avoided, irrespective of the noise level.

Traffic from quarries, pits and readymix plants is also a source of noise which often has to be considered and may involve specific remedies.



## (ii) Ground Vibration

Blasting is the only means by which rock can be extracted prior to processing.

### **Objective**

The environmental impacts of blasting are mainly the effect on the local community and the practical effect with regard to buildings and structures. ICF members will seek to minimise these impacts.

The industry established control parameters for blasting relate to ground vibration or peak particle velocity (PPV), and air vibration or air over pressure (AOP). Thresholds are recommended for both, as follows:

### **Vibration Limits**

The vibration levels from blasting should not exceed a peak particle velocity of 12mm/sec, measured in any three mutually orthogonal directions at a receiver location. These levels are well below the levels at which structural damage occurs.

### **Air Overpressure Limits**

Blasting should not give rise to air overpressure values at sensitive locations which are in excess of 125 dB(Lin) max peak. To allow for wind fluctuations and weather conditions, 95% of all air over-pressure levels measured at the nearest noise sensitive locations should conform to the specified limit value. No individual air over-pressure value should exceed the limit value by more than 5 dB(Lin).

Planning permissions will normally specify hours of blasting and the local community should be advised in advance. Blast information including vibration, air over pressure, explosive charge and distance of the blast from blast sensitive installation, should be monitored and recorded.



### (iii) Dust and Air Quality

#### Objective

ICF members will take all reasonable steps as far as is practical to minimise dust emissions from material handling operations. Members will use reasonable techniques for minimising the release of dust into the atmosphere.

Dust, in the form of point emissions (i.e. from vents or filter stacks to atmosphere), and fugitive dust (dust in the general body of air), is a primary concern of ICF members with respect to air quality.

The following thresholds for point and fugitive emissions respectively are suggested for dust arising from operations. These thresholds have already been widely applied in the industry.

#### Dust Limits

For **point emissions**, the concentration of particulate matter in emissions to air should not exceed  $50\text{mg}/\text{m}^3$ . In effect this means that there should be no visible dust plume.

For **fugitive emissions**, dust deposition from the activity beyond the site boundary should not exceed  $350\text{mg}/\text{m}^2/\text{day}$  monthly mean in accordance with TA Luft VDI Method 2119 (Bergerhoff Gauge).



**On-site Dust Minimisation Measures**  
ICF members will use best practical means to minimise dust emissions from the activity, including:

- Enclosure of crushers and screens where necessary
- Dust filters where appropriate
- Good quarry road surfaces
- Water spraying of conveyors, stockpiles, roads
- Berms and vegetation to minimise soil blow-off
- Wheel wash for road traffic





#### (iv) Water Management

This section covers both surface water and ground water protection.

##### **Objective**

Discharges of water and other liquids into receiving facilities are governed by legislation. ICF members will comply with the legislation and the standards laid down by the Authority and in particular comply with the provisions of all authorisations allowing discharge of water into recognised water courses. These provisions will normally set standards defining the quality and quantity of the water discharged.

Discharge abatement measures are generally along the following lines:

- Minimisation of water use;
- Recycling of water, to the greatest extent feasible;
- Settling tanks for washouts;
- Sewage treatment;
- Stormwater facility where appropriate;
- Oil interceptors where appropriate.

##### Water Discharge Emission Limits

- Thresholds applied to water effluents vary according to location, but the following guidelines generally apply:
- pH (a measure of acidity or alkalinity) The discharge to the receiving waters should not cause the pH of the receiving waters to exceed 9,
- TSS (Total Suspended Solids) should not exceed 35mg/litre,
- BOD (Biological Oxygen Demand) should not exceed 25mg/litre.





### (v) Fuel/ Chemicals Storage

ICF members will adopt the following good practice in the handling, treatment & storage of fuels & chemicals on-site:

- Bunding of all tanks & drum storage areas;
- Labelling of fuel, oil and chemical storage tank & drums;
- Loading/unloading of fuels in designated area to protect against spillage/run-off;
- Preparation of an Emergency Response Procedure to address any emergency incident on site;
- Safety system to prevent overfilling of tanks;
- Maintain spill kits or suitable absorbent material on site;
- Maintain Material Safety Data Sheets (MSDS) where applicable for all materials stored on site;
- Fuel pumps and attachments to be located within the bunded area.

