



ASSOCIAZIONE
ITALIANA
TECNICO
ECONOMICA
DEL CEMENTO

**ITALIAN
CEMENT
INDUSTRY**

2002

ANNUAL REPORT
Rome, July 16, 2003



INDEX

THE REFERENCE ECONOMIC PICTURE

- 5 The nation's economy and the cement industry
- 7 Investments in construction

PRODUCTION AND MARKET

- 11 Cement consumption and production in Europe
- 14 Cement consumption and production in Italy
- 19 The nation's cement imports and exports
- 24 Distribution of production by technical characteristics and composition
- 26 Cement destination
- 28 The structure of the cement sector
- 32 Energy consumption
- 35 Cement truck transport

CODES AND STANDARDS

- 37 The environment
 - The Mad Cow syndrome emergency
 - CO2 emissions containment
 - The presence of Chromium VI in cements
 - Application of legislative decree 372/99, so-called *IPPC*
- 44 TECHNICAL REGULATION
 - Certification
- 45 PROMOTIONAL AND PUBLICIZING ACTIVITIES
 - Second-level master's degree in *Innovation in the design, rehabilitation and inspection of reinforced-concrete structures*
 - Master's degree in *Highway safety*
 - A new publication
 - The AITEC website
 - The Ulysses Project

 - General information
 - Information of a didactic nature
 - Fairs and expositions

- 51 ANNEXED STATISTICAL TABLES
-

The nation's economy and the cement industry

■ The recovery of Europe's economy appears to be extremely slow and fragile. On the average during 2002 Europe's gross national product grew by 0.8%, displaying a slowdown of six-tenths of a percentage point over 2001, a year when a sharp slowdown over the good performance seen during the three-year period 1998-2000 had already emerged.

Concomitantly with the loss of dynamism in the European area, Italy's economy too marked in 2002 a sensible slowdown, which was a follow up to the intense braking that had been a feature of the previous year. The difference between Italy's growth rate and that of the European Union was a negative 0.4 percentage points. Italy's gross national product increased by only 0.4% against a growth of 1.8% in 2001. According to national figures, unlike what was seen in the rest of Europe, Italy displayed a progressive strengthening of her growth during the year, going from almost stagnation during the first quarter to an increase, to be attributed to the economic situation, of 0.4% (indicating a 1% trend) for the fourth quarter.

Analysis by production sectors brings out differentiated rates of growth: services rendered for sale grew by 1.0% and the industrial value-added underwent a dip of 0.6%, the synthesis of a 0.8% contraction in the industrial product in the strict sense and of an 0.5% expansion of the construction field.

Construction increased its relative weight within the industrial sector, going from 16.2% to 16.8%.

The non-metalliferous minerals, which embrace cement, marked up in real terms an average 3.2% increase relative to a 4.1% growth in cement production.

The modest growth in the gross national product fits within a context displaying an unfavorable phase in the European area economic cycle. The development of the GNP was braked by the foreign components of demand, there being a weak impulse of national demand, which grew by 0.2% in real terms.

The final internal demand had the benefit of positive trends in both private consumption (up 0.4%) and in fixed gross investments (up 0.5%).

The behaviour of family expenditures reflects both the erosion of disposable income caused by inflation, and the negative effects on the propensity to consume brought about first of all by the loss of financial wealth but also - and not least - that effect tied to the effective perception of consumer price dynamics after the introduction of the euro.

Almost all components of investment recorded a dip during the first quarter, with a recovery in the second half of the year,

whose dynamism was very probably influenced by the approach of the deadlines on the various tax incentives in effect during 2002 (the Tremonti-bis law and the ecological incentives on the purchase of automobiles).

Significantly slowed down relative to the preceding year was the dynamics of investments in construction, which grew by 0.3% as against the 3.2% for 2001. As we shall better see in detail in the next section of this annual report, the slowdown was a feature most especially of non-residential building construction, whose growth rate went from 5.1% in 2001 to a negative rate of 0.3% in 2002. Falling too, even if less markedly, was the homes sector, which grew by 0.9%.

As a consequence of the weakening of the internal and international demand a heavy slowdown relative to the previous year was seen in exports, which displayed a dip of 1.0%, while imports grew on the average during 2002 by 1.5%, encouraged by a progressive appreciation of the euro over the dollar.

The cement sector closed 2002 with a negative foreign trade balance of 1.5 million tons, for a value of 98 million euros.

The expectations of a cyclical recovery had led to a reconstitution of the stocks of finished products in partial de-stocking during the second half, within a stagnation of orders and a deterioration of near-term expectations. In 2002 the variation in stocks anyway showed an increase with a contribution to the growth of the economy exactly equal to the increase of the gross national product (0.4%).

The labor market displayed in 2002 an overall rate of growth of employment of 1.1%, with a growth in employee-labor employment of 1.5% while the self-employed component marked a slight contraction of 0.1%. In the construction sector the expansion continued with a growth of almost 27 thousand jobs, or 1.6%. Acting as locomotive for the expansion then was employee labor (up 3.8%), whose increase more than compensated for the decrease in the self-employed (down 1.4%).

Gross wages showed an increase of 5.6% on the whole, while in industry in the strict sense they grew by 2.6%.

The average inflation rate, measured on the basis of the national index for the entire nation, was found to be 2.5%, slightly lower than in 2001, reflecting stresses of mostly internal origin.

The drop in the debt/gross national product ratio continued in 2002, descending by some three percentage points, going from 109.5% to 106.7%.

Construction investments

■ Investments in construction, after the good results of 2001 in which they played an important compensatory role relative to the recessionary impulses of the manufacturing sector, in 2002 displayed a slowdown in real growth, confirmed, even if the actual amounts disagree, by both ISTAT and the National Association of Building Contractors (ANCE). As we shall see better below, 2002 in fact featured an anomalous divergence in the balance sheet data put out by the two sources mentioned, which, although agreeing on the slowdown in growth, were decidedly divergent when they quantified the situation.

According to the figures of the General Report on the Country's Economic Situation, investments in construction in 2002 grew in real terms by scarcely 0.3% (3.2% in 2002), in line with the trend in total gross fixed investments in 2002, construction accounting for 39.9% of them.

This behaviour was - when all the figures were in - sensibly below the forecasts made in the July Economic and Financial Planning document, which estimated a growth in construction investment of 2.8%.

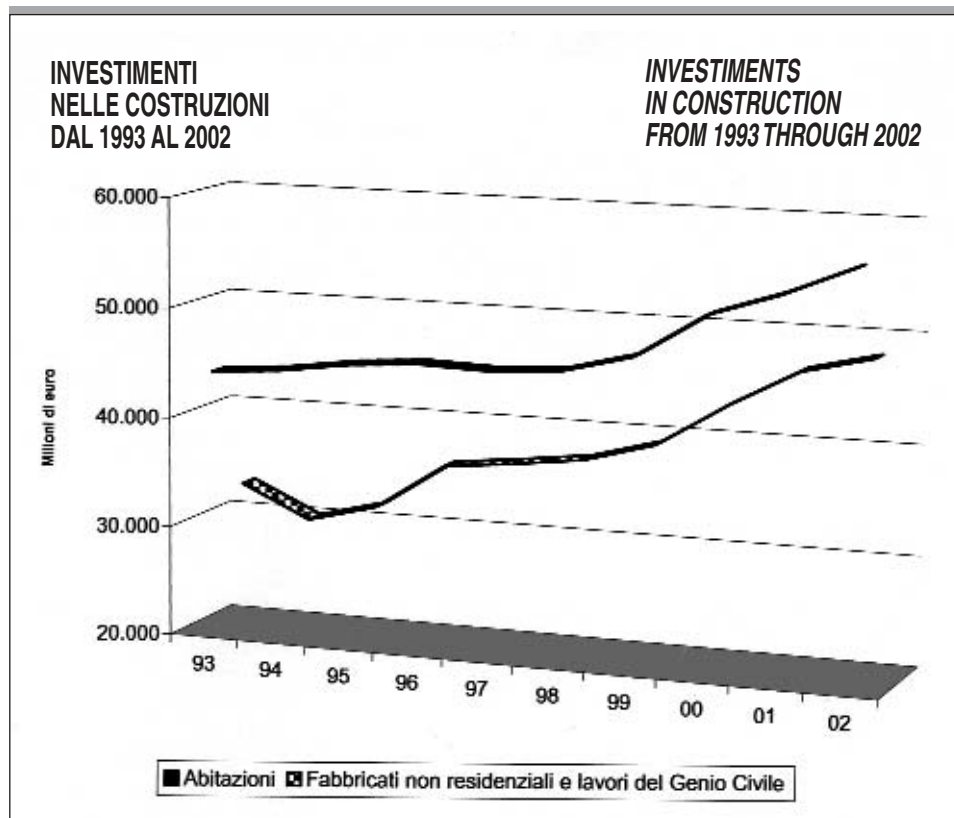
The absolute level of investments in construction in 2002 was 104,855 million euros with a nominal growth of 4.2% (5.9% in 2001), and an incidence on the gross national product, computed on aggregates expressed in constant prices, that was substantially stable at 8.4%, still some ways from the average of the principal countries of the European Union.

The slowdown concerned most especially non-residential building construction and public works, which, despite the recovery in the second half of the year, went from a real growth rate of 5.1% in 2001, to a 0.3% decline in 2002, coming out at 48,067 million euros, relative to a value of 46,513 million euros in 2001 (3.34% in monetary terms).

Less marked was instead the slowdown in the dwellings sector, which grew in real terms by 0.9% during 2002, against a 1.7% increase in 2001. The investments in residential building construction in 2002 were 56,788 million euros, with a nominal increase of 4.97% over the level of 2001 (54,101 million euros).

This divergence in behaviour is in part to be correlated with the strong demand for special maintenance operations owing to the extension of the tax incentives on investments for upgrading dwelling assets. The number of requests for tax deductions in 2002, equal to 330,000, in fact grew by 12.3%, with a spike of 33.2% in the Italian south.

As was anticipated, 2002 was characterized by an anomalous divergence between the official ISTAT data, set forth above, and



the data surveyed by the National Building Contractors Association (ANCE). The association in fact found, owing for one thing to an *ad hoc* study made on the member companies, a better picture for the sector, with a growth of construction investments of 2.3%, in any event a further downsizing over the two previous years (5.9% in 2000 and 3.7% in 2001).

Still according to ANCE, the sector-wide behaviour breaks down into an increase of 2.5% in investments in dwellings, which, in particular, was 2% for new dwellings (47.7% of the investments in dwellings) and 3% for upgrading the dwelling heritage. Both were sustained too by the continual drop in interest rates, which produced in 2002 a consistent increase in the loans made: of 26.4% for those going to purchase, and of 8.1% for the loans to be used for upgrading operations (source: *Banca d'Italia*).

As regards other constructions, which accounted for 45.6% of the total investments in construction, ANCE finds an increase of

2.1%, with diverging results between instrumental building construction (a growth of 2.8%) , which felt the positive effects of the Tremonti-bis law, and public works (a 1% growth).

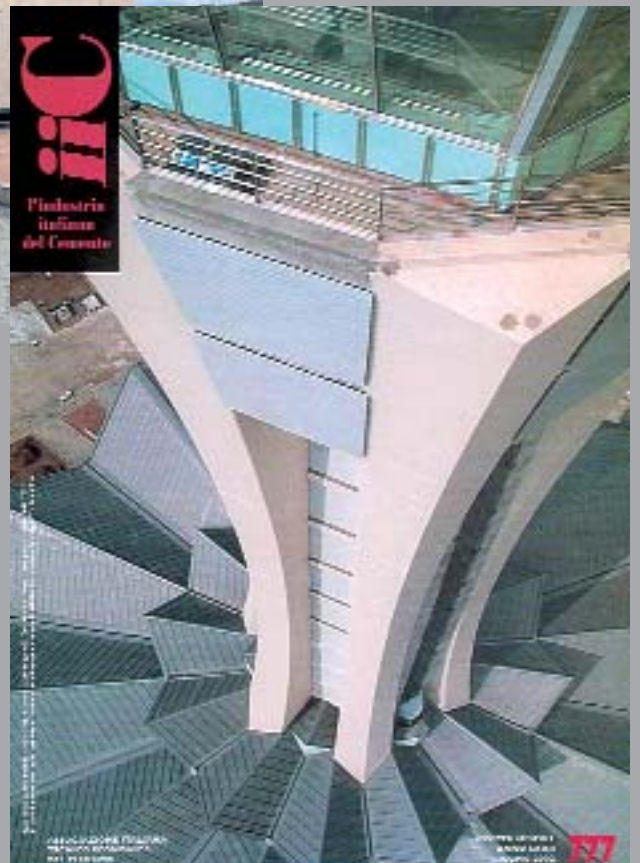
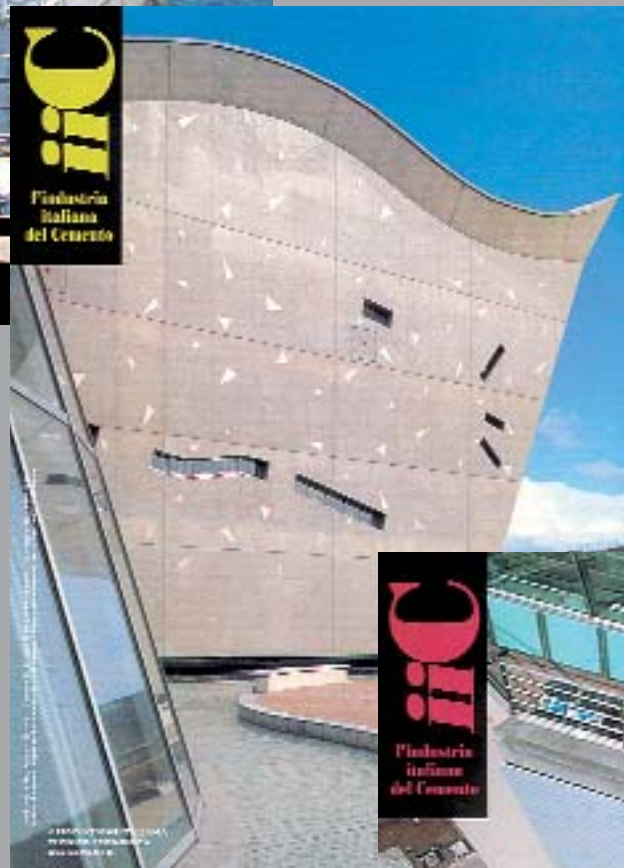
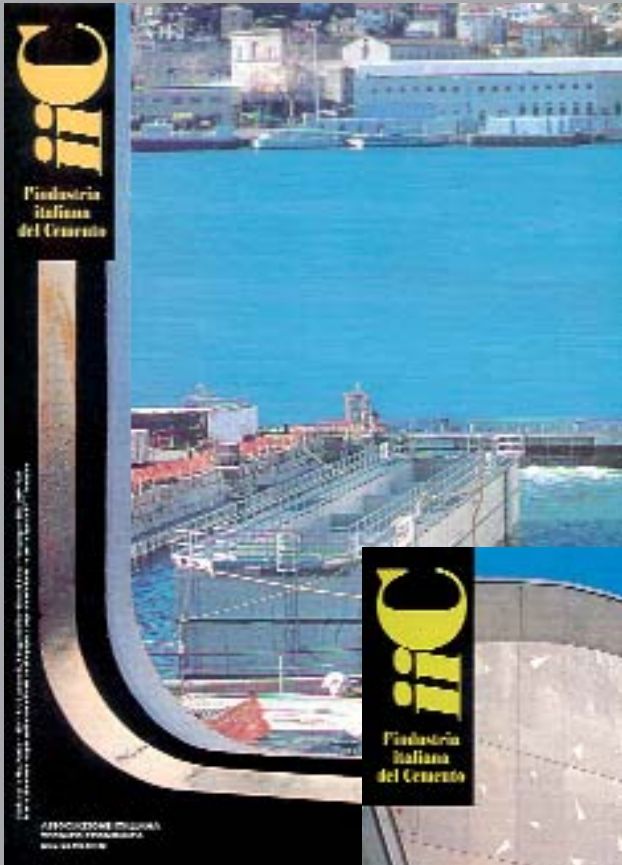
With regard to investments in public works, these reported sensibly lower results than those expected, especially for the works commissioned by the central administration. To be noted furthermore is that for 29 large jobs, of the 220 placed in the program of the "Objective" law (no. 443/2001), strong slowdowns are being seen in the Special Board for Environmental Impact Evaluation, which are creating an accumulation of delays relative to

