

2003

# Annual Report

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ASSOCIAZIONE ITALIANA TECNICO ECONOMICA CEMENTO  
(ITALIAN TECHNICAL AND ECONOMIC CEMENT ASSOCIATION)

YEARLY MEMBERS' MEETING  
Rome - July 13th 2004

# Table of contents

<b>THE REFERENCE ECONOMIC PICTURE</b>	<b>5</b>
The nation's economy and the cement industry	5
Construction investments	7
<b>PRODUCTION AND THE MARKET</b>	<b>11</b>
Cement consumption and production in Europe	11
Cement consumption and production in Italy	14
National cement imports and exports	19
Distribution of production by technical characteristics and composition	24
Where cement goes	27
The cement sector's structure	29
Energy consumption	33
Cement transport by truck	35
<b>CODES, STANDARDS AND REGULATIONS</b>	<b>37</b>
The environment	37
Technical regulations and certification	45
<b>PROMOTIONAL AND INFORMATIONAL ACTIVITIES</b>	<b>47</b>
<b>ANNEXED STATISTICAL TABLES</b>	<b>51</b>



## The nation's economy and the cement industry

While in 2003 the American and Japanese economies accelerated their recovery, in the euro area the phase of cyclical weakness that had begun two years before continued. Growth for the whole of the area was 0.4% but was still smaller in Italy and France and negative in Germany; Spain's growth was good, closing the year with a 2.4% increase.

In 2003 Italy's gross national product rose by 0.3%, a slight dip relative to the 0.4% chalked up the year before.

During 2003 too, the stagnation of the first two quarters was followed by a pronounced increase in the third, but the economy halted again during the fourth quarter.

Just as in 2002, the value-added behaved well in construction and, to a lesser extent, in services (2.5% and 0.7% respectively). Industrial activity in the strict sense was in stagnation, after the contraction seen the year before, which put 2003 away down 0.1%. The various sectors composing industry in the strict sense exhibited non-uniform behaviours, which ran from up 6% for the production and distribution of electrical power, gas and hot water to down 6.4% for the manufacture of machines and mechanical equipment. The production and processing of non-metal-bearing minerals, including cement, grew by 0.7%.

On the demand side, the impulse to growth was provided by the domestic component, which compensated and more for the negative contribution made by net exports.

Favored by the increase in the number of people employed and by the slight increase in employee labor per person incomes, family consumption increased by 1.3% in real terms, although the persisting international crisis and the onset of a number of financial scandals led to relatively cautious spending behaviour.

Expenditures on durable goods - probably not susceptible of further postponement after two years of contraction - was the most dynamic component, increasing by 1.8%.

2003 saw too a 2.1% contraction in gross fixed investments over the preceding year. The dip was greater in the machinery, equipment and sundry products component, down 3.6%, probably abetted by the anticipation of company expenditure plans to the second half of 2002 (due to the lapsing of the Tremonti-bis law tax incentives). The prolonged weakness in investments, despite favorable financing conditions, sprang too from the continuing high unused production capacity and from the contraction in profit margins, especially for those companies exporting substantial amounts of their invoiced sales.



The only investment growth was seen in construction, the subject of further discussion in the next chapter of this report. Although it maintained a positive tone it slowed down compared to the preceding year, chalking up a 1.8% increase as against the earlier 3.3%, its principal support being drawn from residential building construction. Accumulation in this sector continued to grow, pushed by the low cost of mortgages despite the increase in real estate prices.

The erosion of market shares of Italian products, which had started up around midway through the last decade, went ahead in 2003 too. Exports of goods and services underwent a 3.9% dip at constant prices, more accentuated than that for 2002, bringing the dip for the last two years to more than 7%. Just as in 2002, the reduction in the amounts exported was greater than average in the sectors traditionally most exposed to competition from the emerging Asiatic economies and from Eastern Europe, which took advantage of the depreciation of their currencies, often anchored to the dollar.

The cement sector closed for the third year in a row with a negative foreign trade balance: 2.3 million tons in quantity and 112 million euros in value.

The labor market, despite a slowdown in rate of growth, displayed an increase in jobs for the eighth year in a row. At mid-year total employment had grown by 225,000 jobs over 2002, corresponding to an upward trend of 1%. In the construction sector expansion went ahead in 2003 as well, by 3.5% or 61,000 jobs, with a speedup in the rate of growth over the year before, which had closed with a 2.4% increase. Leading the expansion were employed workers, up 4.7% compared to the more limited increase for self-employed workers (up 1.5%). Benefiting from the favorable tone of labor demand were all geographic regions, even if not all uniformly in parallel with cement consumption. In particular the most sizeable progress was made by the entire area of the North, with the northwest up 6% and the northeast up 5.7%. The expansion dynamics were substantial too in the central regions, up 3.7% there, while in the South the number of those employed in building construction grew only by 0.4%. The mean inflation rate rose slightly to 2.7%, owing to the persistence of inflationary elements of a structural nature within the country, in the absence of external pressures.

## Construction investments

As we saw in the preceding chapter, in 2003 the improvement in the GNP (gross national product) in Italy over the preceding year was quite modest (up 0.3%), as was markedly weaker the GNP for the period from 1999 through 2003 (up 7.2%).

Within this context, the construction sector turned out to be one of the most dynamic, with a progress in investment relative to 2002, according to ISTAT (National Institute of Statistics) data, of 1.8%, in real terms, thus forming the most active item among the country's gross fixed investments. During the last five years the increase in construction industry investments was 17.6%.

The growth in construction activities in 2003 was the consequence of the good outcomes – even if of different intensities – achieved by all components: up 2.3% for residential building construction, up 0.5% for non-residential buildings and up 2.5% for public works.

The overall behaviour of investments in Italy's construction sector in 2003 was, according to ISTAT, 112 million 982 thousand euros, with an increase over 2002 of 5.2% in monetary terms and of 1.8% in real terms. This real rate of increase denotes some slowdown compared with the dynamics found during the four preceding years: up 3.3% in 2002, up 3.0% in 2001, up 5.9% in 2000 and up 2.6% in 1999. Last year we noted the anomaly in the investment data regarding 2002, which departed considerably from that measured by ANCE and which made it hard to explain the behaviour of cement consumption. With the publication of the data for 2003 investments for the preceding year were rectified, they going from up 0.3% to up 3.3% in real terms.

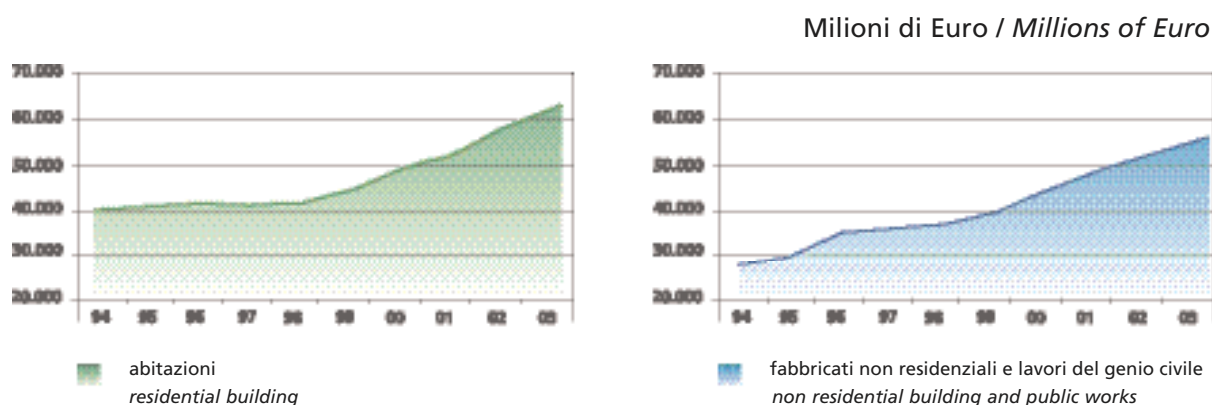
Going on now to review the individual branches of the construction industry, it can be seen how, according to ANCE, the residential building construction industry absorbed 61,590 million euros, up 5.3% over 2002 in value and up 2.3% in amount (up 4.4% in 2002 over 2001). Of this sum, 48.2% (29,717 million euros) went towards new dwellings (up 3.1% over 2002) and 51.8% (31,873 million euros) towards upgrading already existing dwellings (up 1.5% over 2002). In detail the behaviour of this activity turned out to be positive both in central Italy, up 6.0% (up 5.9% for new dwellings; up 6.1% for the upgradings), and in northern Italy, up 2.9% (up 3.5% for new dwellings; up 2.4% for upgradings), but negative in southern Italy (up 0.4% for new dwellings; down 7.0% for the upgradings). In particular found to be still expanding were both the appropriations for recovery operations (for one thing because of the extension of the tax facilitations involved), and, to a greater extent, the demand for new dwellings taken in ownership by families.

Non-residential buildings outfitted for business activities instead absorbed, still in 2003, investments to the tune of 31,412 million euros, with a 4.3% increase over 2002 in value and just 0.5% in amount (in 2002 up 2.5% over 2001). Progress was achieved by the Center and the South, as against a slight dip in the North. The modest development of this class of buildings was the direct consequence of the cooling down of the



national economy, as well as of the uncertainties in the deadlines for making use of the facilitations envisaged by the Tremonti-bis law. Compared with 2002, investments were down 6.0% in industry, agriculture and credit, and up in the services (by 4.0%), business (5.0%) and hotel (5.0%) sectors.

### INVESTIMENTI NELLE COSTRUZIONI DAL 1994 AL 2003 INVESTMENTS IN CONSTRUCTIONS FROM 1994 THROUGH 2003



The public works category, 2003's most dynamic, received 19,980 million euros, with increases over 2002 of 6.3% in monetary terms and of 2.5% in real terms (up 1.0% in 2002 over 2001). The trend toward development of civil engineering works appeared common, even if to differing extents, in the country's large divisions: up 2.3% in the North, up 7.0% in central Italy, and up 1.3% in the South. The increase seen in 2003 in production levels for the public works branch must be attributed to the rise in resources provided for infrastructures by the state budget over the declining years of the nineties and then transferred for the most part to decentralized spending bodies. In this regard we may observe growing expenditures on infrastructures by ANAS and by the state railway system.

Regarding 2004, ISTAT foresees a 1.2% development in the GNP. ANCE (national building contractors association), on the basis of its own studies, estimates, still for that year, investments of 117,579 million euros in the Italian construction sector, with a progress, over 2003, of 4.1% in value and of 1.5% in amount. This increase should be brought about by the increases for southern Italy (up 3.8%) and central Italy (up 2.3%), while the increase for northern Italy should stop at just 0.4%.

Considering then residential building construction, 63,853 million euros should be channeled into it, with an expansion over 2003 of 3.7% in monetary terms and of 1.2% in real terms. Non-residential building construction should attract 32,519 million euros in 2004, with a growth over 2003 of 3.5% in value and of 1.0% in amount.

Finally, Public works, with 21,197 million euros, should chalk up in 2004 a sensible increase compared with 2003: 6.1% in monetary terms and 3.5% in real, displaying a sensible growth most especially in the Italian south.

**ANDAMENTO DEGLI INVESTIMENTI NELLE COSTRUZIONI**  
**EVOLUTION OF CONSTRUCTION INVESTMENT**

	Milioni di euro correnti <i>Millions of current euro</i>			Variazioni % sull'anno precedente <i>% Change over previous year</i>			
	2001	2002	2003	2002		2003	
				(a)	(b)	(a)	(b)
<b>Costruzioni / <i>Constructions</i></b>	100.614	104.855	112.982	3,30	4,22	1,80	7,75
- abitazioni / <i>residential</i>	54.101	56.788	61.590	4,40	4,97	2,30	8,46
- fabbricati non residenziali e opere pubbliche <i>non residential buildings and public works</i>	46.513	48.067	51.932	1,90	3,34	1,30	6,92

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





## Cement production and consumption in Europe

The European construction industry, after six years of uptrend, reported in 2003 a slight dip in real terms, 0.2% according to the data distributed by *Euroconstruct*.

In detail in the individual sectors, 2003 featured a slight increase in residential construction (0.3%), a dip in non-residential (down 1.7%), and an increase in public works (1.3%).

On analyzing the figures for individual countries, it comes out that in 2003 too England and Spain were confirmed as the countries exhibiting the best behaviour (up 4.41% and up 4.0% respectively), flanked by some countries of Eastern Europe, among which Hungary and the Czech Republic, both exhibiting a 4.6% increase. England's growth was brought about by the excellent behaviour of residential building construction, while in Spain public works sustained the development.