### (vi) Waste Management

ICF members will minimise production of waste and where appropriate consider its beneficial use including recycling. They will deal with all waste in accordance with the relevant legislation and other controls in place, including using waste contractors with valid Waste Collection Permits.

Good practice needs to be achieved regards recycling used oils and greases, batteries, tyres, filters, scrap metal and timber.





### (vii) Good Housekeeping

Good housekeeping, and this applies internally to buildings and plant as well as external appearances, will be assured within ICF members' sites, quarries and pits.

It is important that plant and buildings are kept in a good state of repair. Plant and buildings should be kept painted and suitable colours used to minimise visual intrusion.

ICF members will adopt good practice methods and ensure that covers to conveyors, sound proofing to plant and machinery have been examined and maintained. Inspections should relate specifically to protective measures that have been incorporated to ameliorate dust, noise and visual impact.

### (viii) Visual Impact

ICF members recognise the importance of good design and effective landscaping to assist in minimising the visibility and visual impact of developments associated with quarrying operations and ancillary activities. They will therefore employ measures including physical screening, screen planting, landscaping and existing features to ensure that the visibility and visual impact of such developments is reduced to a minimum, thereby endeavouring to integrate the development into the local surroundings.

#### **New Developments**

ICF members will design and plan all new developments to:

- minimise as far as possible from public view the visual impact of operations by maximising the use of existing landscape features to absorb them. Full use will be made of existing woodlands, shelter belts and hedges as these are often ready made screening features;
- utilise man made features such as mounds, supplemented where necessary by tree or hedge planting, to provide additional screening when natural features are inadequate.

#### **Existing Operations**

ICF members will, where practical and economic, follow the same principles as for new developments. However, it must be recognised that:

- Some of the older operations may be difficult to screen;
- This code cannot provide a comprehensive list of solutions to the many and varied situations that exist;
- To determine priorities, members will carry out visual assessments to identify unsightly features and determine appropriate remedial measures within the economic viability of the unit concerned.





### (ix) Transport

Vehicle traffic in and out of operations and through minor or congested roads nearby can be disturbing to the local community. Routing of vehicles should where practical be environmentally sensitive. ICF members are fully aware of their obligations to try to minimise the impact and, in respect of vehicles under their control, give the following undertakings:

#### **Road cleanliness**

ICF members will ensure that vehicles leaving their operations are effectively cleaned, by an appropriate means including wheelwashing facilities, if necessary, to prevent the spread of dust and aggregate on to the public highways.

#### **Sheeting and load security**

ICF members will ensure, where appropriate, that loads of finer materials leaving operations are properly loaded, trimmed and sheeted to prevent dust (< 3mm) or any part of the load causing hazard to the public. Alternatively, the spraying of loads can be used to dampen dust and reduce dust blows from an open truck.

#### **Vehicle Parking**

Wherever possible, ICF members will provide on-site parking.

#### **Vehicle Maintenance**

All vehicles will be well maintained and regularly serviced to minimize exhaust emissions.

ICF members will use their best endeavours to encourage privately owned vehicles collecting material from their installations to comply with the aforementioned conditions.





## (x) Reinstatement and After-Use

Reinstatement and after-use are an integral part of the site management process, and form an important aspect for our industry.

A restoration plan should be drawn-up by the developer of the existing operation to ensure that where practicable, progressive or phased reinstatement is carried out. Final reinstatement is initiated when extraction is completed.

The quality of the reinstatement and the aftercare programme undertaken is an indicator of a company's responsible attitude and is reflected in the public perception of its environmental performance.

ICF members will, in formulating their reinstatement and after-use schemes, take full account of the needs and the legitimate concerns of the local community as expressed both in the requirements of the planning permission and through the local liaison committees. ICF members will fully support the need to discuss reinstatement and after-use proposals locally during the planning process.