ANDAMENTO DEGLI INVESTIMENTI NELLE COSTRUZIONI EVOLUTION OF CONSTRUCTION INVESTMENTS							
	Milioni di euro correnti Millions of current euro			Variazioni % sull'anno precedente % change over previous year			
	2000	2001 (a)	2002 (a)	2001 (b)		2002	
Costruzioni / Constructions	95.012	100.614	104.855	3,20	5,90	0,30	4,22
– abitazioni / residential	51.965	54.101	56.788	1,70	4,11	0,90	4,97
– fabbricati non residenziali e opere pubbliche <i>non residential buildings and public works</i>	43.048	46.513	48.067	5,10	8,05	–0,30	3,34

(a) in Euro 1995; (b) in Euro correnti. / (a) in 1995 euro; (b) in current euro.
Consuntivi Relazione Generale sulla Situazione Economica del Paese.

the schedule envisaged by the relevant legislative decree. It should be noted that this law's revision of the decision-making and authorization process had as its specific aim to sensibly reduce the time needed to build the works.

It is also necessary to shed some light on the financial resources assigned to the construction of these works, for which an expenditure during the two-year period 2002-2004 of 24,000 million euros was envisaged. The resources available, as things stand today, are considerably less than those needed for carrying out the infrastructures plan, considering too the low presence of private capital, which had been expected to make a substantial contribution to project financing.



Cement consumption and production in Europe

■ The European Union's construction industry reported during 2002 an increase in real terms of 0.6% over the previous year. This variation followed up a series of five positive years: 1997 (up 0.5%), 1998 (up 1.8%), 1999 (up 2.3%), 2000 (up 2.7%) and 2001 (up 0.7%).

In detail the individual sections displayed, relative to the previous year, the following developments: new dwellings (up 0.6%), maintenance and restructuring (up 0.9%), non-residential building construction (up 0.1%) and publicly-sponsored civil engineering and hydraulics works (up 1.4%).

Going on now to an inspection of the construction sector balance sheets for each member of the European Union, we find, still referring to 2002, the marked contraction seen in Germany (down 5.5%), which follows that of 2001. Negative results were also seen in Belgium (down 4.0%, Ireland (down 3.5%), Denmark (down 2.1%, Portugal (down 1.6%), the Netherlands (down 1.1%), France (down 0.8%) and Finland (down 0.6%). Growing, and listed in

PRODUZIONE DI CEMENTO IN EUROPA / CEMENT PRODUCTION IN EUROPE			
	000 t. / 000 tonnes		
	Produzione / Production		Variazioni % / Change %
	2002	2001	2002/2001
Spagna / Spain	42.422	40.520	4,7
Italia / Italy	41.417	39.804	4,1
DK, Irl., P, S, SF, GR / DK, Ireland, P, S, SF, GR	33.758	35.092	-3,8
Germania / Germany	30.800	30.989	-0,6
Francia / France	20.032	20.559	-2,6
BEL, NL, L / Belgium, NL, L	11.909	12.230	-2,6
Regno Unito / UK	11.433	11.261	1,5
Austria / Austria	3.967	3.863	2,7
Totale paesi U.E. / Total U.E. countries	193.371	191.607	0,9
Turchia / Turkey	37.267	33.368	11,7
N, CH, ICE / N, CH, ICE	5.801	5.947	-2,5
Total Paesi extra U.E. / Total non-U.E. countries	43.068	39.315	9,5
Totale Europa / Total for Europe	236.439	230.922	2,4

Fonte: Cembureau. / Source: Cembureau.

I totali non includono gli scambi commerciali di clinker. / The totals do not include sales of clinker.

RIPARTIZIONE GEOGRAFICA DELLA PRODUZIONE EUROPEA DAL 1993 AL 2002 GEOGRAPHIC DISTRIBUTION OF EUROPEAN PRODUCTION FROM 1993 THROUGH 2002										
										000 t. / 000 tonnes
	1993	1994	1995(*)	1996	1997	1998	1999	2000	2001	2002
Paesi UE / <i>UE countries</i>	157.880	167.917	172.689	169.546	174.272	182.326	189.459	193.853	191.607	193.371
di cui Italia / <i>of which Italy</i>	34.705	33.084	34.019	33.832	34.378	36.076	37.299	39.020	39.804	41.417
Altri Paesi europei / <i>Other European countries</i>	46.098	43.352	40.349	41.136	42.801	43.801	40.420	44.495	39.315	43.068
Totale / Total	203.978	211.269	213.038	210.682	217.073	226.127	229.879	238.348	230.922	236.439

(*) Nel 1995 sono entrati a far parte della UE l'Austria, la Svezia e la Finlandia. / In 1995 Austria, Sweden and Finland entered the U.E.

CONSUMI DI CEMENTO PRO-CAPITE IN EUROPA PER CAPITA CEMENT CONSUMPTIONS IN EUROPE			
			kg
	2002	2001	Variazioni % / Change % 2002/2001
Lussemburgo / <i>Luxembourg</i>	1.227	1.232	- 0,4
Spagna / <i>Spain</i>	1.086	1.045	3,9
Portogallo / <i>Portugal</i>	1.041	1.100	- 5,4
Grecia / <i>Greece</i>	986	901	9,4
Irlanda / <i>Ireland</i>	798	824	- 3,2
Italia / <i>Italy</i>	724	703	3,0
Svizzera / <i>Switzerland</i>	554	579	- 4,3
Belgio / <i>Belgium</i>	529	556	- 4,9
Islanda / <i>Iceland</i>	400	550	- 27,3
Austria / <i>Austria</i>	535	546	- 2,0
Turchia / <i>Turkey</i>	415	385	7,8
Germania / <i>Germany</i>	350	381	- 8,1
Paesi Bassi / <i>Holland</i>	374	383	- 2,3
Francia / <i>France</i>	349	349	0,0
Finlandia / <i>Finland</i>	309	317	- 2,5
Danimarca / <i>Denmark</i>	297	280	6,1
Norvegia / <i>Norway</i>	280	277	1,1
Regno Unito / <i>UK</i>	218	210	3,8
Svezia / <i>Sweden</i>	176	182	- 3,3
Totale Europa / Total for Europe	493	487	- 1,2

decreasing order of percentages, were the United Kingdom (up 8.1%), Spain (up 4.6%) after three consecutive years of strong growth, Italy (up 2.3%), Sweden (up 0.8%) and Austria (up 0.2%).

Connected to this state of things, cement consumption in the

complex of Community countries grew by 0.7% over 2001, with a variation more or less analogous to the construction industry's, reaching 192 million euros or 904 thousand tons.

The major cement consumers in 2002 were, in order: Spain, with 44 million 82 thousand tons (up 4.6%), first-ranking for the third consecutive year; second was Italy with 41 million 269 thousand tons (up 4.6% over 2001); third was Germany with 28 million 900 thousand tons (down 8.0%), pursuing a downward phase, motivated as mentioned above by the downsizing of the local construction industry; stationary (up 0.3%) was the fourth, France, with 20 million 727 thousand tons. The United Kingdom, sustained by a sensible growth of public works, chalked up fair progress (up 4.5%) in cement consumption, which was 13 million 100 thousand tons.

After these came Portugal, with 10 million 800 thousand tons (down 4.7%) and Greece, with 10 million 440 thousand tons (up 9.6%). In the latter case the decided development owed to the construction of large infrastructures, with a view to the upcoming 2004 Olympics.

For the other four non-European Union countries that belong however to Cembureau – European Cement Association, which together totaled up cement consumption of 32 million 487 thousand tons, 2002 was characterized by an overall improvement (up 1.4% over 2001), brought about almost exclusively by the behaviour of Turkey's market (up 6.3%).

The Cembureau member countries on the whole absorbed 246 million 230 thousand tons of cement, with an increase of 1.3% over 2001.

The cement production of the Cembureau member countries finally amounted on the whole to 236 million 439 thousand tons, with an increase of five million 517 thousand tons (up 2.4%) over 2001. Of this amount 193 million 371 thousand tons were of European Union origin, with a growth of one million 764 thousand tons (up 0.9%) over 2001, and 43 million 68 thousand tons were of non-European Community origin, with an increment of 3 million 753 thousand tons (up 9.5%) over 2001.

For the second consecutive year Spain confirmed its primacy among Western European cement producers, with 42 million 422 thousand tons (up 4.7% over 2001). There followed, in order: Italy, with 41 million 417 thousand tons (up 4.1%); Turkey, with 37 million 267 thousand tons (up 11.7%); Germany with 30 million 800 thousand tons (down 0.6%), and France, with 20 million 32 thousand tons (down 2.6%).

Cement production and consumption in Italy

■ As is set forth in more detail in other chapters of this report, 2002 too was distinguished by the persistence of a positive situation for Italy's construction sector. This in fact attracted investments exceeding those of 2001 by 4.2% in monetary terms and by 1.3% in real terms (growth with the change in costs subtracted). This state of affairs exerted a positive effect on the nation's cement market (internal consumption and deliveries), which further improved the positions won in 2001.

In particular consumption increased by 41 million 269 thousand tons, with an increase of 4.6% over 2001 and of 22.7% over 1996 (the most negative year of the entire two decades). To go into details on the large geographic sectors of the country, it may be observed that, relative to the preceding year and against the decided increase in consumption in the north and in the center, in the south consumption was stationary, while in the islands there was a more sensible decrease.

From the time standpoint too there was some diversity between the two halves of the year: expansion was in fact more marked (up 6.9%) in the second half, while more contained (up 3.1%) in the first half.

For internal deliveries too – cement consumption produced in Italy – which ran up to 39 million 168 thousand tons of cement, there was a fair growth (up 5.1%) over 2001.

In such a market situation Italian cement production too displayed an upward change over 2001. With 41 million 417 thousand tons and an increase of one million 613 thousand tons over the preceding year (up 4.1%) it thus returned to the levels of 1992, the best year before the downsizing period (1993-96). The not-exact coincidence between the developments of production and consumption is fundamentally to be attributed to the contraction of cement exports over 2001 (down 8.2%) which was greater than for imports (down 5.3%).

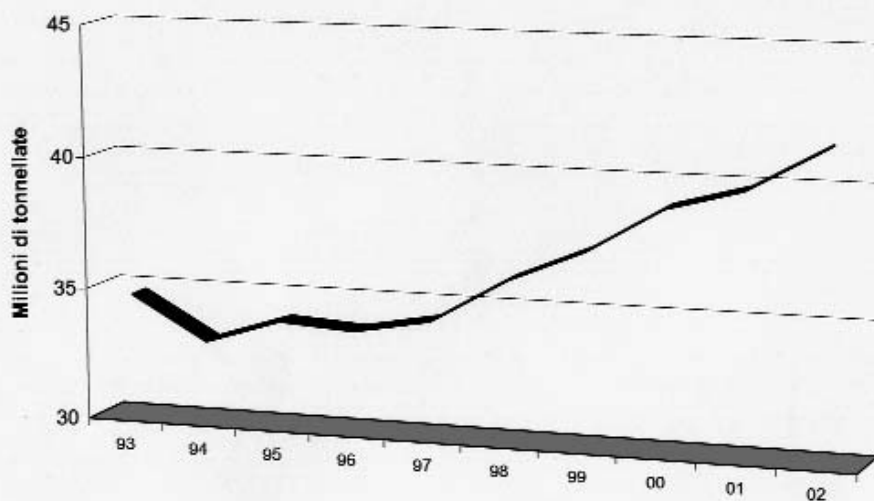
The production dynamics bring out differences relative to the previous year, and sensible ones too, both time wise and on the territory level. The progress was 4.1% for both halves of 2002, while for the individual months – all upward with the exception of June and October – production went from a peak of up 10.0% in December to a low of down 1.0% in June, compared with the corresponding months for 2001.

The increase in cement production came about during the same number of working days as for 2001.