Among the countries reporting a larger dip in construction investments are to be noted Portugal, with a 9.8% dip brought about by a collapse (down 18%) in residential construction and Germany, which, after the loss shown during the previous two years: down 4.7% in 2001 and down 5.9% in 2002, closed 2003 too with a dip (down 3.6%), while Norway, Switzerland and Denmark, after the good results of 2002, saw the trend reversed, its sign going negative in 2003.

The good result in public works, which prevailed throughout Europe in 2003, anyway exerted positive effects on the construction sector's behaviour as a whole, with cement consumption increased by 1.4% in the EU countries and by 1.9% if we consider all the *Cembureau* (European cement association) countries, reaching 196 million 509 thousand and 256 million 106 thousand tons respectively.

Among the principal European consumers, Spain took first place in 2003 as well, with consumption of 46 million 224 thousand tons (up 4.8%). Italy confirmed herself in second place with 43 million 511 thousand tons (up 5.4%), with Germany third, she seeing the continual drop in consumption that started in 2000 arrest under a slight recovery in 2003 of 0.7% and with consumption of 28 million 896 thousand tons. Turkey continued her growth, even if with increases below last year, closing 2003 at 28 million 106 thousand tons of cement consumed (up 4.8%). Consumption in France was almost stationary (20 million 678 thousand tons) while in the United Kingdom, after the sensible increases in consumption of 2002 attributable to investments in public works, 2003 reported a slow-down in the growth rate, stopping at 1.2%.

To be noted is the considerable drop in consumption in 2003 too in the Benelux countries, consumption dipping by 7.7%, aggravating 2002's not-positive trend (down 4.6%).



**PRODUZIONE DI CEMENTO IN EUROPA**  
**CEMENT PRODUCTION IN EUROPE**

000 t. / 000 tonnes

	Produzione / Production		Variazioni % / Change %
	2003	2002	2003 / 2002
Spagna / Spain	44.758	42.422	5,5
Italia / Italy	43.462	41.417	4,9
Dk, Irl, P, S, SF, GR / DK, Ireland, P, S, SF, GR	34.381	33.758	1,8
Germania / Germany	33.409	31.248	6,9
Francia / France	20.352	20.032	1,6
Regno Unito / UK	11.266	11.433	-1,5
Bel, NL, L / Belgium, NL, L	11.101	11.909	-6,8
Austria / Austria	3.941	3.967	-0,7
<b>Totale Paesi U.E. / Total U.E. countries</b>	<b>200.119</b>	<b>194.255</b>	<b>3,0</b>
Turchia / Turkey	38.136	37.267	2,3
N, CH, ICE / N, CH, ICE	5.470	5.617	-2,6
<b>Totale Paesi extra U.E. / Total non-U.E. countries</b>	<b>43.606</b>	<b>42.884</b>	<b>1,7</b>
<b>Totale Europa / Total for Europe</b>	<b>243.725</b>	<b>237.139</b>	<b>2,4</b>

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 1994 FINO AL 2003**  
**GEOGRAPHIC DISTRIBUTION OF EUROPEAN PRODUCTION FROM 1994 THROUGH 2003**

000 t. / 000 tonnes

	1994	1995(*)	1996	1997	1998	1999	2000	2001	2002	2003
Paesi UE	116.917	172.689	169.546	174.272	182.326	189.459	193.853	191.607	194.255	200.119
UE Countries										
di cui Italia	33.084	34.019	33.832	34.378	36.076	37.299	39.020	39.804	41.417	43.462
of which Italy										
Altri Paesi europei	43.352	40.349	41.136	42.801	43.801	40.420	44.495	39.315	42.884	43.606
Other European countries										
<b>Totale / Total</b>	<b>211.269</b>	<b>213.038</b>	<b>210.682</b>	<b>217.073</b>	<b>226.127</b>	<b>229.879</b>	<b>238.348</b>	<b>230.922</b>	<b>237.139</b>	<b>243.725</b>

(\*) 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.

Per-capita cement consumption in Europe amounted to an average of 514 kg, with departures that went from Luxembourg's peak of 1211 kg to Sweden's minimum of 181 kg.

Cement production in Europe in 2003 was 243 million 725 thousand tons, a 2.8% increase. In particular, in the Community countries production was 200 million 119 thousand tons, a three percent increase, amounting to 82% of total European production, while in the non-Community countries production was 43 million 606 thousand tons, a 1.7% increase.

At the level of the individual countries, Spain was confirmed in 2003 as the major European producer, with 44 million 758 thousand tons, chalking up a 5.5% increase or 2.3 million tons, followed by Italy, with 43 million 463 thousand tons, a 4.9% increase. Among the other countries to be noted is Germany's good production (up 6.9%); here production levels were considerably higher than home consumption, demonstrating a strong share of production going to export.

CONSUMI DI CEMENTO PRO-CAPITE IN EUROPA  
PER CAPITA CEMENT CONSUMPTIONS IN EUROPE

	2003	2002	Variazioni % / Change % 2003 / 2002
	kg		
Lussemburgo / Luxembourg	1.211	1.227	-1,3
Spagna / Spain	1.129	1.084	4,2
Grecia / Greece	1.003	1.005	-0,2
Portogallo / Portugal	886	1.075	-17,6
Irlanda / Ireland	880	798	10,3
Italia / Italy	763	724	5,4
Austria / Austria	564	570	-1,1
Svizzera / Switzerland	540	554	-2,5
Belgio / Belgium	535	536	-0,2
Islanda / Iceland	422	418	1,0
Turchia / Turkey	413	411	0,5
Germania / Germany	349	347	0,6
Francia / France	346	349	-0,9
Finlandia / Finland	306	301	1,7
Danimarca / Denmark	304	297	2,4
Paesi Bassi / Holland	295	344	-14,2
Norvegia / Norway	285	279	2,2
Regno Unito / Uk	220	218	0,9
Svezia / Sweden	181	177	2,3
Totale Europa / Total for Europe	514	510	0,8



## Cement production and consumption in Italy

The good behaviour of construction investments in Italy, with special emphasis on the public works sector, exerted, in 2003 as well, a very positive effect on the dynamics of the national cement market. This displayed consumption of 43 million 511 thousand tons with a 5.4% increase over 2002, in line with the change in domestic deliveries, whose increase was 5.5%, for a total of 41 million 309 thousand tons. (*il pensiero non è chiaro in questo capoverso ??*)

The first half of 2003 showed a speedup in the expansion of consumption with a growth of 7.2% as against the 3.6% shown in the second half.

Cement demand was not uniform over the nation's territory. Demand was strongly expanding in the North and Center, and substantial in the South too, but weak in the Islands.

Cement production in 2003 reached the record level of 43 million 461 thousand tons with a 4.9% increase, equivalent to an increase in quantity somewhat greater than two million tons. The imperfect coincidence between consumption and production is in part to be attributed - as we shall see in the chapter devoted to the subject - to a negative balance of trade with abroad as well as to a slight dip in stocks.

To be noted is that, from a territorial standpoint, unlike the last year production noticeably trended upward in every geographic area, with less exaggerated departures from the national average as against the figures for 2002, a year in which the North accounted for 90% of the increase in national production.

The North, with more than 21.2 million tons and a 3.8% increase accounted for 48.9% of the nation's production.

The best percentage behaviour was shown by the Center, which, after the 2.1% growth of 2002, with eight million 395 thousand tons, grew by a further 7.5%, reaching the highest level ever.

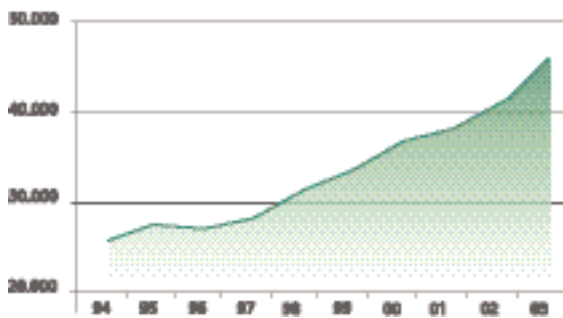
With a growth rate in line with that reported on the average for the whole national territory, the South reached nine million 173 thousand tons. In evaluating the area's increase in production, to be considered is the 15% drop, 164 thousand tons, in exports from southern ports.

After the dip in 2002, production on the island with four million 646 thousand tons displayed a 6% increase.

Analysis of production at the regional level brings out strong swings even within the same geographic area. In the North for example it went from up 7.4% in the Piedmont, carried along by the construction works for the 2006 Winter Olympics, to down 4.1% in the Friuli-Venezia Giulia; in central Italy, Umbria, up 12%, is contraposed to Tuscany, up 3.9%; the southern regions are

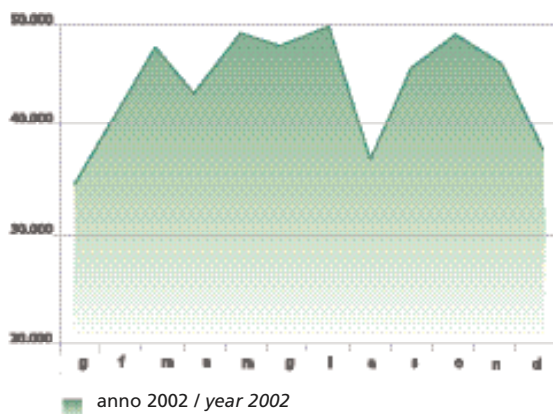
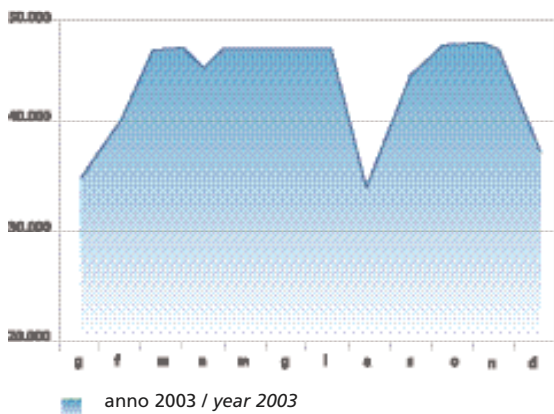
PRODUZIONE DI CEMENTO DAL 1994 AL 2003  
 CEMENT PRODUCTION FROM 1994 THROUGH 2003

Milioni di tonnellate / Millions of tonnes



PRODUZIONE MENSILE DI CEMENTO DAL 2002 AL 2003  
 MONTHLY CEMENT PRODUCTION FROM 2002 THROUGH 2003

Milioni di tonnellate / Millions of tonnes





PRODUZIONE DI CEMENTO 2003 E 2002 PER REGIONI E PER GRANDI AREE TERRITORIALI  
CEMENT PRODUCTION IN 2003 AND 2002 BY REGION AND BY LARGE TERRITORIAL AREAS

t. / tonnes

	2003	2002	Variazioni % / change % 2003 / 2002
Piemonte	3.996.262	3.723.050	7,3
Liguria	129.265	121.364	6,5
Lombardia	6.615.702	6.331.816	4,5
Veneto	4.993.604	4.912.238	1,7
Friuli-Venezia Giulia	1.347.939	1.405.649	-4,1
Trentino-Alto Adige	597.259	596.854	0,1
Emilia-Romagna	3.567.297	3.381.702	5,5
<i>Settentrione / North</i>	<i>21.247.328</i>	<i>20.472.673</i>	<i>3,8</i>
Toscana	2.234.113	2.149.333	3,9
Marche	431.859	392.656	10,0
Umbria	2.877.312	2.570.017	12,0
Lazio	2.851.392	2.696.626	5,7
<i>Centro / Centre</i>	<i>8.394.676</i>	<i>7.808.632</i>	<i>7,5</i>
Abruzzo	1.107.069	1.059.801	4,5
Molise	875.926	543.732	61,1
Campania	2.263.098	2.184.352	3,6
Puglia	2.812.310	2.863.547	-1,8
Calabria	1.039.990	1.020.610	1,9
Basilicata	1.074.642	1.080.888	-0,6
<i>Meridione / South</i>	<i>9.173.035</i>	<i>8.752.930</i>	<i>4,8</i>
Sardegna	1.302.497	1.200.881	8,5
Sicilia	3.343.994	3.181.496	5,1
<i>Isole / Islands</i>	<i>4.646.491</i>	<i>4.382.377</i>	<i>6,0</i>
<i>Totale / Total</i>	<i>43.461.530</i>	<i>41.416.612</i>	<i>4,9</i>

enclosed between Molise's up 61.6% and Puglia's down 1.8%; Sardinia and Sicily were both positive.

In order to properly interpret the data at the local level, it must be kept in mind that the production data is not always indicative of the levels of demand in the individual markets, since the delivery of the product beyond regional frontiers is something well known to exist, and is in fact ever

more significant now than in the past.