## (xi) Ecology

The broad interests of ecology are safeguarded by the Wildlife Acts and through the designation of Sites of Specific Scientific Interest. Where there is an approval for aggregate working in proximity to designated areas, ICF members will make every effort to minimise any detrimental effect. In general, ICF members will:

- Recognise the potential ecological loss that may be caused by some forms of development;
- When formulating development proposals, take into account the need to maintain, wherever possible, the ecological balance in their reinstatement and rehabilitation schemes;
- If practicable, create new and diverse habitats as the environment undergoes the changes that are brought about by the industry's stages of development from extractive or process site to reinstatement and change of use.





## (xii) Archaeology

In carrying out extractive operations, ICF members will adhere to the principals of the Federation's Archaeological Code, developed jointly with the Minister of Arts, Heritage, Gaeltacht & the Islands for the protection of Archaeological Heritage.

## (xiii) Energy

ICF members recognise the importance of energy conservation and will endeavour through regular energy monitoring and management to reduce energy consumption. Energy efficiency will be given high priority when considering purchase of new plant and existing equipment will be well maintained to ensure peak performance.

## (xiv) Public Safety

Aggregate operations and processing plants can hold a hazardous fascination, particularly to children. Appraising the public of the dangers involved requires an educational approach as well as prohibition by physical barriers. Where new operations are contemplated, comprehensive discussions will be undertaken by ICF members involving planners and other specialist advisers to identify and give priority to safeguarding actions that might be needed.



The surroundings of many existing workings present different problems, particularly where sensitive developments have grown closer to the operation. For instance steep quarry faces and deep settling ponds should be suitably signposted and fenced against casual ingress.



## 5. Community Relations

The Aggregate Industry provides essential building materials for the social and economic development of the Country. Without aggregates, the built environment could not be enhanced with safe, structurally sound buildings for homes, schools, offices, shops and hospitals. In terms of protection of the environment, no water or wastewater treatment systems could be constructed. The Industry recognises that each activity and product it provides has a potential impact on the environment and the overall objective of ICF members is to minimise the environmental impacts and maximise the environmental enhancements at their sites.

To ensure good environmental practice is achieved on-site, ICF members are committed to maintaining an on-site Environmental Management System (EMS). This EMS includes a formal procedure for recording and dealing with complaints from the public.

The ICF Environmental Award Competition is held on an annual basis for the membership to promote and showcase positive and proactive on-site environmental measures that have been taken.

ICF members will aim at all times to be good neighbours and play their part in the community, for example giving presentations on their work to local groups, allowing schools and other local parties interested in their activity to visit the quarry pit or plant on conducted tours or local open days or by supporting local events.

Concerns in relation to new developments will be examined and designed for, where practicable and reasonable, by consulting with the public at an early stage in the development process.





# 6. Appendix

## (i) List of relevant Irish planning and environmental legislation.

### a. Table of Statutes

The Forestry Act 1946
Local Government (Planning and Development) Act 1963
Local Government (Planning and Development) Act 1976
Local Government (Water Pollution) (Amendment) Act 1976
Local Government (Water Pollution) Act 1977
Local Government (Planning and Development) Act 1982
Local Government (Planning and Development) Act 1983
Air Pollution Act 1987
Safety, Health and Welfare at Work Act 1989
Derelict Sites Act 1990
Local Government (Water Pollution) Act 1990
Local Government (Planning and Development) Act 1990
Local Government (Planning and Development) Act 1991
Local Government (Planning and Development) Act 1992
Environmental Protection Agency Act 1992
Local Government (Planning and Development) Act 1993
Waste Management Act 1996 & Amendments
Planning & Development Act 2000
Protection of the Environment Act 2003

