

# Stone

---

## **Oliver Vagt**

*The author is with the Minerals and Metals Sector,  
Natural Resources Canada.  
Telephone: (613) 992-2667  
Email: ovagt@nrcan.gc.ca*

**T**he volume of all types of stone shipped in Canada in 1999 was approximately 104 Mt based on preliminary figures. This amount is about 4% lower than in 1998. The reported value of total shipments in 1999 was about \$732 million, less than 1% higher than the previous year. Shipments served a very wide range of uses related to dimension stone, chemical and metallurgical grades of stone, pulverized stone and crushed stone, as shown in Table 2 (following the trade data provided in Table 1).

Shipments of crushed stone (mainly limestone) for producing cement and lime are essentially accounted for in separate chapters on Cement and Lime. Additional detailed information on regular aggregates, including crushed stone and sand and gravel, as well as on lightweight aggregates, including expanded shales/clays, perlite, vermiculite and pumice, is included in a separate chapter on Mineral Aggregates.

Dimension or ornamental stone relates to a variety of rock types that can be cut, shaped or simply selected for a broad range of construction/engineering, architectural or monumental requirements. The types of stone available are dependent on local geology, but mainly include granite, limestone, marble, sandstone and slate, as summarized in Tables 3 to 8 inclusive. The term "granite," as commercially applied, includes true granite, granodiorite, gneiss, and other medium- to coarse-grained igneous rocks. However, "black granite" includes anorthosite and other dark-coloured igneous rocks. Limestone and marble are often confused, marble being the metamorphosed equivalent of the former and usually including both dolomitic and calcitic varieties. As an industrial term, marble is used for recrystallized calcareous rock capable of taking a polish.

The value of exports of rough granite increased to \$16.5 million in 1999 (Table 1), an increase of nearly

10% compared to 1998. Also, exports of value-added worked granite for building and monumental needs, mainly to the United States, increased to nearly \$60 million, representing an increase of more than 13% since 1998. Plant modernizations by several stone producers across Canada have increased the availability of high-quality finished products at competitive prices. The value of output of all worked construction- and monument-related granite (f.o.b. manufacturing plant) serving both domestic and international markets is expected to be maintained at more than \$120 million annually.

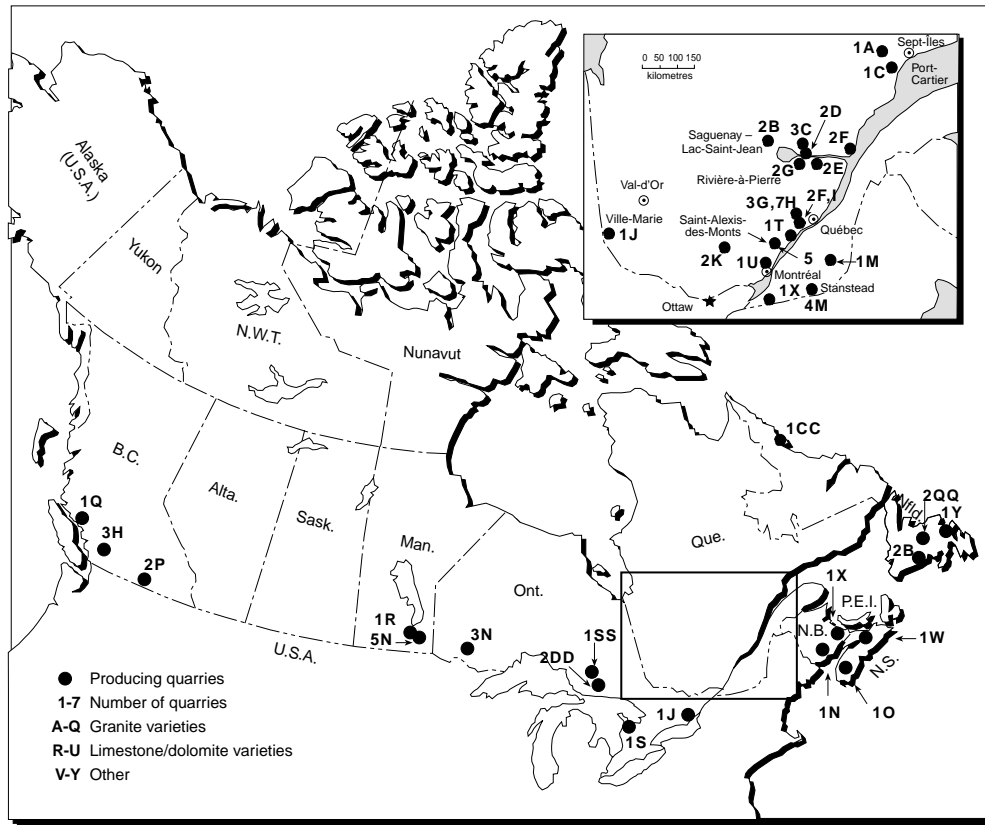
It is expected that growth in the use of dimension stone in Canada will continue in 1999/2000, based mainly on the positive outlook for all construction, including new expenditures for office buildings. Growth in exports of worked granite and other stone products is expected based on the continued expansion of U.S. markets. Shipments and exports of rough granite are also expected to increase as economies improve in Southeast Asia. Slate is becoming more important in world markets for its natural unpolished appearance, its non-slippery and multi-coloured durable surfaces, and its relatively low price.