From the time standpoint, production reported a greater increase during the first half (production up 6.2% consumption up 7.2%), despite the fact that right during this period of 2003 there were two working days less. Regarding the individual months, all were positive except August (production down 3.5%, consumption down 11.5%); they went from a peak increase of 10.5% in April to a minimum increase of 2.1% in February, compared with the corresponding months of 2002. Mean daily production during the year in question was more than 173 thousand tons, a 5.8% growth over the previous year.

Cement stocks dropped in 2003 by 2.1%, in line with the trend of the year before, taking their place at one million 228 thousand tons. As for clinker, after the sensible dip of 2002, in 2003 stocks amounted to two million 91 thousand tons, with a 2.5% increase over the year before.

GIACENZE, CONSUMI E CONSEGNE INTERNE  
STOCKS, CONSUMPTION AND DELIVERIES WITHIN ITALY

t. / tonnes

	Giacenze / Stocks		Variazioni % Change % 2003 / 2002		Consumi interni Domestic consumptions		Variazioni % Change % 2003 / 2002		Consegne interne Domestic deliveries		Variazioni % Change % 2003 / 2002	
	cemento cement	clinker clinker	cemento cement	clinker clinker	cemento cement				cemento cement			
2003	1.228.064	2.091.439			43.511.280				41.309.614			
			-2,1	2,5			5,4					5,5
2002	1.254.109	2.040.430			41.268.850				39.168.013			

During 2003 the production of [non-cement??] hydraulic binders for construction (HBC) amounted to 1,485,888 tons, displaying a growth of 1.5% or 21,627 tons. During the first half the growth in HBC production was 2.4%, while in the second half it stopped at a modest 0.4%.

For 2004 too the cement sector should maintain an uptrend, consolidating the results achieved in 2003. Considering the substantial stability envisaged for investments in residential and non-residential building construction, the size of this increase will be tied mainly to the speed with which, during the year, the infrastructures works projects of the Objectives Law go into their actual construction phase.





## PRODUZIONE MENSILE / MONTHLY PRODUCTION

t. / tonnes

	2003	2002	Variazioni % / Change % 2003 / 2002
Gennaio / January	2.650.781	2.485.318	6,7
Febbraio / February	3.226.042	3.158.838	2,1
Marzo / March	4.153.230	3.887.004	6,8
Aprile / April	3.765.823	3.407.565	10,5
Maggio / May	4.239.299	3.992.488	6,2
Giugno / June	4.025.937	3.843.681	4,7
Luglio / July	4.204.915	3.994.457	5,3
Agosto / August	2.566.117	2.658.833	-3,5
Settembre / September	3.694.826	3.613.587	2,2
Ottobre / October	4.134.038	3.917.220	5,5
Novembre / November	3.914.649	3.646.509	7,4
Dicembre / December	2.885.873	2.811.112	2,7
<b>Totale / Total</b>	<b>43.461.530</b>	<b>41.416.612</b>	<b>4,9</b>

## PRODUZIONE DI CEMENTO PER ABITANTE (\*) CEMENT PRODUCTION PER INHABITANT (\*)

kg

	2003	2002	Variazioni % / Change % 2003 / 2002
Settentrione / North	831	801	3,8
Centro / Central	770	716	7,5
Meridione / South	659	629	4,8
Isole / Islands	704	664	6,0
<b>Media / Average</b>	<b>763</b>	<b>727</b>	<b>4,9</b>

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

## The nation's cement imports and exports

In 2003 trade with abroad in the Italian cement sector reported, for the third year in a row, a negative balance, of two million 291 thousand tons, an increase of more than 50% relative to 2002 (a negative balance of one million 522 thousand tons). It is exclusively to be attributed to foreign trade in semi-finished clinker, while the cement-only trade balance was substantially in equilibrium.

Exports of cement and clinker in 2003 amounted to two million 233 thousand tons, exhibiting a drop relative to last year, both in absolute value (down 5.3% ) and as a percentage of the nation's production (5.1% in 2003 compared with 5.7% in 2002).

Exports were almost exclusively of cement (two million 178 thousand tons, less by 4.2% and accounting for more than 97% of the total exported), while clinker exports were hardly 55 thousand tons, a 33.3% dip relative to 2002. Exports' percentage incidences on the nation's production, lower compared with 2002, in 2003 were 5% and 0.2% respectively for cement and clinker. As for cement typologies, the drop in exports was mostly in Portland cement, while exports of white cement and slag cement increased.

The geographic distribution of cement exports over large areas in 2003 too saw the South in first place, which, although the only area whose exports dropped in 2003 (down 15%), contributed with 927 thousand tons to 42.6% of total exports (48% in 2002), followed by the Italian islands, with 848 thousand tons at an incidence of 38.9% (36.2% in 2002) and by the North , with 350 thousand tons and an incidence of 16.1% (14.1% in 2002). The contribution made by the Center's exports was marginal: just 53 thousand tons and a 2.4% incidence (1.6% in 2002). At the Regions level, Puglia and Sicily were confirmed as the major exporting regions, with 903 thousand tons and 679 thousand tons respectively , accounting on the whole for almost 73% of Italy's cement exports.

As regards the countries of destination, cement exports were prevalently to the Mediterranean basin countries, such as Albania (22.4% of the total exported), Spain (19%) and Malta (13,9%), while clinker was exported almost exclusively to Switzerland.

Cement and clinker imports in 2003 exceeded the historic maximum of 1992, amounting to four million 525 thousand tons, a 16.7% increase over 2002, and representing a share equal to 10.4% of production (9.4% in 2002).

The amount of cement imported in 2003 was two million 201 thousand tons, a 4.8% rise over 2002, accounting for 5.1% of the nation's production. More marked was the increase in semi-finished clinker, which amounted to two million 323 thousand tons (up 30.7%), accounting for 7.3% of the clinker produced; its imports exceeded the historic record for the second year in a row. Geographically speaking the distribution of the total amount



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 cement	clinker clinker	Totale Total	% di produzione esportata % of production exported	cemento cement	clinker clinker	Totale Total	% di produzione importata % of production imported
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
2003	2.178	55	2.233	5,1	2.202	2.323	4.525	10,4

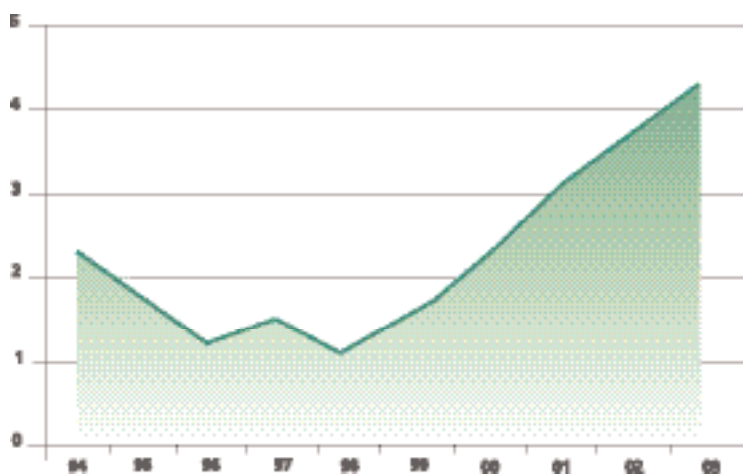
imported over the large areas was substantially unchanged relative to 2002; in particular, the North confirmed itself once again in 2003 to be the geographic area having most demand for foreign cement (53.4% of total imports), followed by the South (34.3%), by the Islands (9.6%) and by the Center. This last, accounting for just 2.7% of imports in 2003 as well, was the area exhibiting the least demand for foreign cement. Lombardy, Campania, Puglia and the Veneto, which on the whole make up 72.5% of the demand for foreign cement, were confirmed as the regions having the largest import flows.

On analyzing the foreign countries of origin of the imported cement, Turkey was confirmed in 2003 as well to be the principal country of origin, with one million 164 thousand tons (up 8.7% over 2002 and sending 52.9% of the total imported), followed by Greece (327 thousand tons, 14.9% incidence), despite the 7.3% drop in imports from that country, and by Croatia (323 thousand tons). To be remarked is the increase in imports from Tunisia, which in 2003 exceeded 67 thousand tons, an increase over the year before of 86.21%, as well as the dip in imports from Slovenia, less by over 13%.

The strong increase in clinker imports is prevalently to be attributed to the increases from Egypt, Bulgaria and Lebanon (accounting for 26.2%, 13.1% and 8.7% respectively) even if Turkey, from which 39% of imported clinker comes, is still solidly in first place. To be noted, instead, is the sensible dip in imports from India, whose exports dropped to 7.3% (18.3% in 2002).

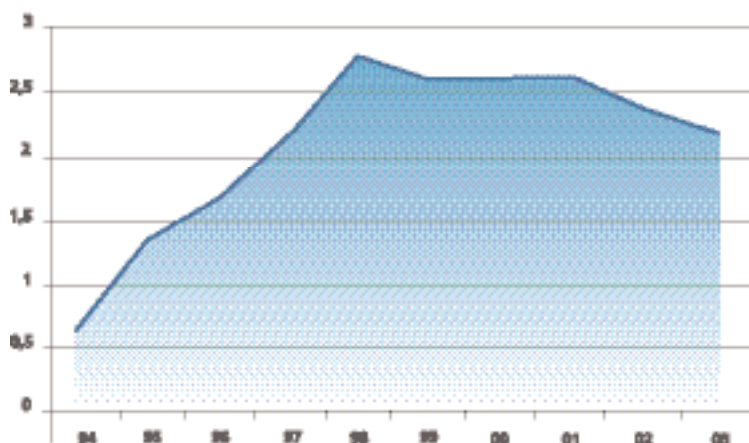
ANDAMENTO DELLE IMPORTAZIONI NAZIONALI DI CEMENTO E CLINKER DAL 1994 AL 2003  
 NATIONAL CEMENT AND CLINKER IMPORTS FROM 1994 THROUGH 2003

Milioni di tonnellate / Millions of tonnes



ANDAMENTO DELLE ESPORTAZIONI NAZIONALI DI CEMENTO E CLINKER DAL 1994 AL 2003  
 NATIONAL CEMENT AND CLINKER EXPORTS FROM 1994 THROUGH 2003

Milioni di tonnellate / Millions of tonnes





Cement world trade data for 2003 confirms Thailand as the principal exporter, with 12.2 million tons, even if this is less by 26% compared with 2002, during which it exported more than 16 million tons. In 2003 too Thailand was followed by Turkey and Japan, with 10.45 and 9.6 million tons respectively, while the amount of cement China exported dropped substantially (down 40%) this owing also to the dynamics of domestic demand.

In Europe, 2003's principal cement exporter was once again Turkey, with 10.9 million tons, a 20.9% increase over the preceding year, its incidence on national production being 28%.

**IMPORTAZIONI DI CEMENTO PER REGIONI NEL 2003**  
**CEMENT IMPORT IN 2003 BY REGION**

t. / tonnes

	Importazioni / Imports	Produzione / Production	% della produzione % of production
Piemonte	20.071	3.996.262	0,5
Liguria	42.900	129.265	33,2
Lombardia	651.616	6.615.702	9,8
Veneto	276.874	4.993.604	5,5
Friuli-Venezia Giulia	127.754	1.347.939	9,5
Trentino-Alto Adige	26.953	597.259	4,5
Emilia-Romagna	29.674	3.567.297	0,8
<b>Settentrione / North</b>	<b>1.175.842</b>	<b>21.247.328</b>	<b>5,5</b>
Toscana	25.378	2.234.113	1,1
Marche	0	431.859	0,0
Umbria	3.128	2.877.312	0,1
Lazio	30.539	2.851.392	1,1
<b>Centro / Centre</b>	<b>59.045</b>	<b>8.394.676</b>	<b>0,7</b>
Abruzzo	1.615	1.107.069	0,1
Molise	0	875.926	0,0
Campania	346.105	2.263.098	15,3
Puglia	321.459	2.812.310	11,4
Calabria	86.618	1.039.990	8,3
Basilicata	0	1.074.642	0,0
<b>Meridione / South</b>	<b>755.797</b>	<b>9.173.035</b>	<b>8,2</b>
Sardegna	102.943	1.302.497	7,9
Sicilia	108.039	3.343.994	3,2
<b>Isole / Islands</b>	<b>210.982</b>	<b>4.646.491</b>	<b>4,5</b>
<b>Totale / Total</b>	<b>2.201.666</b>	<b>43.461.530</b>	<b>5,1</b>

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

000 t. / 000 tonnes

	2003	% della produzione % of production	2002	% della produzione % of production	Variazioni % / Change % 2003 / 2002
Turchia / Turkey	10.404	27,3	10.421	28,0	-0,2
DK, Irl., P, S, SFGR / DK, Irl, P, S, SFGR	8.011	23,3	6.734	19,9	19,0
Germania / Germany	4.663	14,0	3.870	12,4	20,5
Bel, NL, L / Belgium, NL, L	3.826	34,5	3.976	33,4	-3,8
Italia / Italy	2.233	5,1	2.357	5,7	-5,3
Francia / France	1.710	8,4	1.527	7,6	12,0
Spagna / Spain	1.252	2,8	1.452	3,4	-13,8
Regno Unito / UK	350	3,1	512	4,5	-31,6

**MAGGIORI ESPORTATORI MONDIALI DI CEMENTO**  
**MAJOR WORLD CEMENT EXPORTERS**

Milioni di t. / Millions of tonnes

	2003	2002
Tailandia / Thailand	12,2	16,6
Turchia / Turkey	10,4	10,4
Giappone / Japan	9,6	8,3
India / India	8,9	6,9
Indonesia / Indonesia	7,3	8,0
Canada / Canada	5,7	5,5
Taiwan / Taiwan	5,0	3,9
Germania / Germany	4,7	3,9
Corea / Korea	3,1	3,4
Cina / China	3,0	5,0
Malesia / Malaysia	2,5	3,9
Italia / Italy	2,2	2,4
Filippine / Philippines	1,7	1,5
Francia / France	1,7	1,5
Spagna / Spain	1,3	1,5



## Production distributions by technical characteristics and composition

Cement classification is based on these two characteristics: strength requisites (class) and composition (types).