In the large areas of our nation we find, still relative to the previous year, a regression in insular Italy (down 3.5%), in counter trend to the developments, more or less decisive, of the north (up

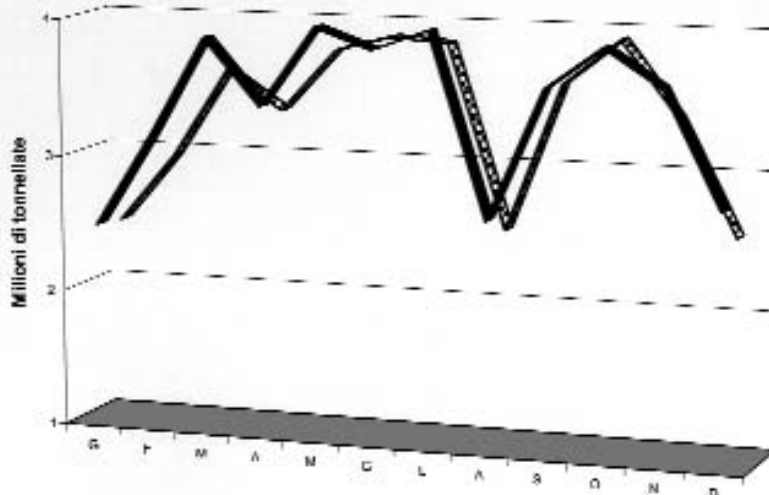
**PRODUZIONE DI CEMENTO
DAL 1993 AL 2002**

**CEMENT PRODUCTION
FROM 1993 THROUGH 2002**



**PRODUZIONE MENSILE DI CEMENTO
DAL 2001 AL 2002**

**MONTHLY CEMENT PRODUCTION
FROM 2001 THROUGH 2002**



■ Anno 2002 ■ Anno 2001

PRODUZIONE DI CEMENTO 2002 E 2001 PER REGIONI E PER GRANDI AREE TERRITORIALI CEMENT PRODUCTION IN 2002 AND 2001 BY REGION AND BY LARGE TERRITORIAL AREAS			
	t. / tonnes		
	2002	2001	Variazioni % / change %
Piemonte	3.723.050	3.520.833	5,7
Liguria	121.364	116.920	3,8
Lombardia	6.331.816	6.155.476	2,9
Veneto	4.912.238	4.527.643	8,5
Friuli-Venezia Giulia	1.405.649	1.160.330	21,1
Trentino-Alto Adige	596.854	553.137	7,9
Emilia-Romagna	3.381.702	2.938.552	15,1
<i>Settentrione / North</i>	<i>20.472.673</i>	<i>18.972.891</i>	<i>7,9</i>
Toscana	2.149.333	2.049.098	4,9
Marche	392.656	374.244	4,9
Umbria	2.570.017	2.594.722	- 1,0
Lazio	2.696.626	2.629.530	2,6
<i>Centro / Centre</i>	<i>7.808.632</i>	<i>7.647.594</i>	<i>2,1</i>
Abruzzo	1.059.801	1.040.024	1,9
Molise	543.732	479.066	13,5
Campania	2.184.352	2.097.083	4,2
Puglia	2.863.547	2.979.979	- 3,9
Calabria	1.020.610	957.880	6,5
Basilicata	1.080.888	1.086.466	- 0,5
<i>Meridione / South</i>	<i>8.752.930</i>	<i>8.640.498</i>	<i>1,3</i>
Sardegna	1.200.881	1.221.492	- 1,7
Sicilia	3.181.496	3.321.593	- 4,2
<i>Isole / Islands</i>	<i>4.382.377</i>	<i>4.543.085</i>	<i>- 3,5</i>
<i>Totale / Total</i>	<i>41.416.612</i>	<i>39.804.068</i>	<i>4,1</i>

7.9%), of central Italy (up 2.1%) and of the south (up 1.3%). The northern area, with 20.5 million tons, saw its share of the national total grow to 49.4%.

Among the regions the best results, still compared with 2001, were chalked up by Friuli-Venezia Giulia (up 21.1%), Emilia Romagna (up 15.1%), and Molise (up 13.5%). The least favorable were Sicily (down 4.2%), Puglia (down 3.9%) and Sardinia (down 1.7%).

GIACENZE, CONSUMI E CONSEGNE INTERNE / STOCKS, CONSUMPTIONS AND DELIVERIES WITHIN ITALY						
						t. / tonnes
Giacenze / Stocks		Variazioni % / change % 2002/2001		Consumi interni Domestic consumptions	Variazioni % change % 2002/2001	Consegne interne Domestic deliveries
	cemento cement	clinker	cemento cement	clinker	cemento cement	cemento cement
2002	1.254.109	2.040.430			41.268.850	39.168.013
			- 2,0	- 11,9	4,6	5,1
2001	1.279.092	2.317.193			39.468.813	37.249.882

PRODUZIONE MENSILE / MONTHLY PRODUCTION			
			t. / tonnes
	2002	2001	Variazioni % / change %
Gennaio / January	2.485.318	2.453.949	1,3
Febbraio / February	3.158.838	2.951.315	7,0
Marzo / March	3.887.004	3.595.884	8,1
Aprile / April	3.407.565	3.320.671	2,6
Maggio / May	3.992.488	3.776.109	5,7
Giugno / June	3.843.681	3.884.029	- 1,0
Luglio / July	3.994.457	3.851.438	3,7
Agosto / August	2.658.833	2.524.345	5,3
Settembre / September	3.613.587	3.590.840	0,6
Ottobre / October	3.917.220	3.921.608	- 0,1
Novembre / November	3.646.509	3.377.913	8,0
Dicembre / December	2.811.112	2.555.967	10,0
Totale / Total	41.416.612	39.804.068	4,1

In order to properly evaluate the true behaviour of the local markets it must be noted that the regional production reflects the importance of the production facilities within the individual regions, but is not in itself closely indicative of the associated consumptions, since the destination of the product beyond the borders of the region of production is a current business fact of life, strongly correlated with the needs of the local markets.

At the end of 2002 cement stocks amounted to 1 million 254 thousand tons, those of semi-finished (clinker) 2 million 40 thou-

PRODUZIONE DI CEMENTO PER ABITANTE (*) CEMENT PRODUCTION PER INHABITANT (*)			
	kg		
	2002	2001	Variazioni Change % 2002/2001
Settentrione / North	801	742	7,8
Centro / Centre	716	722	-0,8
Meridione / South	629	635	-0,9
Isole / Islands	664	712	-6,8
Media / Average	727	709	2,5

(*) Rapporto produzione-popolazione. / Production-population ratio.

sand tons, with a backsliding relative to 2001 of 2.0% and 12% respectively.

The forecasts for 2003 on the behaviour of the Italian cement sector are closely tied to those concerning the development of the local construction industry, expected to expand further as a whole. All sectors should report upward movements a little greater than one and a half percentage points.

In 2003 the process of entering the Objective Law into force should get into the quick, this law's aim to relaunch the modernization of the country's infrastructures. The government, in its upcoming DPEF (economic and financial planning document) should shed light on the level of effort that is actually available for the construction of strategic works and its compatibility with the resources already assigned to ordinary works, in order that the attention paid to the great strategic works not detract from the sizeable infrastructures gap at the local level.

The effects for the cement industry of the strategic plan for carrying out investments should be felt towards the end of 2003 and during the succeeding years.

The nation's cement imports and exports

■ Commercial trade in the Italian cement sector closed 2002 for the second time in a row with a negative balance: 1 million 522 thousand tons, an increase of 136% over 2001 (644 thousand tons).

Cement and semi-finished clinker exports were, in 2002, 2 million 357 thousand tons overall, with a dip of 8.5% relative to 2001, amounting to 5.7% of production (6.5% in 2001).

The dip involved both cement, with exports of 2 million 274 thousand tons (down 8.2% over the 2 million 477 thousand tons of the preceding year), and clinker, whose exports dropped to 83 thousand tons (down 16.7% over 2001). The shares of production exported were in 2002 5.5% for cement (6.2% in 2001) and 0.26% for clinker (0.32% in 2001). Regarding the type of product exported, a slight increase was noted in white cement exports and slag cement exports, while the major dip in absolute value was in portland cement.

In terms of contribution to the export flows by geographic areas of product origin, in 2002 too we find the South in first place, which, with 1 million 91 thousand tons of product exported, accounted for 48% (50.5% in 2001) of the total of national exports. Next came insular Italy, with 824 thousand tons and an incidence of 36.2% (35.4%), and then the North, the only area to have increased its export flow (up 13.2%), with 321 thousand tons and a 14.1% contribution (11.5% in 2001). The center is the area that displayed the greatest dip in exports with a scant 37 thousand tons and an incidence of 1.6% (2.6%). In 2002 as well the biggest exporting regions were confirmed as Puglia (1 million 82 thousand tons) and Sicily (669 thousand tons), which owing to the presence of important port infrastructures accounted for 77% of total exports.

As for the foreign countries of destination, in 2002 as well the weight of the European countries grew once more, they absorbing 98.3% of exports (94.1% in 2001, 87.4% in 2000), followed by Africa (1.3%), and Algeria in particular; the flows to the Americas were marginal, while in 2001 they had accounted for almost 6% of the total. Among the principal destinations we find Albania with 28.1%, Spain with 15.5%, Malta with 13.2%, Portugal with 8.4%, Switzerland with 8.1%, and Holland with 6.5%, countries that all together accounted for 79.8% of exports. In 2002 as well clinker exports were almost exclusively to Switzerland.

Cement and clinker imports in 2002 exceeded the historic peak recorded in 1992; in fact they amounted to 3 million 878 thousand tons, a growth of 20.4% over 2001, representing a 9.4% share of overall production, the highest absolutely (8.1% in the

ESPORTAZIONI E IMPORTAZIONI NAZIONALI DI CEMENTO E CLINKER / CEMENT AND CLINKER EXPORTS AND IMPORTS RELATIVE TO ITALY								
000 t. / 000 tonnes								
Esportazioni / Exports					Importazioni / Imports			
cemento	clinker	Totale	% di produzione esportata		cemento	clinker	Totale	% di produzione importata
<i>cement</i>	<i>clinker</i>	<i>Total</i>	<i>% of production exported</i>		<i>cement</i>	<i>clinker</i>	<i>Total</i>	<i>% of production imported</i>
1993	189	66	255	0,7	3.101	81	3.182	9,2
1994	570	108	678	2,0	2.425	29	2.454	7,4
1995	1.137	192	1.329	3,9	1.818	23	1.841	5,4
1996	1.524	127	1.651	4,9	1.277	27	1.304	3,9
1997	2.005	131	2.136	6,3	1.384	149	1.533	4,5
1998	2.584	147	2.731	7,6	1.084	101	1.185	3,3
1999	2.480	92	2.572	6,9	1.457	220	1.677	4,5
2000	2.466	95	2.561	6,6	1.793	547	2.340	6,0
2001	2.477	100	2.577	6,5	2.219	1.001	3.220	8,1
2002	2.274	83	2.357	5,7	2.101	1.777	3.878	9,4

preceding year and 6% in 2000).

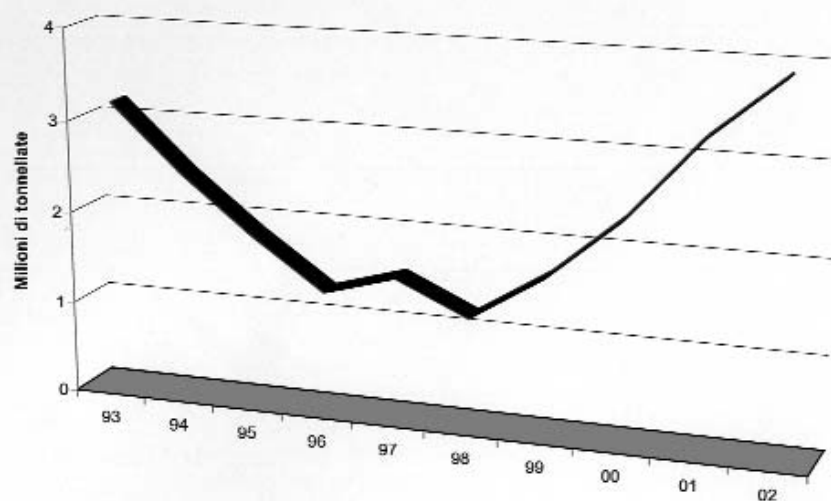
Imports displayed counterpoised behaviors: cement imports dropped by 5.3% (2 million 101 thousand tons as against the 2 million 219 thousand tons of 2001), a dip that held true for all product typologies except for slag cement, while clinker imports increased by 77.5%, going from 1 million for the last year to 1 million 777 thousand tons, the historic peak.

The cement import quotas for the various geographic areas displayed no particular changes over the last year: the North took the largest share of imports (53.3%), followed by the South (34.2%), by the Islands (9.7%), and by the Center (2.8%). Lombardy, in 2002 as well, was the region with the largest volumes of imports, with 619 thousand tons, followed by Campania and Puglia, with 324 and 307 thousand tons respectively.

For the third year in a row the most important supplier of imported cement was Turkey, with 1 million 71 thousand tons, accounting for 51% (55.4% in 2001) of total cement imports. Greece confirmed its second place with 353 thousand tons and an incidence of 16.8% (17.2% in 2001). Against this trend were the imports from Croatia, which instead increased by 31.1%, reaching a 16.1% share (11.6% in 2001). Among the other countries of origin are to remarked France, with a 5.4% share and Slovenia, with a 5.3% share. These five countries covered 94.6% of total imports.