*Notes: (1) For definitions and valuation of mineral production, shipments and trade, please refer to Chapter 65. (2) Information in this review was current as of February 1, 2000. (3) This and other reviews, including previous editions, are available on the Internet at [http://www.nrcan.gc.ca/mms/cmy/index\\_e.html](http://www.nrcan.gc.ca/mms/cmy/index_e.html).*

## **NOTE TO READERS**

**The intent of this document is to provide general information and to elicit discussion. It is not intended as a reference, guide or suggestion to be used in trading, investment, or other commercial activities. The author and Natural Resources Canada make no warranty of any kind with respect to the content and accept no liability, either incidental, consequential, financial or otherwise, arising from the use of this document.**

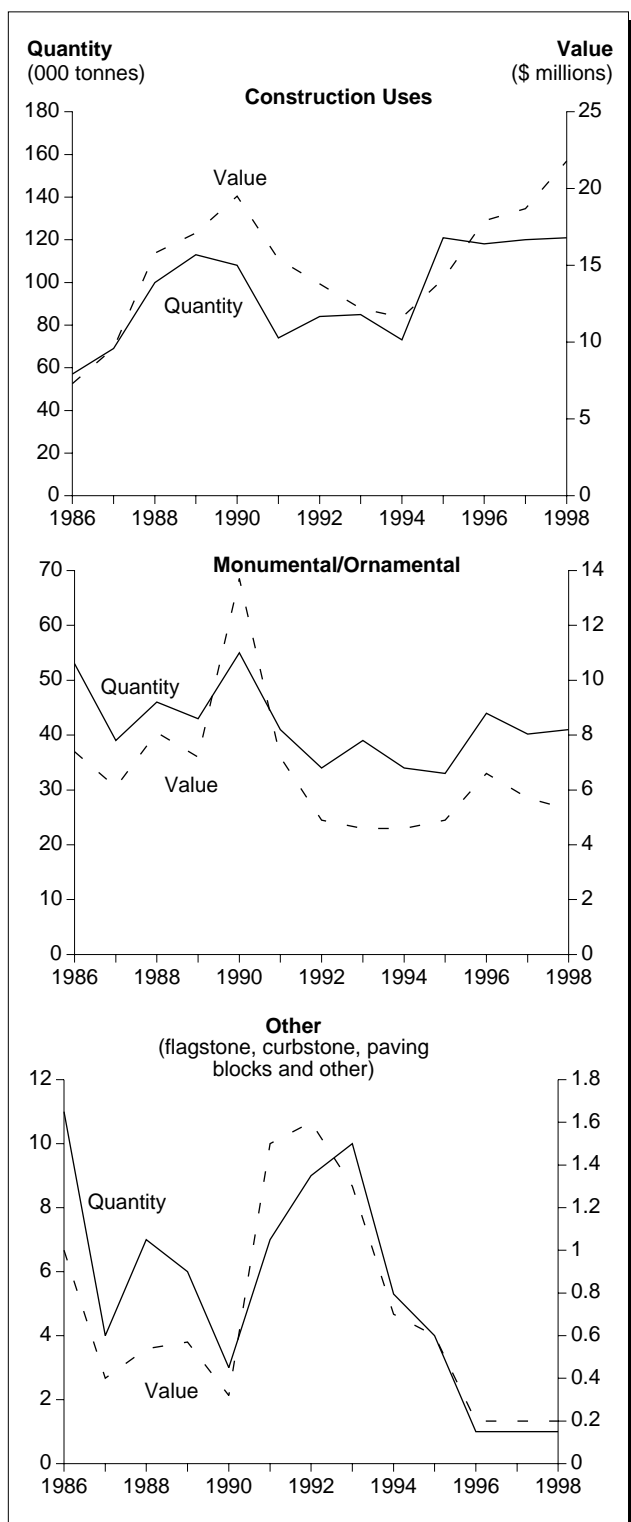
**Figure 1**  
**Canada, Architectural and Monumental/Ornamental Stone-Producing**  
**Centres, 1998**