On analyzing the former of the two, it can be observed that, in 2003, classes 42.5 and 52.5, with 20 million 26 thousand tons produced, reported an increase of one million 516 thousand tons (up 8.2%) over 2002, and of three million 381 thousand tons (up 20.3%) over 2001. This class accounted for 46.1% of cement production in 2003. A trend was thus confirmed that, while not always regular, jumped from 29.4% in 1983 to 44.7% in 2002 and to 46.1% in 2003. Class 32.5, on the other hand, even if it displayed a growth of 529 thousand tons, (up 2.3%) over 2002, while still important, dropped to accounting for only 53.9% of total production (as against 55.3% in 2002 and 70.6% in 1983).

The reasons leading the Italian market to an ever greater use of high-strength cements are to be sought mainly in the advantages offered by their mechanical performance and the speed of construction they allow, with a consequent contraction of production costs for users.

The propensity to the use of high-strength cements is not however uniform throughout the large areas of the country. This situation owes, at least partially, to the different construction traditions that, little by little, have taken root in the territory. This state of affairs is obvious in central Italy, where the preponderance of class 42.5 or 52.5 cements, consolidated by now for two decades, reached in 2003 five million 193 thousand tons, with an increase of 389 thousand tons (up 8.1%) over 2002, and accounting for 61.9% of the area's total consumption (61.5% in 2002, 50.3% in 1983).

DISTRIBUZIONE DELLA PRODUZIONE PER CLASSI DI RESISTENZA  
DISTRIBUTION OF CEMENT PRODUCTION BY STRENGTH CLASSES

	000 t. / 000 tonnes										
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	
32,5 / 32,5	65,6	64,8	64,0	63,2	60,6	59,9	59,1	58,2	55,3	53,9	
42,5 e 52,5 / 42,5 and 52,5	34,4	35,2	36,0	36,8	39,4	40,1	40,9	41,8	44,7	46,1	

The opposite situation is encountered instead in northern Italy – historically little inclined to use cements of the class mentioned – which produced 7 million 292 thousand tons of it in 2003, with an increase of 391 thousand tons (up 5.7%) over the preceding year, and a percentage weight of 34.3% (33.7% in 2002 and 20.6% in 1983).

ANDAMENTO DELLA RIPARTIZIONE PER TIPI  
BEHAVIOUR OF DISTRIBUTION BY TYPE

	CEM I	CEM II	CEM III	CEM IV	CEM V
					%
1994	6,25	69,87	3,42	20,42	0,04
1995	6,69	72,45	3,00	17,69	0,17
1996	7,97	72,53	3,09	16,16	0,25
1997	8,68	71,21	3,62	16,13	0,36
1998	10,42	71,46	2,63	15,14	0,35
1999	10,08	72,83	3,06	13,52	0,51
2000	9,61	74,41	2,67	12,42	0,89
2001	8,93	76,01	2,87	11,44	0,75
2002	8,98	76,83	3,11	10,45	0,63
2003	8,51	76,98	3,26	10,58	0,67

2003 RIPARTIZIONE PER GRANDI CLASSI NELLE AREE GEOGRAFICHE  
2003 DISTRIBUTION BY BOARD CLASSES

	32,5 32,5		42,5 e 52,5 42,5 and 52,5	
	t. / tonnes	%	t. / tonnes	%
Settentrione / North	13.955.287	65,7	7.292.041	34,3
Centro / Central	3.202.134	38,1	5.192.542	61,9
Meridione / South	4.139.102	45,1	5.033.933	54,9
Isole / Islands	2.138.544	46,0	2.507.947	54,0
Totale / Total	23.435.067	53,9	20.026.463	46,1





In southern Italy and the islands too, areas where the prevalence of high-strength cements was acquired more recently, the production of this class grew, relative to 2003, by 473 thousand tons (up 10.4%) and 263 thousand tons (up 11.7%) respectively, with percentages of the corresponding total productions of 54.9% (52.1% in 2002, 30.3% in 1983) and of 54.0% (51.2% in 2002, 23.5% in 1983).

Going on now to a study of the second parameter, among the general typologies the substantial stationary nature of the incidence of type II cement on total production can be seen: in 2003 it was 77.0% (76.8% in 2002, 69.9% in 1994). Type IV cement, after a few years of considerable dipping, seems by now to have stabilized, with 10.6% (10.5% in 2002, 20.4% in 1994). Stability characterizes the type III cements too, with 3.3% (3.1% in 2002, 3.4% in 1994). The type I cements, 8.5%, after a first period of rapid rise underwent an arrest, followed by a constant decline (8.9% in 2002).

Considering then in particular the individual cement types produced in Italy - which in 2003 numbered thirteen (as during the preceding three years) out of the twenty-seven mentioned in the technical codes in force - it can be seen that the three most in demand by the national market (all belonging to the Portland cements category) together account for 72.2% of total production. In detail CEM II/A-L with 48.5% (48.5% in 2002) was confirmed as the most widespread, with a growth of 1017 thousand tons (up 5.1%) over the preceding year; CEM II/B-L, with 15.2% of the total (13.9% in 2002), chalked up an improvement of 862 thousand tons (up 15.0%) over 2002; while CEM I, with 8.5% (9.0% in 2002) regressed by 21 thousand tons (down 0.6%), still compared with the year before.

2003 RIPARTIZIONE PER TIPI DI CEMENTO  
2003 DISTRIBUTION BY CEMENT TYPE

tipo / type	t. / tonnes	%
I	3.698.576	8,51
II/A-S	964.846	2,22
II/B-S	1.151.731	2,65
II/B-P	221.654	0,51
II/A-L; II/A-LL	21.083.188	48,51
II/B-L; II/B-LL	6.619.191	15,23
II/A-M	91.269	0,21
II/B-M	3.324.807	7,65
III/A	1.216.923	2,80
III/B	199.923	0,46
IV/A	2.212.192	5,09
IV/B	2.386.038	5,49
V/A	291.192	0,67
<b>Totale / Total</b>	<b>43.461.530</b>	

## Where cement goes

This chapter does without a description of the areas of absorption, better known as the end destinations of cement, for which the reader is referred to the specific investigations periodically conducted by AITEC. Below instead is an analysis of the channels of flow – or intermediate destinations – through which the product goes on its output from the cement plant. These are, in decreasing order, cement plants, intermediaries, factories producing cement articles, construction companies, exports, premixing plants, and sundry other destinations.

Among the channels mentioned above, the premixers – at one time listed among the “sundry” destinations - were introduced only starting from 2001, but their importance has grown over the past few years. The premixing process has in fact become ever more widespread, owing to the advantages of mix uniformity and therefore quality, as well as to the speeding up of the work it allows, with consequent savings in time and money.

Compared with 2002, the cement-absorption quotas of the individual channels underwent some variations, owing for the most part to the investment picture in the construction sector.

In particular, concrete-mixing activities, with an increase of 8.7% in quantity over 2002, further strengthened their indisputable primacy, accounting for 48.7% of the total product (47.0% for the year previous). This pre-eminence over the other channels has been more and more confirmed – even if not always uniformly – over the years (in 1979 it accounted for 32.6% of the total ) owing to the economic advantages its use involves, both for technical reasons and because of its speeding up of job schedules, with a sensible reduction in construction costs. The expansion of this intermediate destination has been facilitated, for one thing, by the capillary nature of the concrete production network over the nation’s territory, particularly necessary considering the product’s limited radius of marketability. The percentages currently achieved by premixed concrete – made up in concrete mixing centers – put Italy on levels similar to those prevailing in the principal industrialized states.

Practically stationary over 2002 was the demand from the precasters (up 0.5%) and from retailers or intermediaries (down 0.6%).

The intermediaries channel, which in 2003 covered 20.3% of the total cement sold (21.4% in 2002), continued the decline that started in 1995, after a considerable climb that had brought its percentage to 32.9% in 1994.

Over the past few years the precasters have maintained a quota lying between 12 and 13% of the total, which in 2003 was 12.5% (13.1% in 2002).

Another channel displaying some increase in quantity (up 6.0%) was the construction company, whose variation in incidence over the year before was minimal: from 8.7% to 8.8%. This class, owing to the downsizing of direct relations between cement producers and users has seen, as time goes on, its importance gradually decline (14.0% in 1993, 22.2% in 1983).



Exports were in decline (down 4.2% over 2002), accounting for 5% of total cement production (5.5% in 2002). This destination is dealt with more in detail in another chapter of this report.

A quite marked percentage growth was enjoyed by the premixers (up 32.4% over 2002) with a percentage of the total of 3.9% (3.1% in 2002) (??).

A considerable contraction relative to 2002 was instead seen for the "sundry destinations" category (down 31.1%), with its share going from 1.2% (in 2002) to 0.8% in 2003.

#### 2003 DESTINAZIONI INTERMEDIE DEL CEMENTO 2003 CEMENT INTERMEDIATE DESTINATIONS

	t. / tonnes	%
Centrali di betonaggio / Ready-mixed	21.152.189	48,7
Rivenditori / Retail sales	8.813.998	20,3
Prefabbricatori / Pre-cast	5.454.422	12,5
Imprese di costruzione / Construction firms	3.820.268	8,8
Esportazione / Export	2.177.961	5,0
Premiscelatori / Premixing	1.699.346	3,9
Altre destinazioni / Other destinations	343.346	0,8

#### ANDAMENTO DELLE DESTINAZIONI INTERMEDIE DEL CEMENTO BEHAVIOUR OF INTERMEDIATE CEMENT DESTINATIONS

	%									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Centrali di betonaggio Ready-mixed	40,3	42,2	42,2	43,3	43,7	44,2	46,0	44,5	47,0	48,7
Rivenditori Retail sales	32,9	29,7	29,3	27,7	26,2	25,7	24,5	23,0	21,4	20,3
Prefabbricatori Pre-cast	11,9	13,2	13,2	12,2	12,8	13,4	13,2	12,6	13,1	12,5
Imprese di costruzione Construction firms	11,7	9,5	8,7	8,6	8,1	7,5	7,3	9,5	8,7	8,8
Esportazione Export	1,7	3,4	4,5	5,8	7,2	6,6	6,3	6,2	5,5	5,0
Premiscelatori Premixing	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	3,9
Altre destinazioni Other destinations	1,5	2,0	2,1	2,4	2,0	2,6	2,7	1,0	1,2	0,8

## The cement sector structure

The cement industry's structure in Italy, even if with some changes concerning most especially the sintering kilns, remained similar in 2003 to that of the year preceding.

The number of operating cement companies stayed unchanged at 23, the downsizing carried out over the past decades having arrested (there were 30 in 1999, 42 in 1989, 60 in 1979 and a good 72 in 1969). This reduction came about both through company reorganizations (mergers and takeovers), and by acquisitions by other groups. Compared with 2002 the number of plants in operation remained unchanged at 88, of which 58 were complete-cycle (59 in 2002) and 30 crushing-only (29 the previous year). The difference between the two years mentioned owes to the conversion of one plant, located in Emilia-Romagna, into a crushing plant. 2003 was witness to a further contraction in the number of active kilns, which descended to eighty, as against the 88 of 2002. The drop in the number of kilns has been continuous and gradual over time (there were 172 in 1980, 119 in 1990 and 90 in 2000), brought about by the following factors: one external, economic in nature, tied to the development of the market, the other internal, technological in nature, regarding cement plant modernization.

In relation to the internal factor 2003 witnessed the disappearance in our country of the wet-way production process. The eighty operating kilns are in fact all either dry-way or semi-dry-way.