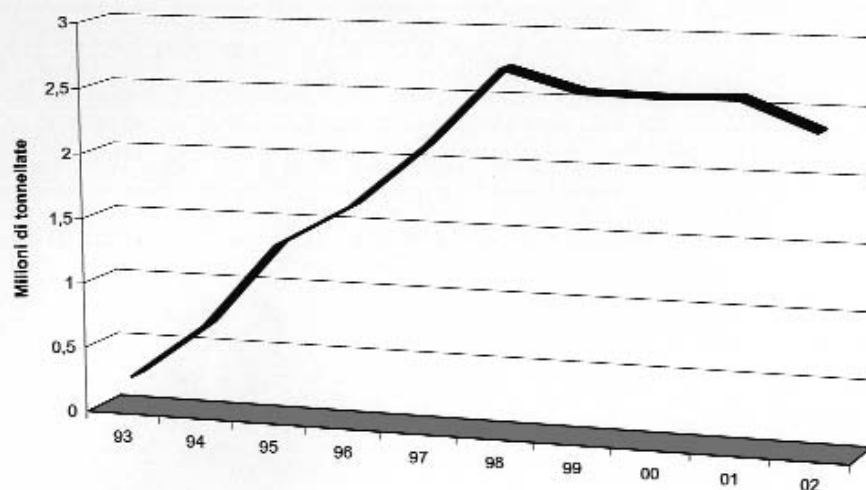
**ANDAMENTO DELLE IMPORTAZIONI
NAZIONALI DI CEMENTO E CLINKER
DAL 1993 AL 2002**

**NATIONAL CEMENT
AND CLINKER IMPORTS
FROM 1993 THROUGH 2002**



**ANDAMENTO DELLE ESPORTAZIONI
NAZIONALI DI CEMENTO E CLINKER
DAL 1993 AL 2002**

**NATIONAL CEMENT
AND CLINKER EXPORTS
FROM 1993 THROUGH 2002**



IMPORTAZIONI DI CEMENTO PER REGIONI NEL 2002 / CEMENT IMPORTS IN 2002 BY REGION			
			t. / tonnes
	Importazioni / Imports	Produzione / Production	% della produzione % of production
Piemonte	19.624	3.723.050	0,5
Liguria	40.518	121.364	33,4
Lombardia	619.131	6.331.816	9,8
Veneto	261.528	4.912.238	5,3
Friuli-Venezia Giulia	124.293	1.405.649	8,8
Trentino-Alto Adige	25.692	596.854	4,3
Emilia-Romagna	28.647	3.381.702	0,8
<i>Settentrione / North</i>	<i>1.119.433</i>	<i>20.472.673</i>	<i>5,5</i>
Toscana	24.753	2.149.333	1,2
Marche	18	392.656	0,0
Umbria	3.205	2.570.017	0,1
Lazio	31.264	2.696.626	1,2
<i>Centro / Centre</i>	<i>59.240</i>	<i>7.808.632</i>	<i>0,8</i>
Abruzzo	1.670	1.059.801	0,2
Molise	0	543.732	0,0
Campania	324.264	2.184.352	14,8
Puglia	306.993	2.863.547	10,7
Calabria	86.009	1.020.610	8,4
Basilicata	46	1.080.888	0,0
<i>Meridione / South</i>	<i>718.982</i>	<i>8.752.930</i>	<i>8,2</i>
Sardegna	95.507	1.200.881	8,0
Sicilia	107.675	3.181.496	3,4
<i>Isole / Islands</i>	<i>203.182</i>	<i>4.382.377</i>	<i>4,6</i>
<i>Totale / Total</i>	<i>2.100.837</i>	<i>41.416.612</i>	<i>5,1</i>

Turkey, India and Lebanon were confirmed for 2002 as well as the main suppliers of imported clinker, with a quota of 66.5%, 18.3% and 4.9% respectively. The last was a decline relative to the 10% of 2001.

The data on world trade in cement in 2002 confirms, for the fourth year in a row, Thailand as the principal exporting country

**ESPORTAZIONI DI CEMENTO E CLINKER DI ALCUNI PAESI DELL'EUROPA OCCIDENTALE /
CEMENT AND CLINKER EXPORTS FROM WESTERN EUROPEAN COUNTRIES**

	000 t. / 000 tonnes				
	2002	% della produzione % of production	2001	% della produzione % of production	Variazioni % / change % 2001/2000
Turchia / Turkey	10.421	28,0	8.622	25,8	20,9
DK, Irl., P, S, SF, GR / DK, Irl., P, S, SF, GR	6.773	20,1	8.566	24,4	- 20,9
Bel, NL, L / Belgium, NL, L	3.976	33,4	3.740	30,6	6,3
Germania / Germany	3.711	12,0	3.747	12,1	- 1,0
Italia / Italy	2.357	5,7	2.577	6,5	- 8,5
Francia / France	1.527	7,6	1.755	8,5	- 13,0
Spagna / Spain	1.452	3,4	1.445	3,6	0,5
Regno Unito / UK	482	4,2	493	4,4	- 2,2

MAGGIORI ESPORTATORI MONDIALI DI CEMENTO / MAJOR WORLD CEMENT EXPORTERS

	milioni di t. / millions of tonnes	
	2002	2001
Tailandia / Thailand	16,6	16,6
Turchia / Turkey	10,4	8,6
Indonesia / Indonesia	9,0	9,5
Giappone / Japan	8,3	7,6
India / India	6,3	5,2
Cina / China	6,0	6,0
Canada / Canada	5,5	5,4
Taiwan / Taiwan	3,9	3,4
Germania / Germany	3,7	3,7
Corea / Korea	3,4	4,6
Malesia / Malaysia	3,0	2,0
Italia / Italy	2,4	2,6
Filippine / Philippines	1,9	2,0
Francia / France	1,5	1,8
Spagna / Spain	1,5	1,4

(16.6 million tons – stable relative to 2001), while second place is taken by Turkey, which, with 10.4 million tons, (up 21% over 2001), overtook Indonesia, which dropped in 2002 to third place, with 9 million tons of cement exported. To be noted too is India's good result, she having risen to fifth place – preceded by Japan as fourth place exporting country.

Distribution of production by technical characteristics and composition

■ Cement is classified according to two parameters: its composition characteristics (types) and its strength requisites (class).

On the basis of the former of the two criteria the percentage incidence of the principal cement typologies produced in 2002 can be measured, and compared with that for the previous years.

During 2002 portland cement stayed substantially stable, going from 74.0% to 74.1%. Pozzolana cement continued the dip already seen for years, reaching 10.8% from the earlier 11.9%. Lower increases were noted for slag cement (from 5.7% for the previous year to 5.9% in 2002), and for the other cement types (from 8.4% to 9.2%).

Going on then to consider the individual types of cement produced in Italy in 2002, it can be seen from the table that they numbered thirteen (unchanged over 2001 and 2002) out of the twenty-five envisaged by the technical codes in force on common cements. Among the types produced it may be observed that the three most in demand by consumers - which accounted for 71.3% of total production - were the following: CEM II/A-L, CEM II/B-L, and CEM I, all three belonging to the portland cement category. In particular CEM II/A-L, with its growth of some 900 thousand tons (up 4.7%) over 2001, was confirmed as the most used in construction, with a market share of 48.5% (48.2% in 2001); second place was taken by CEM II/B-L, accounting for 13.9% (14.4% in 2001), and third place by CEM I, with a 9.0% share (8.9% in 2001).

Going on now to consider the second of the cement classification parameters - strength requisites - surveys show that the high-strength class, 18 million 510 thousand tons, increased by around 1 million 865 thousand tons (up 11.2%) over 2001, strengthening its incidence on total cement produced, having arrived at 44.7%. Thus a trend has been confirmed that, over the years, and not always uniformly, has brought the incidence of this class from 29.0% in 1982 to 41.8% in 2001 and to 44.7% in 2002.

The reasons that have led the nation's construction companies to lean more and more toward the high-strength cements arise from the advantages that these offer: both greater mechanical performance and speed of building construction, with a consequent lowering of construction costs.

The diffusion of the use of high-strength cement did not display in 2002, nor did it for that matter during previous years, any particular territorial homogeneity. This fact depends, even if only partially, on the different construction traditions rooted

ANDAMENTO DELLA RIPARTIZIONE DEI CEMENTI PER PRESTAZIONI / CEMENT PERFORMANCE DISTRIBUTION BEHAVIOUR										
	%									
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Normali / Standard	65,5	65,6	64,8	64,0	63,2	60,6	59,9	59,1	58,2	55,3
Alta resistenza / High strength	34,5	34,4	35,2	36,0	36,8	39,4	40,1	40,9	41,8	44,7

ANDAMENTO DELLA RIPARTIZIONE PER TIPI BEHAVIOUR OF DISTRIBUTION BY TYPE				
	%			
	Portland Portland	Pozzolanic Pozzolanic	Altoforno Slag	Altri Others
1993	60,9	32,6	5,4	1,1
1994 (*)	73,7	20,7	5,4	0,2
1995 (*)	75,5	18,1	4,9	1,5
1996 (*)	75,0	16,6	4,8	3,6
1997 (*)	75,7	16,4	4,6	3,3
1998 (*)	74,4	15,7	4,5	5,4
1999 (*)	73,3	14,1	5,6	7,0
2000 (*)	73,6	12,8	5,3	8,3
2001 (*)	74,0	11,9	5,7	8,4
2002 (*)	67,0	17,9	5,9	9,2

2002 RIPARTIZIONE PER GRANDI CLASSI NELLE AREE GEOGRAFICHE 2002 DISTRIBUTION BY BROAD CLASSES				
	Cementi normali Standard cements		Cementi ad alta resistenza High strength cements	
	t. / tonnes	%	t. / tonnes	%
Settentrione / North	13.571.803	66,3	6.900.870	33,7
Centro / Central	3.004.778	38,5	4.803.854	61,5
Meridione / South	4.192.135	47,9	4.560.795	52,1
Isole / Islands	2.137.471	48,8	2.244.906	51,2
Totale / Total	22.906.187	55,3	18.510.425	44,7

(*) Ricostruito con la tabella del D.M. 13/09/1993. / Reconstructed using the table of correspondences of D.M. no. 13/09/1993

2002 RIPARTIZIONE PER TIPI DI CEMENTO 2002 DISTRIBUTION BY CEMENT TYPE		
Tipo	t. / tonnes	%
I	3.719.212	8,98
II/A-S	820.049	1,98
II/B-S	1.155.524	2,79
III/A-P	53.842	0,13
II/B-P	144.958	0,35
II/A-T	6.585.242	15,90
II/B-T	2.928.154	7,07
II/A-L	13.481.107	32,55
II/B-L	2.828.755	6,83
II/A-M	260.925	0,63
II/B-M	3.561.829	8,60
III/A	1.101.682	2,66
III/B	186.375	0,45
IV/A	1.677.372	4,05
IV/B	2.650.663	6,40
V/A	260.923	0,63
Totale / Total	41.416.612	

in certain areas of the country. This state of affairs appears evident in central Italy, in which the use of high-strength cement has been prevalent for more than two decades, reaching 61.5% of the total (58.1% in 2001, 51.6% in 1982). In the opposite position we find northern Italy; by habit scantily willing to use this strength class, with a 33.7% share of total production in 2002, which however displays considerable progress over the 30.8% of 2001 and the 20.4% of 1982. A further expansion of the use of the cements in question, considering too that they became the most-used cements in 2002, was found both in southern Italy, which showed a percentage of 52.1% (48.7% in 2001, 28.6% in 1982), and in insular Italy, with 51.2% (47.2% in 2001, 24.2% in 1982).

The increases in high-strength cement production for the large areas of Italy over 2001 showed up in the following percentage measures: in the North, up 18.1%, in the Center up 8.0%, in the South up 8.3%, and in the Islands up 4.7%.

Cement destinations

■ Cement is a binder for materials that by nature are incoherent but of considerable strength. Owing to its reliability and durability, as well as to the excellent workability, versatility and ductility achieved by the most important of its applications, concrete, it displays a very broad range of uses, not all properly exploited in Italy.

Neglecting for the moment the large areas of cement consumption, better known as the end destinations – of which brief mention will be made at the end of this chapter – to be underscored is the special interest had by the fundamental distribution channels of the product called the “intermediate destinations” of cement. These consist of the following: construction companies, concrete plants, industrial precasting firms, wholesalers (or distributors), premixers, exports, and sundry other destinations.

Concrete plants, the most important channel, obtained in 2002 a remarkable success (up 9.9% over 2001), with an incidence that went from 44.5% (for the previous year) to 47.0%, historically the highest point reached in our country.

This product-use channel thus further reinforced its primacy over the others. It has in fact displayed, during the past decades, a quite considerable development even if not always a constant one: (in 1979 it formed 32.6% of the total).

The level currently achieved by premixed concrete – produced by the concrete plants – means that Italy displays values similar to those of the most significant part of the industrialized world.

The ever greater use of premixed concrete is due to the economic advantages that its use procures, for both technological reasons and because it speeds up work schedules, thus appreciably reducing construction yard costs.

Another category that has grown over 2001, both in the amount of cement used and in percentage of total cement used, was the precasters (up 8.2%), which accounted for 13.1% (12.6% in 2001). Precasting, though a few small variations have been seen, has over the past decades maintained a rather constant share of the domestic cement market (around 12-13%).

A slight absolute progress (up 0.8%), but a regress quite as limited in its incidence (from 3.2% in 2001 to 3.1%) was shown by the premixers, which for some years have taken on ever greater importance.

Among the intermediate destinations was the “sundry”, which chalked up, over 2001, the greatest percentage increase (up 28.9%) of cement sold but however has the least share of

2002 DESTINAZIONI INTERMEDIE DEL CEMENTO / CEMENT INTERMEDIATE DESTINATIONS		
	t. / tonnes	%
Esportazione / <i>Export</i>	2.273.582	5,5
Imprese di costruzione / <i>Construction firms</i>	3.603.245	8,7
Altre destinazioni / <i>Other destinations</i>	501.331	1,2
Centrali di betonaggio / <i>Ready-mixed</i>	19.465.808	47,0
Prefabbricatori / <i>Pre-cast</i>	5.425.576	13,1
Rivenditori / <i>Retail sales</i>	8.863.155	21,4
Premiscelatori / <i>Premixing</i>	1.283.915	3,1

ANDAMENTO DELLE DESTINAZIONI INTERMEDIE DEL CEMENTO / BEHAVIOUR OF INTERMEDIATE CEMENT DESTINATIONS											%
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Esportazione / <i>Export</i>	0,5	1,7	3,4	4,5	5,8	7,2	6,6	6,3	6,2	5,5	
Imprese di costruzione / <i>Construction firms</i>	14,0	11,7	9,5	8,7	8,6	8,1	7,5	7,3	9,5	8,7	
Altre destinazioni / <i>Other destinations</i>	1,8	1,5	2,0	2,1	2,4	2,0	2,6	2,7	1,0	1,2	
Centrali di betonaggio / <i>Ready-mixed</i>	39,9	40,3	42,2	42,2	43,3	43,7	44,2	46,0	44,5	47,0	
Prefabbricatori / <i>Pre-cast</i>	12,4	11,9	13,2	13,2	12,2	12,8	13,4	13,2	12,6	13,1	
Rivenditori / <i>Retail sales</i>	31,4	32,9	29,7	29,3	27,7	26,2	25,7	24,5	23,0	21,4	
Premiscelatori / <i>Premixing</i>	n.d./n.a.	n.d./n.a.	n.d./n.a.	n.d./n.a.	n.d./n.a.	n.d./n.a.	n.d./n.a.	n.d./n.a.	3,2	3,1	

overall consumption, 1.2% (1.0% in 2001).