### b. Table of Statutory Instruments

Local Government (Planning and Development) Regulations 1964.
Local Government (Planning and Development) Regulations 1977 (SI. No.65)
The EC (Waste) Regulations 1979
The EC (Toxic and Dangerous Waste) Regulations 1982
Air Pollution 1987 (Air Quality Standards) Regulations 1987 (SI No.244)
Local Government (Water Pollution) Regulations 1987 (SI No.108)
Air Pollution 1987 (Licensing of Industrial Plant) Regulations 1988 (SI No.266)
European Communities (Environmental Impact Assessment) Regulations 1989 (SI No.349)
The EC (Environmental Impact Assessment) Regulations 1990
The EC (Asbestos Waste) Regulations 1990
Local Government (Planning and Development) Regulations 1990 (SI. No.25)
The EC (Waste oil) Regulations 1992
Local Government (Water Pollution) Regulations 1992 (SI No.271)
Access to information on the Environment Regulations 1996
The EC (Waste) Regulations 1994
Environmental Protection Agency Act 1992 (Commencement) Order 1994 (SI No.82)
Environmental Protection Agency (Licensing) Regulations 1994
European Communities (Environmental Impact Assessment) (Amendment) Regulations 1994 (SI No.84)
Local Government (Planning and Development) Regulations 1994 (SI No.86)
Local Government (Planning and Development) Regulations 2001 (SI No.600)





## (ii) List of Technical Reference Documents

Sand and Gravel Association (SAGA) Code of Practice, August 1991.
BACMI The British Aggregate Construction Materials Industries, Environmental Code, March 1992.
The Extractive Industry and the Environment in Ireland, Britain and the rest of the EC. Irish Mining and Quarrying Society Conference 1993.
Environmental Practices and Audit Checklist for the Ready Mixed Concrete Industry. ERMCO 1996.
Environmental Protection Agency (EPA). Guidance Notes on Noise in Relation to Scheduled Activities 1996.
Secretary of State's Guidance - Blending, packing, loading and use of bulk cement. Department of the Environment, London, February 1991.
(a) Secretary of State's Guidance - Quarry Processes PG3/9 (96) Department of the Environment, London.
(b) Secretary of State's Guidance - Mineral Drying and Roadstone Coating Processes, PG3/15 (96) Department of the Environment, London.
(c) Secretary of State's Guidance - Mobile Crushing and Screening Processes, PG3/16 (96) Department of the Environment, London.
Minerals Planning Guidance: The control of noise at surface mineral workings (MPG 11), Department of Environment, London, April 1993.
Quarries and Ancillary Activities, Guidelines for Planning Authorities, Department of the Environment, Heritage & Local Government, April 2004.
Environmental Management in the Extractive Industry, Environmental Protection Agency, 2005.
Sustainable Development, Building Our Strategy, Quarry Products Association 2005.

## (iii) Definitions

<b>A-weighting:</b> Normal hearing covers the frequency (pitch) range from about 20 Hz to 20,000 Hz but sensitivity is greatest between about 500 Hz and 5,000 Hz. The "A-weighting" is an electrical circuit built into noise meters to mimic this characteristic of human being.
<b>Decibel (dB):</b> The logarithmic measure of sound level. 0dB is the threshold of normal hearing, 140dB is the threshold of pain. A change of 1dB is detectable only under laboratory conditions.
<b>dB(A):</b> Decibels measured on a sound level meter incorporating a frequency weighting (A-weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessments of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10dB(A) corresponds roughly to doubling or halving the loudness of a sound.
<b>dB (Lin) max peak:</b> Instantaneous Maximum Peak sound pressure level measured in decibels on a sound level meter, without the use of a frequency weighting system.
<b>Impulsive noise:</b> A noise which is of short duration (typically less than one second), the sound pressure level of which is significantly higher than the background.
<b>L<sub>Aeq,T</sub>:</b> The equivalent continuous sound level - the sound level of a steady sound having the same energy as a fluctuating sound over a specified measuring period (T). Used to describe many types of noise, and can be measured directly with an integrating sound level meter.
<b>Tonality:</b> The degree to which a noise contains audible pure tones. Broad-band noise is generally less annoying than noise with identifiable tones.
<b>L<sub>Aif</sub>:</b> The equivalent continuous sound level corrected for tonal or impulsive character, where these are present.
<b>TSS:</b> Total Suspended Solids.
<b>BOD:</b> Biological Oxygen Demand.

# ICF Environmental Award Winners

1998



1999



2001



2002



2004



2005