### RIPARTIZIONE DELLA PRODUZIONE TRA LE MAGGIORI AZIENDE NEL 2003 PRODUCTION PERCENTAGE OF THE MAJOR FIRMS IN 2003

		%
<i>Gruppi e maggiori aziende associate AITEC / Groups and major firms</i>		
Italcementi	(1 azienda e 34 unità / 1 firm and 34 plants)	29,4
Buzzi Unicem	(2 aziende e 12 unità / 2 firms and 12 plants)	17,7
Colacem	(1 azienda e 9 unità / 1 firm and 9 plants)	14,1
Cementir	(1 azienda e 4 unità / 1 firm and 4 plants)	7,4
Holcim	(1 azienda e 3 unità / 1 firm and 3 plants)	6,4
Cementi Rossi	(1 azienda e 4 unità / 1 firm and 4 plants)	5,9
Sacci	(2 aziende e 4 unità / 2 firms and 4 plants)	3,5
Lafarge Adriasebina	(1 azienda e 2 unità / 1 firm and 2 plants)	2,7
Cementizillo	(1 azienda e 2 unità / 1 firm and 2 plants)	2,6
Monselice	(1 azienda e 1 unità / 1 firm and 1 plant)	1,8
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)	6,8
<b>Totale / Total</b>	<b>(23 aziende e 88 unità / 23 firms and 88 plants)</b>	<b>100,0</b>



This evolution, which took concrete form in the disappearance of the wet-way rotary kilns (they numbered 28 in 1980, 9.7% of total production, and fourteen in 1990, 4.7%), was motivated by reasons of a technical, environmental and economic nature, and brought with it a considerable savings in heat energy consumption.

The dry-way procedure is currently the most technologically advanced and the most widely adopted in the developed countries. Those eighty kilns produced more than 32 million tons of clinker, a 3.9% increase over 2002. Considering then the plants on a cement production basis, we find that there were some changes in 2003 compared with the previous year: the most important category was that lying between 600 thousand and one million tons, with twenty plants (18 in 2002) accounting for 34.6% of national production (34.3% in 2002), and with a 5.9% increase over 2002; in second place (third place last year) are the twelve plants (nine in 2002) exceeding one million tons (up 31% over 2002) and accounting for 33.1% of total production (26.9% in 2002); coming next (in second place in 2002) are the twenty plants (26 in 2002) putting out between 300 thousand and 600 thousand tons (down 22.3% over the preceding year's quantity) with a percent incidence of 21.4% (formerly 28.9%). Increasing (up 10.8% over 2002) were those 21 cement plants (twenty during the previous year) producing between 100 thousand and 300 thousand tons with a 9.8% share (9.3% in 2002) of the nation's production. Finally, unchanged

**RIPARTIZIONE DELLE CEMENTERIE PER CLASSI PRODUTTIVE NEL 2003**  
**CEMENT PLANTS DISTRIBUTION BY PRODUCTION OUTPUT IN 2003**

	n.	t. / tonnes	%
Fino a 100.000 tonn. / Up to 100,000 tonnes	15	483.071	1,1
da 100.001 a 300.000 tonn. / from 100,001 to 300,000 tonnes	21	4.249.153	9,8
da 300.001 a 600.000 tonn. / from 300,001 to 600,000 tonnes	20	9.303.225	21,4
da 600.001 a 1.000.000 tonn. / from 600,001 to 1,000,000 tonnes	20	15.027.085	34,6
oltre 1.000.000 di tonn. / over 1,000,000 tonnes	12	14.398.996	33,1
<b>Totale / Total</b>	<b>88</b>	<b>43.461.530</b>	<b>100,0</b>

**FORNI DI COTTURA**  
**SINTERING KILNS**

	2003	2002
Forni attivi / Active kilns	80	88
RS Rotanti a via secca e semisecca / RS-Rotary, dry and semidry mode	80	80
RH Rotanti a via umida / RH-Rotary, wet mode	0	8

over the previous year whether in terms of percentage of the total, 1.1%, whether in terms of number of plants, were the fifteen producing less than 100 thousand tons, which, however, displayed some slight progress (up 4.3%). Average production per plant – crushing plants included – was 494 thousand tons (471 tons in 2002).

Going on now to production per company, it is found that the most important size class was once again the over-three-million-tons, composed of four companies (as in 2002) accounting for 68.0% of total production (68.1% in 2002); next came that between 500 million and three million tons, with nine companies (eight in 2002) and a 28.3% share (27.1% for the preceding year); and finally that below 500 thousand tons, comprising ten companies (11 in 2002) with their 3.7% of the total (4.8% in the year before).

DISTRIBUZIONE TERRITORIALE DELLE UNITA' PRODUTTIVE NEL 2003  
TERRITORIAL DISTRIBUTION OF PLANTS IN 2003

	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	3	3	6
<i>Settentrione / North</i>	<i>24</i>	<i>19</i>	<i>43</i>
Toscana	4	2	6
Marche	1	1	2
Umbria	3	0	3
Lazio	2	2	4
<i>Centro / Centre</i>	<i>10</i>	<i>5</i>	<i>15</i>
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>	<i>17</i>	<i>4</i>	<i>21</i>
Sardegna	2	1	3
Sicilia	5	1	6
<i>Isole / Islands</i>	<i>7</i>	<i>2</i>	<i>9</i>
<i>Totale / Total</i>	<i>58</i>	<i>30</i>	<i>88</i>



Italy's cement industry, even if with slight changes, confirmed during 2003 once again its own peculiar features:

- A considerable number of companies, despite the mergers that have taken place over the past few years;
- Low concentration;
- Capillary distribution of plants over the nation's territory.

With the sole exception of Germany the principal countries of Europe possess a definitely lower number of companies than Italy's. France has just five companies, Spain fourteen, England five, Greece three, Austria nine, while the remaining countries never have more than two.

AZIENDE E UNITA' PRODUTTIVE COMPANIES AND PLANTS		
	2003	2002
Aziende / Companies	23	23
Unità produttive / Plants	88	88
di cui a ciclo completo of which, full-cycle	58	59
di cui officine di macinazione of which, grinding plants	30	29

RIPARTIZIONE DELLA PRODUZIONE PER CLASSI AZIENDALI PRODUCTION BY CLASSES OF FIRMS		
	n.	%
Inferiori a 500.000 tonn. Aziende Less than 500,000 tonnes Firms	10	3,7
Da 500.000 a 3.000.000 tonn. Aziende From 500,000 to 3,000,000 tonnes Firms	9	28,3
Oltre 3.000.000 di tonn. Aziende Over 3,000,000 tonnes Firms	4	68,0
Totale / Total	23	100,0

## Energy consumption

Cement production is among those manufacturing industries consuming most energy. Energy is in fact one of the cement industry's most important production factors, accounting for an average of 30-40% of the total cost of production. This is why cement industry companies have always displayed particular sensibility to energy savings, assigning enormous financial resources to technological innovations able to maximize process energy efficiency, with direct advantages both for economy and for the environment.

Over the past decade we have assisted at a continual improvement in thermal efficiency, which can be quantified as up 17% over the values recorded in 1990. This was shown by the investigation the European Commission assigned to Seville's IPTS Institute, entitled *The impact of the best available techniques on the competitiveness of the European cement industry*. In 2003 too solid fuels were the principal source of heat energy, needed in the production of semifinished clinker, followed by fuel oil, natural gas and alternative energy sources. In detail, fuel consumption amounted to 67.6 m<sup>3</sup> of natural gas, a strong increase over 2002 (up 70.6%), 2.8 million tons of coal (up 0.8%), 140 thousand tons of fuel oil (up 20%) and almost 191 thousand tons of non-conventional fuels, whose use displayed an increase of more than 85% over 2002. The resort had to this energy source, which enables the recovery of residues through thermoutilization in the clinker sintering process while also guaranteeing high environmental efficiency standards, contributes to solving one of the principal problems that Italy must deal with in the immediate future: wastes disposal. The use of alternative energy sources is, however, still far from the standards of the principal countries of Europe. This can be attributed mainly to the difficulty encountered at the local level in obtaining the authorizations required by the laws in force, both because of the fragmentation of the jurisdictions in the matter, and because of a widespread and unjustified distrust on the part of public opinion of forms of energy recovery from wastes, even though the production plants are in line with the best technologies available and guarantee no negative impact on the environment.

Despite this, the incidence of such fuels, which in 1998 was less than one percent, rose in 2003 to 5.3%, exceeding for the first time the incidence of fuel oil (5.2%), a percentage still of high growth potential when compared with the average (12%) for the other countries of Europe, where government strategy is to grant incentives to the use of these fuels. Holland, where 72% of heat is generated by non-conventional fuels is surely in the vanguard, with Norway's 42% following, while Switzerland, Germany, Austria and France are all close to 30 percent. The incidence of other fuels in 2003 was 87.3% for coal (91.1% in 2002), and 2.2% for natural gas (1.3%). On the whole, mean energy consumption per ton of cement, in terms of heavy fuel oil, was 62 kg, in line with the value recorded in 2002. With regard to electrical power consumption, prevalently used in grinding both raw materials and clinker, this amounted in 2003 to 4.9 billion KWh, a 2.6% increase over 2002, but anyway lower than the production increase, which means lower consumption per ton of cement produced. In 2003 in fact on the average 112 KWh of electrical power per ton of cement were used, as against the 115 KWh of 2002. In





order to properly evaluate the data to be noted is the strong increase during 2003 in imports of semi-finished clinker, whose processing demands less electrical power. Regarding the procurement of solid fuels, in 2003 too Italian cement works had prevalent resort to petroleum coke and coal, the coke coming from the USA and Venezuela, and the coal from South Africa and CSI. On the prices front, 2003 was one more year featuring strong tensions in petroleum product prices, due to the well-known events going on in the Middle East and to tensions accentuated by the supply control policy adopted by the OPEC countries. All this led to considerable increases in petroleum prices for 2004 as well, only partially compensated by a revaluation of the euro. Other factors contributing to the increase in prices are the exponential growth in the Chinese market's demand and the cost of leasing ships, which more than doubled. Worthy of remark too is that during 2004 we were witnesses to a gradual increase in the price of electrical power, and the startup of the Electricity Market has not as yet produced the hoped-for effects.

#### CONSUMI ENERGETICI NEL 2003 ENERGY CONSUMPTION IN 2003

		Variazioni % / Change % 2003 / 2002	
Energia elettrica / <i>Electrical power</i>	kWh.	4.897.064.637	2,6
Metano / <i>Natural Gas</i>	mc. / m <sup>3</sup>	67.593.116	70,6
Carbone / <i>Coal</i>	t. / tonnes	2.829.694	0,8
Olio combustibile denso <i>Heavy fuel oil</i>	t. / tonnes	140.539	20,1
Combustibili non convenzionali <i>Non-conventional fuels</i>	t. / tonnes	190.726	85,8

#### ANDAMENTO DEI CONSUMI DI COMBUSTIBILI BEHAVIOUR OF FUEL CONSUMPTION

	%			
	Carbone / <i>Coal</i>	O.c.d. / HFO	Metano / <i>Natural gas</i>	Altri / <i>Other</i>
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
2003	87,3	5,2	2,2	5,3

## The truck transport of cement

During 2003, as during the previous year, bulk cement deliveries increased further over sack deliveries. Bulk deliveries, more than 34.3 million tons, grew by 1918 thousand tons (up 5.9%) representing 79% of deliveries.

The delivery of cement in sacks amounted to 9.1 million tons, a 1.4% growth, while its incidence on total deliveries went from 21.7% to 21%.

Sacked cement is most used in the construction of small to medium-sized structures, in which enormous amounts of cement are not needed, as is the case for building restructuring. Almost the whole of cement deliveries, whether bulk or sacked, were made though highway transport, a form subject to a system of obligatory rates.

On August 14th 2003 the 5% rate increases went into force that were envisaged by the decree of the Ministry for Infrastructures and Transport of July 29th. This decree was issued, following the procedure called for by law 298/74, in partial reception of the proposal made by the Central Committee for the Truckdrivers' Register on December 9th 2002, which called for a 9.74% increase in the rates in force.

This increase in haul rates should, excepting unforeseen events, be the last before the entry into force of the reform called for by the bill requiring the Government to adopt one or more legislative decrees reorganizing the provisions that govern the transport of persons and things. With a view to an open and competitive market the areas of intervention are: the abandonment of the system of obligatory rates, and free contracting for truck freight transport. As this report goes to press, the bill was presented in the Senate and assigned to Committee 8A and a restricted committee has been requested that can hear the principal parties concerned. After some ten years from the rescission of the earlier agreement governing the transport of hydraulic binders negotiations were started up with the carriers' representatives to sift the possibility of stipulating a new agreement for the sector that envisages the introduction of regulations guaranteeing quality of service and rate flexibility.