The other channels have all undergone, over 2001, dips both in their size and in their percentage importance.

Construction companies displayed a 4.7% drop in cement used, going from 9.5% of the total in 2001 to 8.7% .

This class has seen over the past decades a gradual downsizing of its importance (in 1992 16.3% of the cement consumed in Italy went through its hands; in 1982 22.3%). This state of affairs can be explained by a sensible drop in the direct relations between cement producers and consumers.

Resellers have seen the amount sold by them drop by 3.2%, with a 21.4% incidence (23.3% in 2001). After a growth that led them to reach their historic peak in 1994 (32.9%), this group too has seen a reduction in its size.

A contraction (down 8.2%) has also been seen in exports, which accounted for 5.5% of overall consumption (6.2% in 2001; 7.2% in 1998). This destination has already been analyzed in detail in another chapter of this report.

The cement sector structure

■ The Italian cement industry, as regards its structural profile, while witnessing the changes that have taken place over the years, maintained in 2002 as well its by-now-consolidated characteristics: a fine-grain distribution of the production apparatus over the nation's territory, with contained transport costs and considerable advantages for the consumer; a quite advanced technological level, which ensures a an excellent quality of the product - beyond code standards; and particular concern for safeguarding the environment.

The operating companies went from 25 in 2001 to 23 in 2002, a continuation of the gradual reduction that has been going on for some years by now (they numbered thirty in 1999, 42 in 1989, and a good 72 in 1969). This decline relative to the preceding year was brought about by processes of company reorganization and merger by incorporation.

Even with the contraction of the number of companies in business, the cement sector in Italy is still one of the most fragmented among the countries of Europe, where the concentrations are much more marked. In France four companies are operating, in Greece four, in the United Kingdom six, in Spain fourteen.

Going on now to an analysis of the data on the distribution of cement production over the companies on the basis of their size, we find that for 2002 in first position, with an incidence of 68.1% (55.3% in 2001, 54.9% in 2000), is the class of companies producing more than three million tons (they numbered four in 2002, and three in both 2001 and 2000), with a share of 27.1% (39.2% in 2001, 39.5% in 2000), there were then eight companies (11 in 2001, 13 in 2000), producing between 500 thousand and three million tons and accounting for 4.8% of the total (5.5% in 2001, 5.6% in 2000). And finally there were eleven companies producing below 500 thousand tons (this class contained the same number in 2001, 12 in 2000).

The operating cement plants numbered 88 in 2002 (there were 86 in 2001 and 2000), of which 59 complete-cycle (60 in 2001) and 29 crushing plants (26 during the preceding year). The increase in the number of crushing plants depended both on the start-up in business of new plants in Emilia Romagna and in Friuli-Venezia Giulia, and on the conversion of a complete-cycle plant to crushing only in Latium.

Looking now at the breakdown of the plants by production classes, it may be noted that, in 2002, the most important, with eighteen cement plants (19 in 2001), was the one lying between 600 thousand and one million tons, with an incidence of

RIPARTIZIONE DELLA PRODUZIONE TRA LE MAGGIORI AZIENDE NEL 2002
PRODUCTION PERCENTAGE OF THE MAJOR FIRMS IN 2002

			%
Gruppi e maggiori aziende associate AITEC / Groups and major firms			
Italcementi	(1 azienda e 34 unità / 1 firm and 34 plants)		30,3
Buzzi Unicem	(2 aziende e 12 unità / 2 firms and 12 plants)		17,9
Colacem	(1 azienda e 9 unità / 1 firm and 9 plants)		13,0
Cementir	(1 azienda e 4 unità / 1 firm and 4 plants)		7,4
Holcim	(1 azienda e 3 unità / 1 firm and 3 plants)		6,5
Cementi Rossi	(1 azienda e 4 unità / 1 firm and 4 plants)		6,1
Sacci	(2 aziende e 4 unità / 2 firms and 4 plants)		3,2
Lafarge Adriasebina	(1 azienda e 2 unità / 1 firm and 2 plants)		2,8
Cementizillo	(1 azienda e 2 unità / 1 firm and 2 plants)		2,7
Monselice	(1 azienda e 1 unità / 1 firm and 1 plant)		1,9
Cementi Moccia	(1 azienda e 1 unità / 1 firm and 1 plant)		1,2
Cementi della Lucania	(1 azienda e 1 unità / 1 firm and 1 plant)		0,5
Altre aziende / Other firms	(9 aziende e 11 unità / 9 firms and 11 plants)		6,5
Totale / Total	23 aziende e 88 unità / 23 firms and 88 plants		100,0

RIPARTIZIONE DELLA PRODUZIONE PER PROCESSO TECNOLOGICO NEL 2002
PRODUCTION DISTRIBUTION BY TECHNOLOGICAL PROCESS IN 2002

	t. / tonnes	%
Via secca e semisecca / Dry and semidry mode	40.417.786	97,6
Via umida / Wet mode	998.826	2,4
Totale / Total	41.416.612	100,0

RIPARTIZIONE DELLE CEMENTERIE PER CLASSI PRODUTTIVE NEL 2002
CEMENT PLANTS DISTRIBUTION BY PRODUCTION OUTPUT IN 2002

	n.	t. / tonnes	%
Fino a 100.000 tonn. / Up to 100,000 tons	15	463.373	1,1
da 100.001 a 300.000 tonn. / from 100,001 to 300,000 tons	20	3.835.344	9,3
da 300.001 a 600.000 tonn. / from 300,001 to 600,000 tons	26	11.970.950	28,9
da 600.001 a 1.000.000 tonn. / from 600,001 to 1,000,000 tons	18	14.190.753	34,3
oltre 1.000.000 di tonn. / over 1,000,000 tons	9	10.956.192	26,9
Totale / Total	88	41.416.612	100,0

Forni di cottura / SINTERING KILNS		
	2002	2001
Forni attivi / Active kilns	88	88
RS Rotanti a via secca e semisecca / <i>RS-Rotary, dry and semidry mode</i>	80	80
RH Rotanti a via umida / <i>RH-Rotary, wet mode</i>	8	8

DISTRIBUZIONE TERRITORIALE DELLE UNITÀ PRODUTTIVE NEL 2002 <i>TERRITORIAL DISTRIBUTION OF PLANTS IN 2002</i>			
	Ciclo completo <i>Full cycle</i>	Sola macinazione <i>Grinding only</i>	Totale <i>Total</i>
Piemonte	3	6	9
Liguria	0	1	1
Lombardia	7	1	8
Veneto	6	5	11
Friuli-Venezia Giulia	3	1	4
Trentino Alto Adige	2	2	4
Emilia-Romagna	4	2	6
<i>Settentrione / North</i>	25	18	43
Toscana	4	2	6
Marche	1	1	2
Umbria	3	0	3
Lazio	2	2	4
<i>Centro / Centre</i>	10	5	15
Abruzzo	3	0	3
Molise	2	0	2
Campania	4	1	5
Puglia	3	2	5
Calabria	2	1	3
Basilicata	3	0	3
<i>Meridione / South</i>	17	4	21
Sardegna	2	1	3
Sicilia	5	1	6
<i>Isole / Islands</i>	7	2	9
Totale / Total	59	29	88

34.3% of the national total (36.0% in 2001) and a contraction of 1.0% compared with the previous year's production. In second place, with 26 plants (24 in 2001) and a growth of 13.2% over 2001, fell the class of plants producing between 300 thousand and 600 thousand tons, which accounted for 28.9% of total production (26.6% for the previous year). There followed, in order: the class of greater than one million tons, with 26.9% of the total (a percentage unchanged over 2001) and holding nine plants (as in 2001) with an increase of 2.1% over the year before; that between 100 thousand and 300 thousand tons which, with twenty plants (18 in 2001) and accounting for 9.3% (9.1% in 2001) of production, achieved an improvement of 6.2% over the past year; and finally the class of plants producing less than 100 thousand tons, which, with fifteen cement plants (16 in 2001) and accounting for 1.1% (1.4% in 2001) dipped by 15.3% compared with 2001.

The average production of the totality of the plants was almost 471 thousand tons as against the 463 thousand of 2001.

To be underscored is the sensible drop in the number of kilns in operation over the years: from 172 in 1980 to 119 in 1990 and 88 in 2002, or 1.5 kilns for each of the complete-cycle plants. This reduction was brought about by technological development and by efforts tending ever more toward efficiency, with a view too to the needs of the cement market.

To be noted in this regard is the consolidated, absolute, pre-eminence of the dry-way and semi-dry-way processes over the wet-way, both in the number of kilns – only eight using the wet way (they numbered 28 in 1980, 14 in 1990) - as against the 80 dry-ways, and in the amount of cement produced in 2002 – 97.6% from dry-way and semi-dry-way kilns, and 2.4% from wet-way kilns (in 1990 the respective percentages were 95.3% and 4.7%).

This data brings out the almost exclusive resort had to the dry- and semi-dry-way procedures, the most advanced from the technological standpoint and the one most widely disseminated in the industrialized countries.

This process, which demands a small moisture content in the raw materials, is preferred for reasons of ecology and economy, since the dry-way and semi-dry-way plants consume decidedly less thermal energy than do the wet-ways.

AZIENDE E UNITÀ PRODUTTIVE COMPANIES AND PLANTS		
	2002	2001
Aziende / Companies	23	25
Unità produttive / Plants	88	86
di cui a ciclo completo of which, full-cycle	59	60
di cui officine di macinazione of which, grinding plants	29	26

RIPARTIZIONE DELLA PRODUZIONE PER CLASSI AZIENDALI NEL 2002 PRODUCTION BY CLASSES OF FIRMS IN 2002		
	n.	%
Inferiori a 500.000 t. Aziende Less than 500,000 tonnes Firms	11	4,8
Da 500.000 a 3.000.000 di t. Aziende From 500,000 to 3,000,000 tonnes Firms	8	27,1
Oltre 3.000.000 di t. Aziende Over 3,000,000 tonnes Firms	4	68,1
Totale / Total	23	100,0

Energy consumption

■ The cost of procurement of energy production factors has always taken on great importance in the cement industry, considering its high consumption (the cement sector covers 3.5% of Italian industry's electrical power consumption and about 6.5% of its end consumption of thermal energy) and the relative weight that this cost item has on the profit and loss statement of the cement producing companies.

After the conversion of their combustion systems had been brought to an end during the first years of the eighties under the pressure of the oil crisis the cement companies adopted a policy of strong diversification of their energy sources in order to increase their independence and thus their contracting power vis-à-vis their suppliers.

Thermal energy needs, heat being necessary for the endothermal process that brings about the baking of the raw materials (temperatures exceeding 1400°C), were met in 2002 prevalently by solid fuels, whose consumption was 2.8 million tons (down 3.4%), followed by heavy fuel oil, with a consumption of 117 thousand tons (down 10.5%) and natural gas, a little more than 39.6 million cubic meters (down 21.3%) being used.

The dip in "conventional" fuel consumption was in part compensated by the sensible increase in recovered secondary fuels (103 thousand tons, with an increase exceeding 37% over 2001), whose use in cement kilns provides high levels of environmental protection.

The use of these replacement fuels, even if increasing, is in absolute terms still marginal compared with other European realities. Elsewhere, governments have for some time granted incentives to the use of these fuels, considering their evident advantages of an environmental nature and the economic savings tied to the lower disposing costs for the public administrations.

On parametrizing fuels on the basis of their heating power, what emerges is an incidence of solid fuels on total consumption of 91.1%, a slight dip over 2001, seen too for fuel oil, whose incidence in 2002 dropped to 4.6%, and natural gas, with an incidence of 1.3% as against the 1.6% of the previous year. As mentioned, the percentage increase in the use of secondary fuels was considerable, it rising in 2002 to 3% from the 2.1% of the previous year.

As the result of the emergency that arose over the Mad Cow syndrome and the problem of the risk-free destruction of the slaughter wastes, the cement companies adjusted their plants to permit the co-incineration of animal flours.

CONSUMI ENERGETICI NEL 2001 / ENERGY CONSUMPTIONS IN 2002			
			Variazioni % / change % 2002/2001
Energia elettrica / Electrical power	kWh.	4.774.197.370	1,7
Metano / Natural gas	mc. / m ³	39.613.599	- 21,3
Carbone / Coal	t. / tonnes	2.808.334	- 3,4
Olio combustibile denso Heavy fuel oil	t. / tonnes	117.060	- 10,5
Combustibili non convenzionali Non-conventional fuels	t. / tonnes	102.671	37,4

In 2002 the amounts of animal flours destroyed were as yet quite small, owing to repeated difficulties encountered with some local public administrations as well as to the scarcity of flours available on the market.

Average unit consumption of thermal energy for the production of a ton of cement dropped to 62 kg (of equivalent heavy fuel oil) as against the 66 kg of 2001, owing for one thing to the larger proportion of cement obtained from the crushing of imported clinker and, therefore, without resort had to the baking phase in Italy.

Electrical power consumption amounted in 2002 to more than 4,774 GWh, with a 1.7% increase, considerably less than the production increase, which was instead 4.6%; this in demonstration of a greater energy efficiency consequent on the enormous investments made in process technology innovation. These results can be further appreciated if account is taken of the fact that during 2002 production of high-strength cements, which need a finer crushing, grew by more than 11%. The mean unit consumption of electrical power dropped in fact to 115 KWh per ton of cement produced from the 118 of 2001.

