

CEM II

Eco-efficient cement for Ireland

Over 80% of the cement used in Ireland today is eco-efficient CEM II



CEM II are the latest generation cements, with the same performance as Ordinary Portland cement, but require less energy to produce and have a lower carbon footprint.

CEM II cement is produced by Irish Cement in modern **energy efficient** facilities at Platin and Limerick. Clinker production is an energy-intensive process. However in CEM II production, finely ground limestone replaces a proportion of the clinker giving

a double benefit; less carbon dioxide emitted and less energy required.

Irish Cement is also producing CEM II cements in a more **resource efficient** manner. Traditional raw materials are being replaced by readily available overburden from the adjacent quarries and fly-ash from Moneypoint Power Station.

Visual Centre for Contemporary Art & The George Bernard Shaw Theatre, winner of the Best Cultural Building 2010 at the RIAI Irish Architecture Awards. CEM II cement was used throughout both structurally and architecturally with exposed in-situ concrete. Internal walls are cast against an oriented strand board, which gives them a visually soft texture in contrast to the deeply coffered concrete ceilings.
Architects: Terry Pawson, Structural Engineers: Arup, Client: VISUAL - Carlow Co Co, Photo: Ros Kavanagh



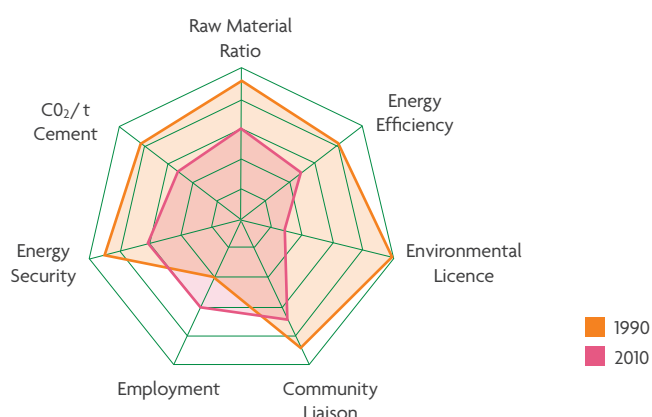
Main types	Notation of the 27 products		K	S	D	P	Q	V	W	T	L	LL	Minor constituents
CEM I	Portland cement	CEM I	95-100	-	-	-	-	-	-	-	-	-	-
CEM II	Portland-slag cement	CEM II/A-S	80-94	6-20	-	-	-	-	-	-	-	-	0-5
		CEM II/B-S	65-79	21-35	-	-	-	-	-	-	-	-	0-5
	Portland-silica fume cement	CEM II/A-D	90-94	-	6-10	-	-	-	-	-	-	-	0-5
	Portland-pozzolana cement	CEM II/A-P	80-94	-	-	-	-	-	-	-	-	-	0-5
		CEM II/B-P	65-79	-	-	-	-	-	-	-	-	-	0-5
		CEM II/A-Q	80-94	-	-	-	-	-	-	-	-	-	0-5
		CEM II/B-Q	65-79	-	-	-	-	-	-	-	-	-	0-5
	Portland-fly ash cement	CEM II/A-V	80-94	-	-	-	-	-	-	-	-	-	0-5
		CEM II/B-V	65-79	-	-	-	-	-	-	-	-	-	0-5
		CEM II/A-W	80-94	-	-	-	-	-	-	-	-	-	0-5
		CEM II/B-W	65-79	-	-	-	-	-	-	-	-	-	0-5
	Portland-burnt shale cement	CEM II/A-T	80-94	-	-	-	-	-	-	6-20	-	-	0-5
		CEM II/B-T	65-79	-	-	-	-	-	-	21-35	-	-	0-5
	Portland-limestone cement	CEM II/A-L	80-94	-	-	-	-	-	-	-	6-20	-	0-5
		CEM II/B-L	65-79	-	-	-	-	-	-	-	21-35	-	0-5
		CEM II/A-LL	80-94	-	-	-	-	-	-	-	-	6-20	0-5
		CEM II/B-LL	65-79	-	-	-	-	-	-	-	-	21-35	0-5
CEM III	Blastfurnace cement	CEM III/A	35-64	36-65	-	-	-	-	-	-	-	-	0-5
		CEM III/B	20-34	66-80	-	-	-	-	-	-	-	-	0-5
		CEM III/C	5-19	81-95	-	-	-	-	-	-	-	-	0-5

The European Cement Standard EN 197 describes the family of common cements. CEM I has been produced by Irish Cement since 1938. CEM II cements introduced in 2006 now account for more than 80% of ICL cement sales. Finely ground limestone is used to replace up to 20% of the clinker. The limestone fines assist early stage hydration.

CEM II is the sustainable choice for Ireland.

	Early Strength	Later Strength	Durability	Workability	Carbon Footprint
CEM II	✓✓	✓✓✓	✓✓✓	✓✓✓	✓✓✓
CEM I	✓✓✓	✓✓✓	✓✓✓	✓✓	✓✓

Sustainability Index - Cement Production 1990–2010



Championing sustainability requires progress across a number of indicators. Irish Cement has been systematically targeting improvements in these key areas. The index illustrates the achievements in each sector. Sustainability of Irish Cement products has improved significantly over the past 20 years.

- Modern production and abatement equipment
- Reduced energy requirement per tonne of cement (-25%)
- Reduced emissions per tonne of cement (-10%)
- Fossil fuel replacement programme (50% target)

Case Study Kilronan Pier, Inis Mór



Photos - Courtesy: Michael Punch & Partners

Kilronan or Cill Rónain is the main harbour of Inis Mór, the largest of the Aran Islands located 15km off the Galway coast. Kilronan is the entry point to Inis Mór for islanders, tourists and cargo goods. It is also the location of the RNLI lifeboat serving the Aran Islands. CEM II cement was selected for this project because of the need for a single consistent supply, its durability and its suitability for the exposure classes, including exposure to chlorides in this extreme marine environment.

Client: Galway Co Co, Project Managers: Michael Punch & Partners, Contractors: BAM