### RIPARTIZIONE CONSEGNE NEL 2003 DELIVERY DISTRIBUTION IN 2003

	t. / tonnes	%
Insaccato / Sacked	9.124.104	21,0
Sfuso / Bulk	34.337.426	79,0

### ANDAMENTO RIPARTIZIONE CONSEGNE BEHAVIOUR OF DELIVERY DISTRIBUTION

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Insaccato / Sacked	33,1	31,2	29,4	27,6	25,6	26,2	23,2	22,2	21,7	21,0
Sfuso / Bulk	66,9	68,8	70,6	72,4	74,4	73,8	76,8	77,8	78,3	79,0



## The environment

The principal environmental topics of interest to the cement sector engaging the Association's attention during 2003 were: the carrying out of the Kyoto Protocol, the directive on chromium VI in cements, the enforcement of legislative decree no. 372/99 for IPPC plants, the handling of wastes, and REACH, the new system for regulating chemicals.

### Reduction of CO<sub>2</sub> emissions

The United States' rethinking and Russia's indecision regarding ratification of the Kyoto Protocol in fact did not discourage, whether in Europe or nationally, efforts to achieve the objectives for reducing greenhouse-effect gas emissions as called for by the Protocol for the individual states.

In fact, in the European Community institutions the itinerary for developing the proposal for regulating the Emissions Trading scheme went ahead without any delay. It was then completed during July with the Council's definitive adoption of the proposal for directive (published later in the European Community's October Official Gazette under number 2002/87/ EC) instituting a system for trading greenhouse-effect gas emissions quotas within the Community.

The firmness in pursuing its objectives displayed by the European Commission pushed the individual member states to make no exceptions to their own commitments regarding incorporation into their legal systems through the working up of their respective emission quotas National Allocation Plans. In March Italy published its CIPE (inter-ministerial committee on economic planning) resolution no. 123 of December 19th 2002 for the revision of the guidelines on policies and measures for reducing greenhouse-effect gas emissions. She also readied the work for the incorporation of the Emissions Trading directive envisaged by Community Law 2003 into its legal system.

AITEC, which had already taken part in the meetings with ministry officials for working over the contents of the resolution itself, also took part at the *Confindustria* headquarters in the sessions organized with the industrial sectors involved to look more deeply into the practicability of the hypotheses contained in the measure. During these occasions a number of cement sector positions, which had been expressed elsewhere, could be reconfirmed, in particular those regarding the options that the resolution identifies as measures for a further reduction in emissions, among which the use of wastes as alternative fuels in cement works kilns. All these remarks were summarized in a document that AITEC made up and brought to the attention of the Environment Ministry Director General. In substance, it was reconfirmed that the cement industry's production depends on the demand initiated by public and private construction works and thus is inevitably destined to grow in proportion to



the investments envisaged in these sectors over the coming years. Furthermore, the particularly brilliant performance of Italy's cement works from the standpoint of energy and emissions efficiency does not permit achieving significant reductions in its direct CO<sub>2</sub> emissions, tied to limestone decarbonating processes (process CO<sub>2</sub>) and to the combustion of fuels (thermal CO<sub>2</sub>). Therefore resort to the option identified by the CIPE resolution regarding the utilization of alternative fuels in cement works kilns will be indispensable: this option definitely represents the most effective method for reducing overall CO<sub>2</sub> emissions, since the emissions tied to incineration are obviated, along with those that are anyway consequent on the deterioration processes that come about after the accumulation of waste substances in dumps (CO<sub>2</sub> and methane, the latter having a greenhouse-effect potential some 23 times greater than CO<sub>2</sub> itself). From this it emerges that the deductibility of cement works' thermal CO<sub>2</sub> emissions must permit the deduction of the portion produced by biomasses (animal flours, paper, wood, fats and animal or vegetable fats and oils) and by other non-conventional fuels of a fossil nature. Putting this option into effect would be a good example of meeting one of the principal objectives of the law on wastes (legislative decree 22/1997), and that is to prevent the discharge into dumps of raw wastes and at the same time to recover energy by their combustion. It is however also necessary to remove the obstacles that too often prevent application at the local level of the laws in force on the recovery of wastes in the cement sector. Under many circumstances this sector is hamstrung by particularly stringent restraints, whose removal would permit subtracting from incineration and dumping considerable amounts of wastes, while saving in proportion important amounts of conventional fuels, some of high carbon content.

In view of the enforcement of the CIPE resolution and of the development of the National Allocation Plan, envisaged by the emissions-trading directive and to be presented by the member states on or before March 31st 2004, AITEC deemed it best to check over the emissions data of all its associate companies in order to have available, for the upcoming request of the Environment Ministry, the cement-sector data needed by the government to formulate its strategy for assigning quotas. In this regard, after a consultation that involved three expert environmental certification firms, Price Waterhouse Coopers was commissioned to make checks, following approved auditing and reporting procedures, on the proper application by the individual companies of the calculation algorithms envisaged by the World Business Council on Sustainable Development's *CO<sub>2</sub> Emissions monitoring and reporting protocol for the cement industry*. Thus witness would be borne to their credibility, correctness and completeness and the proper CO<sub>2</sub> emissions accounting would be assured. The commission called for checks on the years 1990 and 2000. The work of the firm so commissioned finished in March 2004 with the consignment to AITEC of a final report.

During the last months of the year AITEC took part in a series of meetings with the competent ministries, set up under the aegis of the protocol of understanding between the Environment Ministry, the Ministry for Production Activities and *Confindustria*, on the reduction of greenhouse-gas emissions. This protocol was signed to facilitate exchanges of information and proposals regarding the principal tasks to be performed as envisaged by the CIPE Resolution for carrying out the Kyoto Protocol, among which: verification of the state of enforcement of the

measures included in the reference scenario;  
 definition of the general picture of the cement-sector measures that could be the subject of program agreements; preparation of the National Allocation Plan for emissions quotas; and carrying out activities for promoting and coordinating projects within the sphere of the JI (Joint Implementation) and CDM (Clean development Mechanism) flexibility mechanisms.

In this regard it should be brought out that the work went ahead in the European Commission on developing the so-called linking proposal, needed to provide the connection between the Emissions Trading system and the JI and CDM flexibility mechanisms, in its turn indispensable to achieving Europe's reduction objectives and thus fully realizing the system set up by the Emissions Trading directive.

During the meetings of the delegations representing the several industrial sectors for the definitive attribution of the emissions quotas, AITEC had the opportunity to once again bring out the need for the cement sector to be assigned an emissions quota that took due consideration of the forecasts of the construction sector's growth, as formulated by the principal research institutes and arising out of the implementation of the program of strategic infrastructures of preeminent national interest. It was furthermore possible to argue for the need to obtain full recognition of the credits accruing from wastes reutilization, on the basis of the principle, more than once cited, of the complete neutrality of all CO<sub>2</sub> coming from non-conventional fuels. This was mentioned as a road that can be traveled to achieve emissions reduction objectives. The meetings went ahead during 2004; as this report is going to press Italy's National Allocation Plan has not as yet been notified to the European Commission, but a draft of it has been published for consulting on Internet, to which AITEC has made its own reply.

The year's concluding event was the *COP9* international conference in Milan, the latest of the series of conferences of the parties envisaged for the verification of the Kyoto Protocol program. It reconfirmed the need to pursue the Protocol's reduction objectives by carrying out, in Europe, the *Emissions Trading* directive, 2003/87/EC and the National Allocation Plans and to issue as soon as possible the "linking" directive. This last will permit acknowledgement of the emissions credits accruing from the JI/CDM emissions-reduction projects carried out in countries outside the European Community.

### Regulations governing chromium VI in cements

After a long and complex procedure, one demanding constant commitment from both the *Cembureau* offices and AITEC and which ended up in a compromise between the European Parliament, Council and Commission, directive 2003/53/EC was published. This directive introduces prescriptions regarding the limitation on the use of cement containing soluble hexavalent chromium in concentrations exceeding 2 ppm, imposing for them the use of reduction agents. Before its definitive issuance AITEC, which had been engaged in making contacts with the competent national agencies, more than once made known in the offices concerned its perplexities tied to the entry into force of this measure, underscoring the untimeliness of the initiative, since the labeling of cements had scarcely been started up, and noting as well the absence of a reproducible and repeatable method of analysis, to the point of requesting that the Italian government make a formal objection.



The member states must see to incorporating the directive into their legal systems on or before July 18th 2004 and to putting its provisions into force starting from January 17th 2005. The measure arrived, for one thing, only very shortly after the entry into force of legislative decree no. 65 of March 14th 2003 regarding "the classification, packing and labeling of dangerous preparations", which governs the compilation of the Safety Data cards. It furthermore prescribes that on packages of cement and cement preparations containing more than 2 ppm of soluble chromium (VI) there be the phrase "contains chromium VI - may produce an allergic reaction" unless the preparation has already been classified as conforming by being labeled with danger phrase R 43.

The imminence of the entry into force of the directive limiting the use of cement containing more than 2 ppm of chromium VI has still more accentuated cement operators' embarrassment, especially because of the absence of technical standards for carrying out the provisions contained in the directive itself. Not least among other objections is the absence of a standardized testing method (currently under study by a CEN working group, encharged by the European Commission); furthermore, there is not even any indisputable scientific support as to the onset of allergic phenomena able to justify a limitation measure that is at once so drastic and so inopportune, considering the precautions already in force for many years in production plants.

The European Economic and Social Board itself, in an opinion issued in June, before the directive's definitive publication in the Official Gazette of the European Community, while taking note of the law and stating its agreement with its content, expressed itself with an interlocutory formula, deeming it wise to await the conclusions of the study commissioned by *Cembureau* to an independent body, the National Institute of Occupational Health of Oslo. The results of this epidemiological study, regarding allergic dermatitis among construction workers in relation to the reduction of chromium VI in cement, were then brought by *Cembureau* to the attention of the Ministers of the European Council, but without effect..

After the issuance of directive 2003/53/EC and because of the problems consequent on its incorporation into the member state legal systems, AITEC formed an *ad hoc* working group to carry out the necessary investigations into the systems questions, the costs and times of upgrading cement plants, and the duration of conservation and availability on the market of the reducing agents needed to permit marketing cements on European markets.

In Italy, the compilation of the incorporation decree will fall to the Health Ministry, in concert with the Ministry for Production Activities, but as yet there has been no official notice either of initiatives leading to consultations with the parties concerned or of orientations and schedules for the issuance of the national measure.

Among the options left open by the directive and thus susceptible of regulation at the national level are to be noted the choice of additiving with a reducing agent the whole of cement production or only sack production and the maximum duration of conservation guaranteed by the manufacturer for cement additived with a reducing agent.

### Putting into effect of legislative decree 372/1999 on the integrated reduction of pollution – IPPC

In January, by special decree (ministerial decree of November 19th 2002) the Ministry for the Environment and for Safeguarding the Territory instituted the inter-ministerial commission contemplated by art. 3, paragraph 2 of legislative decree 372/1999 (putting into effect of directive 96/61/EC regarding integrated pollution prevention and reduction) in order to fully carry out the tasks called for by the European Community to achieve integrated pollution prevention. The task of this commission, which officially took office on May 14th, is to furnish technical support for the definition of the guidelines for the identification, utilization and updating of the BATs (Best Available Techniques). To this purpose a series of restricted technical groups (GTR) was formed in June, their work to develop the national documents that would have to be finished on or before December 28th 2003. The composition of the GTRs presupposes the participation of representatives of the Ministries for the Environment, Production Activities, and Health, of the Higher Health Institute and of ISPESL (on-the-job accident prevention) as well as of the trade associations representing the industries concerned in the field of application of legislative decree 371/1999.

AITEC took part in the work of the GTR dealing with *Cement production and other mineral product activities* and, with the support of experts from its member companies, made up a draft of the guidelines, based on the Community BRef for the cement sector worked up by IPTS of Seville in March 2000. A closely spaced series of meetings made it possible to prepare a definitive version of the guidelines, which was then consigned to the Environment Ministry within the deadline set by the commission. Other GTRs, in working up their respective sector guidelines, proceeded according to quite different schedules, which did not permit the ministry to close the work by the date wished and thus it could not issue the necessary decrees that would permit firms to make their requests for Integrated Environmental Authorization (IEA) as envisaged by the law. The legal uncertainties created compelled the ministry to deal with difficult questions that arose locally in order to cope with the initiatives of some Regions, which intended to issue regulations of a local nature for handling the IEA rather than follow the national directives that were within the Environment Ministry's jurisdiction.

This ministry anyway announced that it would see to issuing the decrees for the publication of the guidelines for the IPPC industries, together with provisions of a general nature to govern the preparation of the forms for filing the application for IEA, the list of the authorizations included within the IEA and the fees to be paid for the investigations.