With regard to the solid fuels market, in 2002 as well Italian cement plants resorted to products (petroleum coke) imported mostly from the United States and Venezuela, and to coal from South Africa and CSI.

As for prices, after a first half where oil prices were substantially stable at 25 dollars per barrel, the growing international

ANDAMENTO DEI CONSUMI DI COMBUSTIBILI / BEHAVIOUR OF FUEL CONSUMPTIONS				
	%			
	Carbone / <i>Coal</i>	O.c.d. / <i>HFO</i>	Metano / <i>Natural gas</i>	Altri / <i>Other</i>
1993	86,2	7,9	4,9	1,0
1994	84,8	6,9	4,2	4,1
1995	86,1	7,9	3,6	2,4
1996	86,8	7,3	3,3	2,6
1997	84,9	9,7	3,3	2,1
1998	84,8	10,4	4,0	0,8
1999	84,2	10,5	3,5	1,8
2000	90,9	5,1	1,8	2,2
2001	91,4	4,9	1,6	2,1
2002	91,1	4,6	1,3	3,0

tension that was a feature of the second half of 2002 and, in part, the reduction of supplies due to strikes in the oil sector in Venezuela, generated strong tension on crude prices: in December 2002, they had risen above 27 dollars per barrel, with an increase of a good 47% over the same month in 2001.

In 2002 the price of electrical power for industrial uses in Italy was higher by 31% than the average of the European Union countries.

To this is to be added the lack of the positive effect of the liberalization of the natural gas market, in fact started off only in 2003, as well as the slow pickup in the euro-dollar exchange rate.

For 2003 it is hoped that, finally, the liberalization of the electrical-power and natural gas markets will produce its effects on prices, in such fashion as to at least partially make for the gap relative to other European countries that penalizes us. Especially in view of a cement market that will become more and more characterized by the internationalization of demand and supply.

The truck transport of cement

■ In last year's report we indicated 2002 as the year for a possible structural change in truck transport of freight for customers as the result of a protocol signed by the truck transport associations and the government to bring about a more liberalized market. But the situation has displayed no development except for the signing in December of another agreement between the two parties.

At the time this report goes to press a bill has been readied by which the government will request six months of time to modify, using a simpler parliamentary procedure, the reform of the rate system. Key elements of the new regulation will be the junking of the system of obligatory price-bracket rates and the passage to free bargaining over prices for truck freight transport services.

Within this rules picture, which has in fact remained unchanged during 2002, the transport of cement on rubber remained almost exclusive, this being better adapted to the construction sector's need for flexibility and frequency of deliveries.

In 2002 the cement sector increased its percentage of truck-hauled freight from 3.5% to 3.7%.

And during the year forming the subject of this report too the trend to an increase in consignments of bulk cement over sacked cement was confirmed.

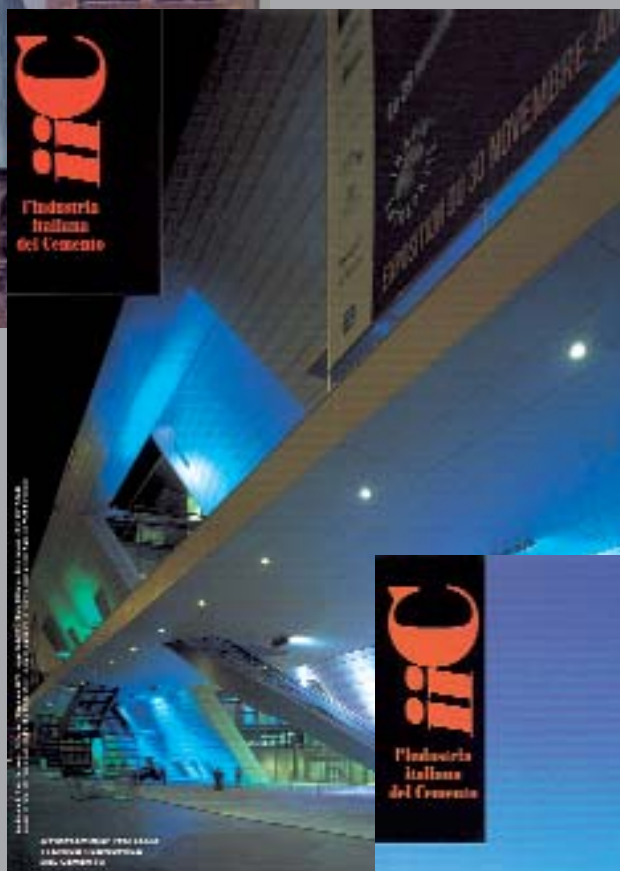
The 32.4 million tons of bulk cement shipped reached 78.3% of the total, marking a 4.7% increase. This volume is the highest level, both in amount and in percentage ever seen for the cement sector.

The almost nine million tons of sacked cement delivered, which represented 21.7% of total deliveries, represented a 1.9% increase..

The growth in the deliveries of "bulk" is in line with the change that has come about in the intermediate destinations of cement, and over the past decade deliveries to concrete plants and also those destined to export have constantly increased.

RIPARTIZIONE CONSEGNE NEL 2002 DELIVERY DISTRIBUTION IN 2002		
	t. / tonnes	%
Insaccato / Sacked	8.996.691	21,7
Sfuso / Bulk	32.419.921	78,3

ANDAMENTO RIPARTIZIONE CONSEGNE BEHAVIOUR OF DELIVERY DISTRIBUTION												
												%
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
Insaccato / Sacked	33,5	33,1	31,2	29,4	27,6	25,6	26,2	23,2	22,2	21,7		
Sfuso / Bulk	66,5	66,9	68,8	70,6	72,4	74,4	73,8	76,8	77,8	78,3		



The environment

■ During the past year further developments have been seen in the definition of drafts of standards and regulations regarding environmental safeguarding and safety of direct concern to the cement sector, for which the Association offices furnished important and significant contributions.

– *Mad Cow syndrome emergency*

The end of 2001 saw the end of the emergency set off in Italy by Mad Cow syndrome, but certainly the same thing cannot be said for the problem of efficiently and safely destroying the slaughter waste, especially because of the scant knowledge displayed, at various levels, of the true dimension of the problem, whether as regards its economic consequences, whether as regards the public health.

January first was the date set for the end of the obligation to publicly stockpile low-risk animal flours, and flour producers were able to directly start up incineration or co-incineration of their product.

From the regulations standpoint, a series of ordinances extending the ordinance of March 30th 2001 had been issued one after the other, which permitted cement plants to co-incinerate the flours by resorting to the simplified procedure envisaged by legislative decree no. 22/1997. The issuance of decree-law no. 4 of January 25th 2002 made it possible to get past the emergency phase of Mad Cow syndrome by introducing criteria for the ordinary handling of the problem, among which the payment of a contribution to cover the processors' costs of gathering, treatment and incineration or co-incineration. The measure envisaged the following: the block of public stockpiling of the low-risk flours and the possibility for the processors to directly incinerate or co-incinerate the flours, whether of high, low or specific risk, that they had produced.

After the measure mentioned had been issued, AITEC activated contacts with *Assograssi*, the association representing the producers of animal flours of high, low or specific risk, with the aim in mind of defining an agreement to facilitate contacts and understandings between flour producers and cement companies for the elimination of animal flours. The meetings that

took place led to the definition of a framework agreement, signed on May 22nd 2002, which permitted mapping the production plants and the co-incineration plants, made provision for a standard fee for the co-incineration services and set a guarantee of a minimum life of the intercompany contract of 24 months from the date of signing. In the meanwhile the cement companies had to see to upgrading their plants, thus having to take on a significant economic commitment.

During that same period AITEC's relations with AGEA, regulated by an agreement signed with the Special Commissioner for the Mad Cow syndrome with regard to the elimination of the low-risk animal flours stockpiled at its expense (some 350,000 tons as of December 31st 2001), did not bring about any significant developments, despite the cement companies' continual urgings and requests.

Faced with a complex situation - especially owing to initiatives of open ostracism undertaken by a number of local administrations, in order to delay or block co-incineration in the cement plants, and with the behaviour of the Mad Cow syndrome Special Commissioner, who had shown himself on more than one occasion in difficulty in handling the situation that had come about with AGEA - AITEC had to engage in repeated encounters with the government and in parliamentary hearings, to bring out, e.g. by the presentation of especially made up Association reports, the difficulties that its member firms were continually being called on to deal with over the elimination of animal flours, an obligation laid on them for one thing by a law of the state.

In the meanwhile, despite AGEA's sudden and unmotivated decision to cancel the contract signed with AITEC, the Association went on urging to the Mad Cow syndrome Special Commissioner, through written communications, the cement companies' willingness to co-incinerate the publicly stockpiled low-risk flours, at the price already agreed upon. And this despite the repeated difficulties and impediments encountered in carrying on the co-incineration, most especially because of the difficulty experienced in gathering together the expected amounts of flour.

During the last few months of the year serious difficulties continued to exist in handling the co-incineration of animal flours, especially because of initiatives taken by local administrations and because of the discontinuity that had begun to be seen in the delivery of the flours by the processors.

On October 31st 2002 an end was placed to the public support of the gathering, conversion and destruction of the slaughter wastes, as provided by law no. 49/2001 to deal with the effects of the Mad Cow syndrome emergency, and the transition to the freeing of the market was sanctioned, which had as its *de facto* immediate consequence the practically total interruption of the supplies of animal flours to the cement plants owing to the sudden and unmotivated “disappearance” of the flours from the market.

After this, the Ministry for Agricultural and Forest Policies and the operators in the full meats industrial sequence (*Asso-grassi*, *CIA*, *Coldiretti*, *Confagricoltura*, *Federcarni*, etc.) signed an agreement on the formation of a board that would see to it that the withdrawal and the disposal of the wastes not undergo interruptions or slowdowns, and that the elimination costs not undergo unjustified increases. It was also understood that, should the application of the agreement encounter difficulties, the competent ministry would see to preparing a special decree following the lines of the agreement just reached.

In Europe in general, after a long period of preparation, Regulation 1774/2002/EC was published in October. This parliamentary and Council regulation, entitled *Health standards regarding byproducts of animal origin not destined to human consumption*, would govern, on its entry into force on May 1st 2003, the handling of slaughter wastes in European Union countries. In particular, as regards co-incineration, the measure makes reference to the provisions of directive 2000/76/EC on the incineration of wastes and, as regards Italy, to the provisions to be contained in the laws making this measure a part of the nation's laws.

– *Containment of CO₂ emissions*

On March 4th 2002 the European Union Council for the Environment ratified the Kyoto protocol, attached to the United Nations framework convention concerning climate changes and the joint fulfillment of the commitments concerning them. With the subsequent issuance of the European Union Council decision 2002/358/EC of April 25th 2002 “regarding the approval by the European Community of the Kyoto protocol” the European Union's adherence to the aforementioned protocol and consequently its member states' was formalized. By means of these instruments the European Union has thus engaged to

reduce, during the period 2008-2012, its emissions of greenhouse-effect gases by 8% under the levels reached in 1990.

The protocol can go into force only after having been ratified by at least fifty-five contracting parties to the Convention, and they must represent at least 55% of the CO₂ emissions produced by the industrialized countries in 1990. Italy in its turn ratified the protocol by law no. 120 of June 1st 2002, thus formally taking on the commitment to contain, during the period 2008-2012, its CO₂ emissions within 93.5% of those produced in 1990 (a drop of 6.5%). With the ratifying law mentioned, the Environment Ministry undertook to present a proposal for the revision of CIPE (Interministerial Committee for Economic Planning) resolution no. 137/99, for which it encharged a ministerial committee. The measure must contain the strategic framework of the policies and measures to be adopted in Italy in order to achieve the CO₂ emissions reduction objectives. The ministry offices thus worked up the new CIPE resolution, which was then issued in draft form during the month of November.

During the work, AITEC had contacts with the experts of the University of Bologna's *Alma Mater* foundation, commissioned to make up the "national scenarios" on whose basis the ministry would then draft the already-mentioned new resolution, pointing out to them in particular the considerable CO₂ reduction that could be achieved by the broadcast use of combustible wastes in cement plants. During the year a series of meetings were held that the Environment Ministry had wished with *Confindustria* and other parties involved for an active exchange of information and to deal with the principal problems and critical points of the sectors concerned. During these meetings the Director General of the Environment ministry, Corrado Clini, more than once confirmed the ministry's thinking that in order to achieve the national CO₂ emissions-reduction objective it would be necessary to sign negotiated agreements with the industrial sectors concerned, through resort had to the flexible mechanisms envisaged by the Kyoto protocol (ET, CDM, JI), the intention being to minimize the costs at the charge of industry.

In light of the initiatives underway now, whether nationally whether Community-wide, AITEC has started off a series of in-depth investigations necessary to defining the cement sector's position on the subject, the first with a view to making an estimate of cement plant emissions for the years 1990 and 2000 on the basis of the overall data the Association has available.

Within this purview the Association's Ecology group has worked at developing a voluntary negotiated agreement scheme, to be signed with the competent public administrations, as well as a method to be used to distribute the CO₂ reduction volumes demanded of the cement sector over the companies that sign the agreement.

The aim of the initiative was to define a framework of commitments suited to guaranteeing that the member companies would arrive, within a context of economic and production sustainability, at the CO₂ emissions reduction levels that will be imposed by the government. AITEC furthermore sent to its member firms a computer program entitled *The cement CO₂ Protocol*, developed by the World Business Council for Sustainable Development – Cement Working Group for keeping the books on CO₂ emissions over the period 1990-2000.

After the issuance in November of the Interministerial Committee for Economic Planning's (CIPE) draft resolution for updating the earlier resolution no. 137/89 mentioned, *Confindustria* developed a commentary document, addressed to the ministry's offices, gathering together the comments and opinions of the sectors of industry most directly concerned, among which those comments expressed by AITEC as representing the cement sector.

In Europe in general the European parliament's work has gone ahead on the proposal-for-directive on exchanges of emission rights (Emissions Trading). The first reading of the document was concluded with the vote in Parliament in plenary session and the Council of Environment Ministers afterward adopted a new draft of the document, entitled "Common Position", on which the second parliamentary reading was then started off. While the proposal-for-directive was pursuing its legislative itinerary AITEC sent the Ministry offices a document on the cement sector's position, pointing out the principal topics of interest, and lining up with the position already expressed by Cembureau.

– *The presence of chromium VI in cements*

During this year the Brussels Commission technical group's work went ahead on upgrading directive 76/769/EC on prohibitions on the use of dangerous chemicals, its aim to develop a document that would limit the marketing and use of certain

substances, among which cements containing soluble chromium VI in concentrations exceeding 2 ppm. Cembureau, supported by AITEC, had a great deal to say on this to the competent government departments in order to obtain the desired verification of the statistical data existing in the various European countries that would enable an evaluation of the true dimensions of the problem. The Commission offices, in light of the absence of dispute from the technical representatives of most of the member countries, anyway deemed it best to go ahead with drafting a proposal for Parliament and Council directive bearing the restriction on the marketing and use of nonyl phenol, nonylphenol tosylate and cement (26th modification of Council directive 76/769/EC). The proposal, as regards what is of concern here, calls for the prohibition on the marketing and use of cement and of cement preparations containing soluble Chromium VI in weight concentrations exceeding 2 ppm and employed in activities where the risk of skin contact exists; (it also) imposes the obligation, for cements in whose production ferrous sulphate is used as a reducing agent, to indicate on the package the date of its packing and the period of stockpiling during which the soluble Chromium VI content remains lower than the threshold mentioned of 2 ppm.

On the basis of the in-depth investigations made by the member firms' engineering departments a memorandum was generated, in line with the position taken by Cembureau on the subject, which was used on numerous occasions to set forth to the representatives of the ministries concerned (Community Policies, Health, Production Activities, Environment) the perplexities that the Community initiative has provoked and the technical and organizational constraints that this measure would give rise to.

Among the numerous initiatives undertaken to block the action of the European Parliament, to be noted is a Cembureau memorandum entitled *The reduction of chromate eczema in the construction industry*, which sets forth and motives the European cement industry's critical position on the Brussels Commission proposal for directive. The document mentioned was forwarded, among other things, also to the Italian government's representative in Brussels, in order that he sustain the demands of the Italian cement industry.

– *Application of legislative decree 372/99 "IPPC"*

With the issuance of Ministerial Decree of November 21st bearing the title *Data, format and communication procedures as*

per art. 10, paragraph 1, of legislative decree of August 4th 1999, no. 372, published in February 2002, INES, the national register of emissions of plants falling within the area of application of the IPPC directive was officially activated. This measure put into force the provisions of art.10 of legislative decree 372/99 regarding the yearly transmission of characteristic data on emissions into the air, water and soil, this transmission to be effected by those running the plants listed in Attachment 1 to that same decree, among which are plants used to produce cement clinker.

For the year 2002 only (with reference to 2001 data) – just as laid down by ministerial decree of April 26th 2002, entitled *Modifications to ministerial decree of November 23rd 2001 regarding data, formats and communication procedures as per art. 10 of legislative decree 372/99* – the cement-producing firms communicated only the data identifying the production units.

For 2003 the emissions data for the year 2002 will instead

Technical regulation

– Certification

As of April 1st 2002, as the result of the harmonization of Attachment ZA to standard EN 197-1:2000, the provisions as per standards EN 197/1 *Cement. Composition, specifications and criteria of conformity. Common cements* and EN 197/2 *Cement. Evaluation of conformity* will form the reference standards prevailing over the earlier-existing national standards regarding requisites and procedures for monitoring common cements. Therefore the free circulation of the products in the Home Market will be assured by the European Community marking, which may be placed by the producer on his cements in conformity with the standards mentioned and furnished with a European Community conformity certification issued by a body notified by the Brussels Commission.

In January, by a special procedure, the Ministry for Production Activities renewed, by an ministerial decree to the purpose, the provisional approval to ICITE to certify common cements.

At the same time AITEC started off contacts with the competent ministerial offices in order that there be adopted, in time, the measures necessary to defining the relationship between the cogent existing national standard and the approved European standard harmonized as regards common cements, through the issuance of a decree that would embody the European standard mentioned and recognize to the producer the power to place the European Community marking on cements furnished with a conformity certificate, thus in fact replacing the existing conformity mark.

In the absence of this measure, the companies find themselves having a dual standard reference, AITEC 314/99 and the harmonized standard EN 197/1.

Promotional and publicizing activities

– *Second-level Master's degree in Innovation in the design, rehabilitation and inspection of reinforced-concrete structures*

Over the past few years there has been a progressive decline in Italy in the University chairs devoted to teaching the techniques of design and of construction of reinforced-concrete structures, whether ordinary or prestressed and in the carrying on of research and experiment in this subject.

In light of this and as the result of a comment pointing it out by the director of the School of Specialization in reinforced-concrete constructions, Dr. Fratelli Pesenti of Milan Polytechnical, AITEC activated the first contacts with Prof. Camillo Nuti, professor of construction Technique at the Third University of Rome and expert in aseismic structures, to look into the possibility of starting up a pilot initiative. Right from the first contacts there emerged the professor's interest and willingness to work together on the formation and management of a postgraduate Master's degree on the topic *Innovation in the design, rehabilitation and inspection of reinforced-concrete structures*, to be started up on the basis of an agreement between the third University of Rome and AITEC.

The initiative then took concrete form in the objective of revitalizing nationally, and in particular in a very large university basin such as Rome's, the high-level training of future professional people in the subject of the design, construction and inspection of reinforced-concrete works.

Taking part in the initiative were the Faculty of Architecture, the Faculty of Engineering and the department of Civil Engineering Science of the Third University of Rome. The master's would be open to graduates in engineering and architecture for a maximum number of thirty students for 1500 hours of learning, over 42 months. As for the place where it would be headquartered, the Faculty of architecture of the third University was chosen.

Teaching will begin during February 2003.

– *Master's in Highway Safety*

During the first months of this year AITEC signed a convention with the University of Florence, department of Civil Engineering, to establish a fellowship for a Master's in "Highway Safety".

The initiative, springing from cooperation between the department mentioned and the *La Sapienza* campus of the University of Rome, aims at training specialists in the design and running of safe highways.

– *A new publication*

In March a bulletin was compiled entitled *Guidelines on structural high-strength concrete* ($75 \text{ N/mm}^2 < R_{ck} < 115 \text{ N/mm}^2$) made up at the initiative of the First Section of the Higher Council of Public Works. The document was disseminated by the Association magazine *L'Industria Italiana del Cemento* and is a followup to the initiative already launched in May 1997 with the publication of the document *Guidelines on structural concrete*; on that occasion too it was disseminated as an attachment to the magazine.

– *AITEC Website*

During the past few months of this year the Association website was developed, **aitecweb.com**, with the technical support of one of the leading Italian firms in the supply of website solutions.

The site, which will open during the first few months of 2003, will be a tool for rapid and efficient interaction between AITEC and its member firms, as well as a channel for promoting and popularizing cement matters in the outside world.

Through this site the member firms can, following an “intranet” logic, gain access, remotely and in real time, to the Association’s information assets (circulars, documentation, studies and analyses, databases etc.) with a view to creating greater timeliness and flexibility in the relations between the Association and its members.

Furthermore, the site will be an important means of communication and of providing technical, economic and promotional information to those businessmen, professional people and universities most interested in cement.

In implementing the site special attention was given to the following factors:

- confidentiality, software solutions being identified able to handle information flows according to the highest standards of information security;
- simplicity of use, special attention being paid to the graphics

and to the navigation tree, so as to facilitate the user's orientation;

- interactiveness, by maximizing the active role of the user, who, through the site, can communicate directly with the AITEC staff, subscribe to the Association magazine, consult the library, request publications and make personalized researches.

– *Ulysses project*

In 2002 AITEC pursued the important interassociation promotional action in support of reinforced and prestressed concrete and of cement articles called *Progetto Ulisse*, started off in 2001 together with *Assobeton* and *Atecap*.

The Ulysses Project has as its aim to promote, sustain and coordinate the technical and educational initiatives, studies, researches and applications offered by the three associations regarding cement materials and products, disseminating knowledge of their characteristics and uses, of their technological potentials and of their fields of application.

The Ulysses Project is run by a coordinating committee and by a technical executive board made up of representatives of the three associations, which evaluate and approve the initiatives and monitor their carrying out. Its expected life is three years, after which the suitability of any continuation of the project will be evaluated, along with procedures and schedules.

After the top-priority topics dealt with and started off in 2001, such as those concerning *Self-locking blocks, r.c. structures in seismic areas, Fire design of r.c. structures, Self-compacting concrete, Lightweight high-strength high-performance concretes, Training courses on long-lasting quality concretes, and Ecological fibercement*, another four new projects -were started up:

- The reinforced concrete and prestressed concrete commission
- Safety barriers
- University courses
- Concrete pipes and access wells

– *General information*

Requests for technical information coming from workers in the construction sector are always numerous, and the Milan and

Rome offices have seen to furnishing the necessary information and technical publications. During the year, a constantly increasing number of requests coming from universities, from both instructors and students, could be seen (these accounting for about 40% of the total number). There was also a further increase over the preceding year in the requests coming from designers and technical people in the sector. Among the subjects of greatest interest to these latter are the European directives involving the building construction area, and topics concerning innovatory or special cement products.

Besides the informational material published by AITEC and made up of the special editions, the series of monographs and the manuals, the Association magazine *L'Industria Italiana del Cemento* has formed sound support for more in-depth researches on the most recent and innovatory constructions.

– *Teaching information*

Within the purview of AITEC's more general informational activity, the teaching sector has great prominence, and in particular the informational relationship between AITEC and the pre-university is constant and lively. This is an area, embracing all the second-level technical institutes, that has always been tended to by the Association. The material distributed consists of the "Teaching Pamphlets" and of the *Practical Manual for Building Construction*, which are furnished to all the institutes as a basic outfitting at the disposal of the instructors, and are kept constantly updated, this being determined too by the needs of the institutes themselves.

Besides the second-level institutes there are the building-construction schools, particularly active in northern Italy, which make considerable, and attentive, use of the *Practical Manual of Building Construction*.

Regarding relations with universities, they have been intensified with a number of universities that use AITEC teaching material in their courses on the technology and chemistry of construction materials and the design of r.c. structures, especially for the first and second years of the course.

– *Exposition activities*

As every year, AITEC's presence was assured at the *International Salon of Building Construction Industrialization – SAIE*, which

was held in Bologna over October 16th through 20th.

SAIE, the most prominent Italian fair in the construction field, is extremely representative of this important sector of the nation's economy, owing to its capacity to reflect the great changes that have come about, and that are going on now, in construction culture.

Within this context AITEC, as usual, confirmed its presence both in the *Lime, cement, gypsum, mortars and similar* sector, and in the Technical Press area, with a booth for the Association masthead *L'Industria Italiana del Cemento*. The magazine was made very widely known by the distribution of four thousand sample copies and the offer of special subscription conditions.

AITEC's popularization activities were carried on both through the distribution of five thousand copies of the *Practical Manual for Building Construction* and of the *Teaching Pamphlets*, of two thousand copies of publications on specific subjects regarding design and structural aspects, construction technologies, highway concrete pavements, and economic data on the cement sector, and through direct contact and conversations aimed at meeting specific technical requests and at professional updating, held with the public of visitors made up of students of various types, instructors, professional people, and people working in the cement field generally.

As part of the event two conferences were held, as expressions of the wider Ulysses Project. The first of the two, *Guidelines for concrete of the Higher Council of Public Works*, was held with the coordination of prof. E.F. Radogna, AICAP president. After the introductory report delivered by M. Mauro, chairman of the first section of the Higher Council of Public Works, the guidelines on structural concretes were explained, along with those on high-strength concretes and on pre-mixed concretes, by prof. R. Turriziani, prof. L. Sanpaolesi and prof. M. Collepardi respectively. The second of the two conferences – *The New Streets Project: an innovatory concept for paving urban streets* – explained the recent development of the use of concrete blocks for street pavements.

Though its Milan and Rome offices AITEC was further present at the main conferences and congresses devoted to the applications of cement materials and it also followed the voluntary standards activity of interest to the cement sector carried on by the commissions and working groups of *Unicemento*, a federated UNI body, of UNI and of CTI (Italian thermotechnical board).