With regard to the putting into force of the provisions contained in legislative decree 373/1999, the year 2003 saw the issuance - by means of a special DPCM (decree of the chairman of the Council of Ministers) - as well of the new forms for filing the Sole Environmental Statement Document (SSD). The innovations concerned the incorporation of the European Wastes Catalog into the SSD and the integration of the document with the communication envisaged by legislative decree 372/1999. This decree concerns the emissions data for making up the national air and water inventory of the production activities





falling within the field of application of directive 96/61/EC (IPPC). After a rectification was published a few weeks later, which became necessary owing to an imperfection in the wastes forms, the Environment Ministry had to intervene with an explanatory memorandum to remove the uncertainties that arose over the deadline at first laid down in the DPCM, definitively setting it as June 27th for sending the SSD (both its chapters: wastes and IPPC).

In light of the new deadline AITEC, with the contribution of its members' experts, developed a memorandum to furnish the information necessary to meeting its communication obligations, in particular those arising out of the National Emissions Inventory (INES). In fact during 2002 it sufficed to send only the data identifying the IPPC industrial complexes; postponed to the year after was the communication of the data on emissions into the air or water for the year 2002, should in the emissions at least one pollutant be present in amounts larger than the corresponding threshold value indicated by the law. These amounts were set forth in the tables of ministerial decree no. 29 of November 23rd 2002, bearing the title "data, formats and procedures for providing information". With the first INES statement completed (2002 data) everything contemplated by art. 10 of legislative decree 327/1999 concerning the yearly transmission of characteristic data regarding emissions into the air, water and soil to be carried out by IPPC plant managers had in fact been fully carried out.

### Wastes handling

In May AITEC was called on to take part in a "round table for consultation and investigation" on the topic *The use in the cement industry of non-traditional raw materials*, set up by the chief of cabinet of the Minister for the Environment and Protection of the Territory, to which were invited also representatives of the ministry itself. The initiative was part of a series of activities that the ministry had brought into being in order to better define some problems inherent in the use for various reasons in the cement industry of wastes, or really of true raw materials or "secondary raw materials". The topic included as well other production sectors which need, even at the Community level, technical updates or clarifying interpretations, but need most especially regulations that can provide the business world certainty of behaviour in full respect for the environment.

During the meetings, AITEC furnished a report on the activities of its member cement companies regarding the recovery of materials and energy from certain wastes, furnishing lumped data for the year 2002. The document presented to the round table brought out in particular the difficulties that the individual companies must deal with in carrying on recovery activities, especially at the local level, which are mainly difficulties in obtaining necessary permits and licenses from local administrations. Their attitudes, as all those in the business know by now, have for years constituted an often insurmountable obstacle to carrying on the recovery activities envisaged by the laws in force; whereas if authorizations could be obtained under simpler procedures a significant contribution to the safe handling of wastes throughout the nation would be made.

The round table's activities, owing to AITEC's contribution, issued in a final report, for the use of the Environment Ministry, containing considerations and suggestions as regards a possible

revision of the laws in force on wastes. Another report too was drafted, on *The ecologically compatible recovery of wastes in the cement industry*. Both documents were consigned to the Ministry's chief of cabinet, promoter of the initiative.

### Proposal for a Europe-wide regulation of chemicals – REACH

During 2003 work went ahead in Europe on the draft of a new system for regulating chemicals produced and put on the market – called REACH (by *chemicals* is to be understood substances as defined by directive 67/548/EEC). This initiative takes its point of departure from the publication by the European Commission of the white paper *Strategy for a future chemicals policy*, which was issued in 2001; it envisages the creation of a single system for controlling chemicals. The institution of the REACH system (Registration, Evaluation and Authorization/restriction for new and existing CHemical substances) aims to concentrate available resources on substances that, on the basis of experience, demand the intervention of the authorities because they exert particular impact on safety. The system comprises three elements: *Recording* of the fundamental information furnished by industry on about 30,000 substances (existing and new, whose volume of production exceeds one ton per year) in a centralized data base (it is estimated that recording only is needed for 80% of the total); *Evaluation* of the recorded data for all substances whose volume of production exceeds 100 tons per year (estimates are that 5000 substances are involved, 15% of those recorded); *Authorization* of the substances exhibiting determinate dangerous properties that give rise to serious preoccupation (some 1400 substances, 5% of the substances recorded).

The REACH system will apply both to new substances and to existing ones; a long period of transition will be needed, in order that the numerous existing substances be gradually introduced into the system as a function of the amounts used yearly. It will involve on the one hand the manufacturers or importers of the substances and on the other their users, and will exert considerable impact on the companies, both economically and administratively, as various studies worked up at the Europe level have had occasion to note.

By calling for the recording and evaluation of the individual substances (and for some of these also their authorization), the REACH system will involve an increase in economic and administrative costs at the charge of the companies, which will inevitably lead to a general rise in prices of the European products over those of other countries. This will mean a negative impact on the competitiveness of the specifically European products. In fact, the products imported into the European Community will not be subject to REACH and may thus be acquired at prices lower than those of the European products.

The cement industry is involved in this new system inasmuch as it is a producer of a "substance", cement, and the prescriptions would be most burdensome, in a system like the one currently under discussion, where priority is given to the amount of the substances used rather than to their dangerousness. It is also involved inasmuch as it is an "end user" of chemicals.



In light of these preliminary remarks, the cement sector, acting through *Cembureau* as well, immediately contacted the Companies and Environment departments of the European Commission to point out the suitability of reducing the field of application of the new regulation and of placing cement production among the sectors excluded from application of the system, for one reason because of the bureaucratic procedures that the cement industry is already called on to follow as regards its workers' safety and health. The initiatives aimed at limiting the "disruptive" impact of the new law were intensified at both the European and national levels, especially during May after the European Commission had issued a new version of it.

The legislative project, worked out to replace the more than forty directives and regulations currently in force, has undergone a public inquiry lasting eight weeks, and the parties concerned have been able to present their comments. For the entire summer a series of meetings came one after the other at the Community and national levels, during which industry could reconfirm its perplexities as to the measure's function and applicability, the need to at least downsize its field of application having been most especially underscored, and more than once.

AITEC intervened with its own contribution in the public consultation, stating the cement sector's position and reconfirming that cement producers should be affected by the new provisions only in their capacities as "end users" and "importers" of chemicals and not as "producers". This, since cement is to be considered the result of a mineralogical and not a chemical conversion of natural products. AITEC furthermore contributed to the analogous initiatives launched during the public consultation by *Cembureau*, by the Ministry for Production Activities and by *Confindustria*. During October, at the conclusion of the public inquiry, the European Commission issued a new draft of the regulations, receiving a number of the requests for modification.

To reconfirm Italian industry's position, during the month of November *Confindustria* set up a meeting in Brussels between members of the European Parliament and the presidents and directors of the principal trade associations, among which AITEC. During the meeting, which featured a discussion with the European Parliament on the principal consequences that the law would have for Italian companies, AITEC set forth the cement sector's position on the aspects of REACH relevant to it, such as: the lack of clarity as to who is involved, owing to obvious defects in the definition of the field of application; the danger of the new law's overlapping current laws on safety and health in the construction materials sector; and the industry's concern for the possible increase in costs and constraints that the product, the production process and the user can come up against. The application of the law to cement and to its whole industrial string would mean a useless and burdensome duplication of work both for the industry and for the control authorities, since the health, safety and environment aspects are already dealt with and regulated by current laws in the sector. For example, every cement producer already furnishes a Safety Data Card on the product, which informs users on any handling risks and as to the measures to be adopted in its use.

## Technical standards and Certification

### EC marking of ordinary cements

In March the Ministry for Production Activities signed the decree provisionally extending permission for the Institute for Construction Technologies – ITC-CNR to issue EC certification of conformity for common cements. The decree enabled ITC to maintain its authorization for a time period anyway contingent on the entry into force of the interministerial decree as per art. 9, paragraph 2 of decree of the President of the Republic no. 246 of April 21st 1993, bearing the title of “Regulation putting into effect directive 89/106/EEC (CPD) regarding construction products”. A question that was later resolved by the publication of the decree referred to, developed after a long and complex procedural itinerary that involved operators in the construction sector and officials of the competent ministries. It was published in July (ministerial decree no. 156 of May 9th 2003). The law definitively set the criteria and the procedures for issuing authorizations to certification, inspection and testing bodies operating in the construction products field and it went into force on July 18th 2003. The issuance of the decree had by now become necessary in order to give the operators affected by the CPD directive certainty, they having waited a long time for our country to put certification procedures in line with what the European market requires.



## Promotional and informational activities

### **A second-level university Master's degree in *Innovation in the design, rehabilitation and inspection of reinforced-concrete structures* – second course of studies**

Considering the success of the first course of studies, once again for the school year 2003-2004 AITEC took part in setting up the course of studies leading to the second-level university master's degree in *Innovation in the design, rehabilitation and inspection of reinforced-concrete structures*, the objective being to revitalize the post-graduate training of future professional people in the subject at issue.

This master's degree is offered by the third campus of the University of Rome – faculty of Architecture and the Structures department of the faculty of Engineering – with the support of the Higher Council of Public Works. Its aim is to train specific professional figures to high competence in the design, construction, running and inspection of reinforced-concrete structures. The contents and training programs for the second course leading to a master's were chosen in such fashion as to integrate technical aspects, economic-management implications and operating experience in the field. This, with particular reference to the most innovatory aspects that are changing the principles of structural design at the level of materials, construction techniques and inspection techniques, as well as, in the architectural field, with reference to topics concerning the relationship between form and technical function in new constructions. For this second course for the master's, AITEC has offered a scholarship, totally covering the costs of registration, in memory of Mr. Domenico Burattini, quondam director of AITEC, for the commitment and dedication with which he contributed to creating this training project.

### **AITEC website**

In April the association's site was put on line: [www.aitecweb.com](http://www.aitecweb.com), the result of an impulse given in 2002. The site was referred to by the *Confindustria* portal in its column *The site of the week*, as well as by the principal vertical portals in building and construction. It was developed with the objective of supplying a tool for rapid and efficient interaction between AITEC and its associates, as well as a communication channel for feeding technical, economic and promotional information to the outside world.

During 2003 the site chalked up more than ten thousand accesses, of which 2000 in the reserved areas. The pages consulted numbered on the whole almost 80,000, 80% of them being the public pages and 20% the reserved pages.

Some 800 requests for information came in through the *Contatti* (contacts) page of the association's site. Furthermore, as part of AITEC's effort to continually improve its website's services and contents, during 2004 a project was started up aimed at enriching the information and working tools made available on line.



## The *Ulisse* Project

In 2001 AITEC, in cooperation with Assobeton (national association of cement-item manufacturers) and ATECAP (national association of premixed concrete producers), started up an unprecedented interassociation promotional project in Italy, in support of reinforced and prestressed concretes and of items manufactured from cement. This initiative, called *Progetto Ulisse* (Ulysses project) has as its mission to revitalize the culture of cement by promoting cement as a material of value and quality for the constructions of the future. The idea of an interassociation project came out of the conviction that only through the integrated synergic action of every member of the string in which cement occupies the upline position would it be possible to vehicle an upgraded image of the whole system and consolidate producer/converter/end-market relations.

In 2003 the first phase of the initiative (lasting from 2001 through 2003) was concluded, it having brought about the following:

- the publication of manuals, multimedia material, reports and technical articles;
- laboratory tests and experiments on the durability and safety of reinforced-concrete structures and manufactured items;
- research projects and university courses;
- large-scale experimental campaigns;
- professional training and updating courses;
- conferences and seminars;
- specialized support to commissions and other bodies seeing to the definition of standards and technical specifications.

At the end of 2003 the foundations had been laid and the strategic guidelines defined for phase 2 of the *Ulisse* project (2004 through 2006), which will see the startup of new projects and of a massive advertizing campaign for disseminating the results achieved by the initiative.

## Fairs, expositions etc.

In 2003 too AITEC took part in the SAIE – International building-construction Industrialization Salon – an Italian fair of major importance in the construction field, the 39th of which was held in Bologna from October 15th through 19th 2003

AITEC was present in pavilion 29 and in area 42 devoted to the Technical Press, with a stand for the association's masthead *L'Industria Italiana del Cemento*, performing the following activities:

- popularizing and informational activities, with the public distribution of 3000 copies of the *Practical Manual of Building Construction* and of the *Teaching Pamphlets*, of 3000 copies of publications on specific subjects regarding standards on cement and concrete, design and structural aspects, for example applications of technologies in the construction of parking garages, highway pavements and barriers and coastal defense works, as well as economic data pertaining to the cement sector. Furthermore, the association's Italian-English magazine *L'Industria Italiana del Cemento* was given great prominence, with the distribution of 4000 sample copies.
- reports and contacts with the public, represented by entrepreneurs, designers, technical people belonging to public bodies, retailers and wholesalers, installers, people working in the cement sector in general, and representatives of public schools, universities, and training institutes and organizations.