ANNEXED STATISTICAL TABLES

Cement in Italy

- CEMENT INDUSTRY PRODUCTION FROM 1978 THROUGH 2002
- CEMENT PRODUCTION, STOCK AND CONSUMPTION BY GEOGRAPHIC DISTRICT FROM 1988 THROUGH 2002
- MONTHLY CEMENT PRODUCTION FROM 1993 THROUGH 2002
- MONTHLY CEMENT PRODUCTION BY GEOGRAPHIC DISTRICT IN 2001 AND 2002

Cement in the world

- WORLD CEMENT PRODUCTION FROM 1998 THROUGH 2002
 - MAJOR WORLD CEMENT PRODUCERS FROM 1998 THROUGH 2002
-

ATTIVITÀ DELL'INDUSTRIA CEMENTIERA DAL 1978 AL 2002

CEMENT INDUSTRY PRODUCTION FROM 1978 THROUGH 2002

52

	Produzione <i>Production</i>	Consegne interne <i>Home deliveries</i>	Esportazioni (*) <i>Exports (*)</i>	Importazioni (*) <i>Imports (*)</i>	Investimenti (**) <i>Investments (**)</i>
	000 t. / 000 tonnes				milioni di euro correnti <i>millions of current euro</i>
1978	38.326	36.692	1.585	68	45
1979	39.283	37.833	1.695	73	54
1980	41.870	41.134	822	81	94
1981	42.996	42.462	623	201	126
1982	41.524	41.077	552	173	127
1983	40.121	39.493	589	236	n.d. / n.a.
1984	38.851	38.351	522	252	129
1985	37.266	36.960	384	381	139
1986	35.909	35.857	275	319	129
1987	37.008	36.728	375	765	129
1988	38.747	38.441	358	1.889	137
1989	40.374	40.040	351	2.347	155
1990	40.751	40.438	338	2.906	155
1991	40.717	40.541	273	3.042	181
1992	41.347	41.200	255	3.637	181
1993	34.705	34.623	255	3.182	155
1994	33.084	32.443	678	2.454	155
1995	34.019	32.821	1.330	1.841	129
1996	33.832	32.346	1.651	1.304	119
1997	34.378	32.384	2.136	1.533	129
1998	36.076	33.601	2.731	1.185	145
1999	37.299	34.690	2.572	1.677	181
2000	39.020	36.544	2.561	2.340	196
2001	39.804	37.250	2.577	3.220	210
2002	41.417	39.168	2.357	3.878	330

(*) Cemento e clinker / *Cement and clinker*(**) Dati ISTAT fino al 1982; stimati dal 1984 / *ISTAT data through 1982; estimated from 1984*

PRODUZIONE, GIACENZE
E CONSUMI DI CEMENTO
PER CIRCOSCRIZIONI GEOGRAFICHE
DAL 1988 AL 2002

CEMENT PRODUCTION,
STOCKS AND CONSUMPTION
BY GEOGRAPHIC DISTRICT
FROM 1988 THROUGH 2002

PRODUZIONE DI CEMENTO PER AREE GEOGRAFICHE / CEMENT PRODUCTION BY GEOGRAPHIC DISTRICT					
	Settentrione / North	Centro / Centre	Meridione / South	Isole / Islands	Totale / Total
	000 t. / 000 tonnes				
1988	16.634	7.813	8.752	5.548	38.747
1989	17.577	7.882	9.085	5.830	40.374
1990	17.915	8.144	8.756	5.936	40.751
1991	18.163	8.167	8.480	5.907	40.717
1992	18.790	8.335	8.416	5.806	41.347
1993	16.187	7.291	6.901	4.326	34.705
1994	15.281	6.913	7.260	3.630	33.084
1995	16.572	6.637	7.266	3.544	34.019
1996	16.709	6.549	6.835	3.739	33.832
1997	16.347	6.833	7.400	3.798	34.378
1998	16.527	7.520	7.983	4.046	36.076
1999	17.085	7.730	8.520	3.964	37.299
2000	18.311	7.653	8.834	4.222	39.020
2001	18.973	7.648	8.640	4.543	39.804
2002	20.473	7.809	8.753	4.382	41.417

GIACENZE / STOCKS		
Cemento / Cement	Clinker	
t. / tonnes	t. / tonnes	
1988	1.047.158	1.915.621
1989	1.144.385	2.117.723
1990	1.223.177	2.393.620
1991	1.214.959	1.950.799
1992	1.194.610	2.369.664
1993	1.087.905	2.465.683
1994	1.160.109	2.193.567
1995	1.220.757	2.440.921
1996	1.183.224	2.521.632
1997	1.172.970	2.689.417
1998	1.063.428	2.081.337
1999	1.192.566	2.202.105
2000	1.201.977	2.005.533
2001	1.279.092	2.317.193
2002	1.254.109	2.040.430

CONSUMI APPARENTI PER ABITANTE / APPARENT CONSUMPTION PER INHABITANT					
Totale Total	Settentrione North	Centro Centre	Meridione South	Isole Islands	Media Average
t. / tonnes	Kg				
40.290.248	652	713	618	815	701
42.239.938	689	718	639	855	734
43.081.136	702	741	613	868	747
43.382.650	711	741	591	861	751
44.520.161	735	756	586	845	770
37.723.309	637	666	492	649	661
34.868.291	601	631	516	541	610
34.638.927	652	604	515	525	605
33.622.812	656	595	483	553	586
33.767.446	640	620	522	561	587
34.685.376	646	681	564	598	603
36.147.317	666	698	603	588	628
38.337.636	711	689	626	627	664
39.468.813	742	722	635	712	703
41.268.850	801	716	629	664	724 (*)

(*) Calcolati sulla popolazione del giugno 2002 / Computed using june 2002 population data

PRODUZIONE MENSILE
DI CEMENTO
DAL 1993 AL 2002

MONTHLY CEMENT
PRODUCTION
FROM 1993 THROUGH 2002

54

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	t. / tonnes									
Gennaio / January	2.380.680	2.116.806	2.014.140	2.173.553	1.833.597	2.189.084	2.293.416	2.353.532	2.453.949	2.485.318
Febbraio / February	2.940.175	2.228.530	2.623.646	2.321.287	2.631.647	2.667.378	2.472.384	3.093.299	2.951.315	3.158.838
Marzo / March	3.121.967	3.189.381	2.928.933	2.982.127	3.326.855	3.223.724	3.303.655	3.675.380	3.595.884	3.887.004
Aprile / April	3.183.864	2.804.729	2.796.000	2.825.394	2.942.148	3.049.077	3.223.971	3.258.450	3.320.671	3.407.565
Maggio / May	3.388.091	3.097.084	3.107.328	3.257.841	3.283.344	3.428.915	3.602.843	3.804.682	3.776.109	3.992.488
Giugno / June	3.353.267	3.081.080	3.202.752	3.442.728	3.189.752	3.439.934	3.553.637	3.702.130	3.884.029	3.843.681
Luglio / July	3.430.846	3.201.066	3.408.912	3.328.972	3.391.120	3.507.581	3.795.676	3.803.920	3.851.438	3.994.457
Agosto / August	2.070.133	2.047.450	2.347.036	2.405.311	2.341.866	2.405.306	2.471.169	2.527.502	2.524.345	2.658.833
Settembre / September	2.997.966	2.852.812	3.001.560	2.982.375	3.218.092	3.317.507	3.371.174	3.496.719	3.590.840	3.613.587
Ottobre / October	3.032.138	3.119.477	3.361.629	3.022.956	3.254.471	3.256.959	3.578.940	3.447.784	3.921.608	3.917.220
Novembre / November	2.624.835	2.819.808	3.008.304	2.919.801	2.871.018	3.187.318	3.028.064	3.051.364	3.377.913	3.646.509
Dicembre / December	2.180.694	2.526.206	2.219.024	2.169.841	2.094.154	2.402.955	2.604.015	2.805.387	2.555.967	2.811.112
Totale / Total	34.704.656	33.084.429	34.019.264	33.832.186	34.378.064	36.075.738	37.298.944	39.020.149	39.804.068	41.416.612

PRODUZIONE DI CEMENTO PER MESI E
PER CIRCOSCRIZIONI GEOGRAFICHE
NEL 2001 E NEL 2002

MONTHLY CEMENT PRODUCTION
BY GEOGRAPHIC DISTRICT
IN 2001 AND 2002

	Italia Settentrionale <i>Northern Italy</i>		Italia Centrale <i>Central Italy</i>		Italia Meridionale <i>Southern Italy</i>		Italia Insulare <i>Italian Islands</i>		Totale <i>Total</i>	
	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001
	t. / tonnes									
Gennaio / <i>January</i>	1.108.665	1.077.936	493.757	491.480	556.483	597.743	326.413	286.790	2.485.318	2.453.949
Febbraio / <i>February</i>	1.508.676	1.448.004	606.876	568.872	677.762	618.113	365.524	316.326	3.158.838	2.951.315
Marzo / <i>March</i>	1.955.430	1.721.021	720.972	699.247	798.282	772.457	412.320	403.159	3.887.004	3.595.884
Aprile / <i>April</i>	1.700.764	1.617.941	632.599	579.076	710.458	724.491	363.744	399.163	3.407.565	3.320.671
Maggio / <i>May</i>	1.942.380	1.824.444	750.295	710.721	867.455	790.448	432.358	450.496	3.992.488	3.776.109
Giugno / <i>June</i>	1.937.824	1.870.582	738.093	769.426	800.834	807.819	366.930	436.202	3.843.681	3.884.029
Luglio / <i>July</i>	2.043.844	1.867.518	739.645	746.497	804.551	803.247	406.417	434.176	3.994.457	3.851.438
Agosto / <i>August</i>	1.237.683	1.145.182	504.311	475.071	627.487	617.347	289.352	286.745	2.658.833	2.524.345
Settembre / <i>September</i>	1.797.676	1.671.439	675.782	696.795	744.964	798.185	395.165	424.421	3.613.587	3.590.840
Ottobre / <i>October</i>	2.001.456	1.869.633	738.432	756.840	794.478	867.111	382.854	428.024	3.917.220	3.921.608
Novembre / <i>November</i>	1.818.062	1.626.160	691.304	639.126	776.546	727.555	360.597	385.072	3.646.509	3.377.913
Dicembre / <i>December</i>	1.420.213	1.233.031	516.566	514.443	593.630	515.982	280.703	292.511	2.811.112	2.555.967
Totale / <i>Total</i>	20.472.673	18.972.891	7.808.632	7.647.594	8.752.930	8.640.498	4.382.377	4.543.085	41.416.612	39.804.068

PRODUZIONE MONDIALE DI CEMENTO DAL 1998 AL 2002

WORLD CEMENT PRODUCTION FROM 1998 THROUGH 2002

56

	1998	1999	2000	2001	2002	2002 2001	2002 1998	1998	2002
	milioni di t. / million of tonnes					Variazioni % change %		Incidenza % Percentage	
Asia / Asia	938,1	993,7	1.018,2	1.066,7	1.100,2	3,1	17,3	61,1	63,0
di cui Cina / China	536,0	573,0	586,2	627,2	704,7	12,4	31,5	34,9	40,6
di cui Giappone / Japan	83,3	83,5	85,9	79,4	76,4	- 3,8	- 8,3	5,4	4,4
di cui India / India	85,6	97,8	101,8	104,6	118,5	13,3	38,4	5,6	6,8
Europa Or. / East Europe	78,9	82,5	86,9	87,6	89,0	1,6	12,8	5,1	5,1
di cui ex U.R.S.S. / ex USSR	40,7	43,6	47,5	50,6	53,4	5,5	31,2	2,6	3,1
Europa Occ. / West Europe	226,1	229,9	238,3	230,9	236,4	2,4	4,6	14,7	13,6
di cui Italia / Italy	36,1	37,3	39,0	39,8	41,4	4,0	14,7	2,3	2,4
America / America	216,8	217,5	218,1	218,9	221,0	1,0	1,9	14,1	12,7
di cui U.S.A. / U.S.A.	83,8	86,0	87,9	88,9	89,0	0,1	6,2	5,5	5,1
Africa / Africa	67,6	68,9	74,8	79,2	82,3	3,9	21,7	4,4	4,7
Oceania / Oceania	8,9	9,0	8,8	8,3	8,0	- 3,6	- 10,1	0,6	0,5
Totale / Total	1.536,4	1.601,5	1.645,1	1.691,6	1.736,9	2,7	13,0	100,0	100,0

Fonte: Cembureau ed elaborazioni AITEC. / Source: Cembureau and AITEC workups.

MAGGIORI PRODUTTORI DI CEMENTO NEL MONDO DAL 1998 AL 2002

MAJOR WORLD CEMENT PRODUCERS FROM 1998 THROUGH 2002

	1998	1999	2000	2001	2002	2002 2001	2002 1998
	milioni di t. / million of tonnes					Variazioni % change %	
Cina / China	536,0	573,0	586,2	627,2	704,7	12,8	31,5
India / India	85,6	97,8	101,8	104,6	118,5	21,4	38,4
USA / USA	83,8	86,0	87,9	88,9	89,0	1,3	6,2
Giappone / Japan	83,3	83,5	85,9	79,4	76,4	- 3,8	- 8,3
Corea del Sud / South Korea	49,3	49,5	52,2	53,7	56,4	5,0	14,4
Russia / Russian Federation	26,0	25,5	32,3	35,1	37,0	5,4	42,3
Spagna / Spain	33,1	35,8	38,2	40,5	42,4	4,7	28,1
Italia / Italy	36,1	37,3	39,0	39,8	41,4	4,0	14,7
Brasile / Brasil	40,0	40,3	39,6	38,9	38,0	- 2,3	- 5,0
Tailandia / Thailand	29,9	34,7	32,1	35,0	38,8	10,9	29,8
Indonesia / Indonesia	23,6	27,9	31,3	34,8	35,0	0,6	48,3
Turchia / Turkey	38,4	34,8	38,6	33,4	37,3	11,7	- 2,9
Germania / Germany	34,0	36,3	35,2	31,0	30,8	- 0,6	- 9,4
Messico / Mexico	29,8	31,3	33,9	30,0	33,2	10,7	11,4
Egitto / Egypt	21,0	22,3	23,6	25,2	26,0	3,2	23,8

Fonte: Cembureau ed elaborazioni AITEC. / Source: Cembureau and AITEC workups.



ASSOCIAZIONE
ITALIANA
TECNICO
ECONOMICA
DEL CEMENTO

Piazza G. Marconi, 25
00144 Roma
Tel. 0654210237
Fax 065915408
www.aitecweb.com
E-mail: aitec@aitecweb.com

Le immagini riportate riproducono le copertine dei fascicoli della Rivista "L'industria italiana del Cemento - *iiC*", pubblicati nel 2002, e rappresentano solo alcune delle opere illustrate della Rivista nel corso dell'anno:

- Il Complesso museale Yumebutai in Giappone - Gennaio 2002, n. 772
- Il viadotto stradale Mdeirej nei pressi di Beirut - Febbraio 2002, n. 773
- Il complesso edilizio, con annesso Casinò, a Sydney - Marzo 2002, n. 774
- La diga mobile nel porto di La Spezia - Aprile 2002, n. 775
- Il Palazzo della Cultura a Kuji, Giappone - Maggio 2002, n. 776
- La torre di controllo dell'aeroporto di Malaga - Giugno 2002, n. 777
- Il grattacielo della RWE AG a Essen, Germania - Luglio-Agosto 2002, n. 778
- Il Palazzo dei Congressi di Parigi - Settembre 2002, n. 779
- Il nuovo teatro Luxor a Rotterdam - Ottobre 2002, n. 780
- Il Centro Culturale di Alkmaar, Olanda - Novembre 2002, n. 781
- L'edificio Minnaert all'Università di Utrecht. Olanda - Dicembre 2002, n. 782

La dodicesima immagine riproduce la pagina promozionale del Master di II livello in "Innovazione nella progettazione, riabilitazione e controllo delle strutture di cemento armato". L'iniziativa è stata promossa nel corso del 2002 da AITEC con il concorso della Facoltà di Architettura, la Facoltà di Ingegneria ed il Dipartimento di Scienze dell'Ingegneria Civile della III Università di Roma.