- promotional activities, with the presentation of the association's website, to which a free-navigation web station was dedicated, along with the presentation of the *Ulisse* Project and of the program for a 2nd level Master's degree in *Innovation in the design, rehabilitation and inspection of r.c. structures*, set up by the third campus of the University of Rome.

As part of the SAIE program of conference and congress activities, which has always completed and enlivened the building-construction salon, the following conferences were put on, promoted by Project *Ulisse*:

- *The evolution of premixed concrete*, a seminar for designers and construction companies, which dealt with concrete standards and codes, and with the reliability and economy of premixed concrete, and the characteristics of self-compacting concrete.
- *The New Highways Project*: concrete-block pavements for highway safety in the urban environment, organized by *Assobeton's* Blocks and Pavements section, which set forth the special properties of highway pavements built of concrete blocks from the aspects of highway safety, reliability and durability.

### Teaching and general information

As usual, in 2003 as well AITEC saw to supporting teachers and students with teaching materials, information and technical publications. There was an increase over the previous year in the number of requests coming from the university world, from both instructors and students (prevalently those about to win their degrees), which was an addition to the traditional AITEC training activity targets: secondary institutes and construction-workers' schools. Substantial too was the request for support and updating coming from professional people, such as designers and engineers, or also those working in construction. Among the channels for requesting materials and publications are to be noted the association's website, much used too by those consulting the library and those making use of bibliographical services such as the search for articles in the magazine; other channels were the sending of e-mails and direct telephone contacts. On the whole in 2003 there were more than a thousand send-outs of articles and publications addressed to the domiciles of the persons concerned, to which are to be added the numerous consultations on electronic support that took place through the web site.

### Other promotional activities

2003 featured numerous initiatives in the field of institutional promotion and communication, among which we remark:

- AITEC's participation as sustaining member in the 59th Conference on Traffic and Circulation, organized by the Milan Automobile Club and devoted to the topic of highway freight transport, offered AITEC the chance to appear in the program with an institutional advertizing page.
- the press advertizing campaign on *Cement, our invaluable material*, hosted in one of the cement sector's most important periodicals.
- creation of the association's institutional brochure *AITEC, a pleasure to become acquainted*.
- creation of the new brochure *Our members' cement works*.
- an e-mail marketing promotional initiative having as its subject the magazine *L'Industria Italiana del Cemento*, which contacted over 20, 000 professional people working in construction.





- CEMENT INDUSTRY ACTIVITIES

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- PRODUCTION, DEPOSITS AND CONSUMPTION OF CEMENT BY GEOGRAPHIC DISTRICTS

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- MONTHLY CEMENT PRODUCTION

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- WORLD CEMENT PRODUCTION



ATTIVITÀ DELL'INDUSTRIA CEMENTIERA  
CEMENT INDUSTRY PRODUCTION

ATTIVITA' DELL'INDUSTRIA CEMENTIERA DAL 1979 AL 2003  
CEMENT INDUSTRY PRODUCTION FROM 1979 THROUGH 2003

	000 t. / 000 tonnes				milioni di euro correnti millions of current euro
	Produzione Production	Consegne interne Home deliveries	Esportazioni* Exports(*)	Importazioni* Imports(*)	Investimenti** Production(**)
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
2003	43.462	41.310	2.233	4.525	380

(\*) 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  
CEMENT PRODUCTION, STOCKS AND CONSUMPTION BY GEOGRAPHIC DISTRICT

CONSUMI APPARENTI PER ABITANTE  
APPARENT CONSUMPTION PER INHABITANT

	Totale <i>Total</i>	Settentrione <i>North</i>	Centro <i>Central</i>	Meridione <i>South</i>	Isole <i>Islands</i>	Media <i>Average</i>
	t. / tonnes	kg. / kg.				
1989	42.239.938	689	718	639	855	734
1990	43.081.136	702	741	613	868	747
1991	43.382.650	711	741	591	861	751
1992	44.520.161	735	756	586	845	770
1993	37.723.309	637	666	492	649	661
1994	34.868.291	601	631	516	541	610
1995	34.638.927	652	604	515	525	605
1996	33.622.812	656	595	483	553	586
1997	33.767.446	640	620	522	561	587
1998	34.685.376	646	681	564	598	603
1999	36.147.317	666	698	603	588	628
2000	38.337.636	711	689	626	627	664
2001	39.468.813	742	722	635	712	703
2002	41.268.850	801	716	629	664	724
2003	43.511.280	831	770	659	704	763(*)

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

GIACENZE  
STOCKS

	Cemento / <i>Cement</i>	Clinker
	t. / tonnes	t. / tonnes
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
2003	1.228.064	2.091.439

PRODUZIONE DI CEMENTO PER AREE GEOGRAFICHE  
CEMENT PRODUCTION BY GEOGRAPHIC DISTRICT

	Settentrione <i>North</i>	Centro <i>Central</i>	Meridione <i>South</i>	Isole <i>Islands</i>	Totale / <i>Total</i> 000 t. / 000 tonnes
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
2003	21.247	8.395	9.173	4.647	43.462



PRODUZIONE MENSILE DI CEMENTO  
MONTHLY CEMENT PRODUCTION

PRODUZIONE MENSILE DI CEMENTO DAL 1994 AL 2003  
MONTHLY CEMENT PRODUCTION FROM 1994 THROUGH 2003

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
	t. / tonnes									
Gennaio / January	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	2.650.781
Febbraio / February	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	3.226.042
Marzo / March	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	4.153.230
Aprile / April	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	3.765.823
Maggio / May	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	4.239.299
Giugno / June	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	4.025.937
Luglio / July	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	4.204.915
Agosto / August	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	2.566.117
Settembre / September	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	3.694.826
Ottobre / October	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	4.134.038
Novembre / November	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	3.914.649
Dicembre / December	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	2.885.873
Totale / Total	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	43.461.530

PRODUZIONE DI CEMENTO PER MESI E PER CIRCOSCRIZIONE GEOGRAFICHE NEL 2002 E NEL 2003  
MONTHLY CEMENT PRODUCTION BY GEOGRAPHIC DISTRICT IN 2002 AND 2003

	Italia Settentrionale Northern Italy		Italia Centrale Central Italy		Italia Meridionale Southern Italy		Italia Insulare Italian Islands		Totale Total	
	2003	2002	2003	2002	2003	2002	2003	2002	2003	2002
	t. / tonnes									
Gennaio / January	1.254.352	1.108.665	518.071	493.757	552.499	556.483	325.859	326.413	2.650.781	2.485.318
Febbraio / February	1.675.619	1.508.676	619.452	606.876	603.007	677.762	327.964	365.524	3.226.042	3.158.838
Marzo / March	2.114.422	1.955.430	798.484	720.972	815.123	798.282	425.201	412.320	4.153.230	3.887.004
Aprile / April	1.897.096	1.700.764	719.368	632.599	781.411	710.458	367.948	363.744	3.765.823	3.407.565
Maggio / May	2.070.639	1.942.380	816.236	750.295	909.236	867.455	443.188	432.358	4.239.299	3.992.488
Giugno / June	1.958.487	1.937.824	770.149	738.093	857.289	800.834	440.012	366.930	4.025.937	3.843.681
Luglio / July	2.103.859	2.043.844	789.219	739.645	865.171	804.551	446.666	406.417	4.204.915	3.994.457
Agosto / August	1.142.602	1.237.683	490.254	504.311	640.557	627.487	292.704	289.352	2.566.117	2.658.833
Settembre / September	1.806.985	1.797.676	706.557	675.782	792.970	744.964	388.314	395.165	3.694.826	3.613.587
Ottobre / October	2.008.686	2.001.456	819.702	738.432	853.543	794.478	452.107	382.854	4.134.038	3.917.220
Novembre / November	1.858.229	1.818.062	772.581	691.304	857.941	776.546	425.898	360.597	3.914.649	3.646.509
Dicembre / December	1.356.352	1.420.213	574.603	516.566	644.288	593.630	310.630	280.703	2.885.873	2.811.112
Totale / Total	21.247.328	20.472.673	8.394.676	7.808.632	9.173.035	8.752.930	4.646.491	4.382.377	43.461.530	41.416.612

PRODUZIONE MONDIALE DI CEMENTO  
WORLD CEMENT PRODUCTION

PRODUZIONE MONDIALE DI CEMENTO DAL 1999 AL 2003  
WORLD CEMENT PRODUCTION FROM 1999 THROUGH 2003

	1999	2000	2001	2002	2003	2003 2002	2003 1999	1999	2003
	Milioni di t. / Millions of tonnes					Variazioni % / Change %		Incidenza % / Percentage %	
Asia / Asia	993,7	1022,2	1082,2	1193,0	1298,7	8,9	30,7	62,0	66,9
di cui Cina / China	573,0	586,2	627,2	704,7	813,2	15,4	41,9	35,8	41,9
di cui Giappone / Japan	83,5	85,9	79,4	76,4	73,8	-3,4	-11,6	5,2	3,8
di cui India / India	97,8	99,6	108,7	119,8	125,6	4,8	28,4	6,1	6,5
Europa Or. / East Europe	82,5	84,4	86,2	89,0	91,1	2,4	10,4	5,2	4,7
di cui ex U.R.S.S. / ex USSR	34,8	32,3	35,1	39,7	39,6	-0,3	13,8	2,2	2,0
Europa Occ. / West Europe	229,9	238,3	230,9	237,1	243,7	2,8	6,0	14,4	12,5
di cui Italia / Italy	37,3	39,0	39,8	41,4	43,5	5,1	16,6	2,3	2,2
America / America	217,5	220,2	216,9	215,5	219,4	1,8	0,9	13,6	11,3
di cui U.S.A. / U.S.A.	86,0	87,8	88,9	89,7	92,1	2,7	7,1	5,4	4,7
Africa / Africa	68,9	74,2	75,6	79,6	80,5	1,1	16,8	4,3	4,1
Oceania / Oceania	9,0	8,8	8,1	9,1	8,6	-5,5	-4,4	0,6	0,4
Totale / Total	1.601,5	1.648,1	1.699,9	1.823,3	1.942,0	6,5	21,3	100,0	100,0

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

MAGGIORI PRODUTTORI DI CEMENTO NEL MONDO DAL 1999 AL 2003  
MAJOR WORLD CEMENT PRODUCER FROM 1999 THROUGH 2003

	1999	2000	2001	2002	2003	2003 2002	2003 1999
	Milioni di t. / Millions of tonnes					Variazioni % / Change %	
Cina / China	573,0	586,2	627,2	704,1	813,2	15,5	41,9
India / India	97,8	99,6	108,7	119,8	125,6	4,8	28,4
USA / USA	86,0	87,8	88,9	89,7	92,1	2,7	7,1
Giappone / Japan	83,5	85,9	79,4	76,4	73,8	-3,4	-11,6
Corea del Sud / South Korea	49,5	52,2	53,7	56,4	60,3	6,9	21,8
Spagna / Spain	35,8	38,2	40,5	42,4	44,8	5,7	25,1
Italia / Italy	37,3	39,0	39,8	41,4	43,5	5,1	16,6
Russia / Russian Federation	25,5	32,3	35,1	39,7	39,6	-0,3	55,3
Turchia / Turkey	34,8	38,6	33,4	37,3	38,1	2,1	9,5
Thailandia / Thailand	34,7	31,7	35,0	38,8	35,6	-8,2	2,6
Indonesia / Indonesia	27,9	31,3	34,8	31,0	34,9	12,6	25,1
Brasile / Brasil	40,3	39,6	38,9	38,0	34,0	-10,5	-15,6
Messico / Mexico	31,3	31,7	30,0	31,3	34,0	8,6	8,6
Germania / Germany	36,3	35,2	31,0	31,2	33,4	7,1	-8,0
Egitto / Egypt	22,3	25,0	24,5	26,8	28,6	6,7	28,3

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

Front and third cover pages:  
*Sphere in aperture* – by Luciano Ceschia  
*Congress Hall* in the town of Grado

Back of front cover page:  
the front cover of issue no. 790 – September 2003  
of the magazine *L'Industria Italiana del Cemento*

The following images shown on the interior  
are taken from the magazine *L'Industria Italiana del Cemento*

pages 4 and 50:  
*Hall of the Chancellery* in Berlin, Germany

Page 10:  
*Bridge over the Danube*, at Pochlarn, Austria

page 36:  
*Science Museum* and *Children's Museum*, in Wichita, Kansas, USA

page 46:  
*Toyota Stadium*, Japan

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