- |  |   |
|--|---|
| A Fine-grained pinkish-grey banded gneiss        | Q Medium-grained blue-grey granite  |
| B Medium-grained pink granite                    | QQ Medium-grained gabbro  |
| C Coarse-grained black anorthosite               | R Light-coloured mottled dolomitic limestone (Tyndall)                    |
| CC Medium-grained "Reflect blue" anorthosite     | S Fine-medium crystalline blue-grey to buff marble/dolostone (Arriscraft) |
| D Medium-grained black gabbroic anorthosite      | SS Fine-grained, multicoloured pre-Cambrian marble                        |
| DD Blue-grey, and black and white anorthosite    | T Medium-grained light brownish-grey limestone (Deschambault)             |
| E Medium-grained pinkish-grey quartz monzonite   | U Medium-grained blue-grey limestone (Chazy)                              |
| F Fine-grained pink granitic gneiss              | V Medium-grained olive sandstone  |
| G Coarse-grained green charnockite               | W Fine-medium-grained olive-brown and blue-grey sandstone                 |
| H Coarse-grained pink-grey or brown-grey granite | X Fine-medium-grained white to buff sandstone (Potsdam)                   |
| I Medium-grained grey dioritic gneiss            | Y Very fine-grained varicoloured slate                                    |
| J Medium-grained red granite                     |   |
| K Fine-grained pink aplite                       |   |
| L Coarse-grained brown or red quartz monzonite   |   |
| M Medium-grained grey granite                    |   |
| N Medium-grained pink, brown or gold granites    |   |
| O Fine-grained blue-grey granite                 |   |
| P Coarse coral pink granite                      |   |

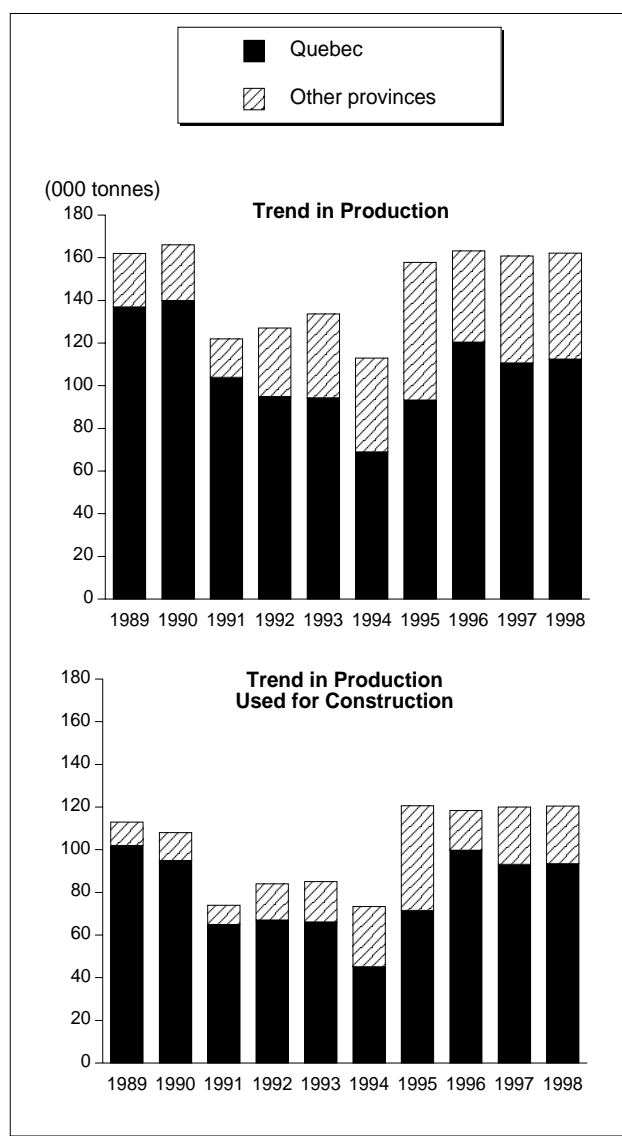
Source: Mainly provincial departments of Mines and Energy.

**Figure 2**  
**Canada, Production of Rough Granite**  
**(Sold and Used by Producers), 1986-98**



Sources: Natural Resources Canada; Statistics Canada.

**Figure 3**  
**Canada, Trends in Production of Rough Granite,**  
**1989-98**



Sources: Natural Resources Canada; Quebec Ministry of Natural Resources.

## TARIFFS

Item No.	Description	Canada			United States
		MFN	GPT	USA	Canada
2514.00	Slate, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape				
2514.00.10	Merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape	3.5%	Free	Free	Free
2514.00.90	Other	Free	Free	Free	Free
25.15	Marble, travertine, ecaussine and other calcareous monumental or building stone of an apparent specific gravity of 2.5 or more, and alabaster, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape				
2515.11.00	Marble and travertine: Crude or roughly trimmed	Free	Free	Free	Free
2515.12.00	Merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape	Free	Free	Free	Free
2515.20	Ecaussine and other calcareous monumental or building stone; alabaster				
2515.20.10	Crude or roughly trimmed	Free	Free	Free	Free
2515.20.20	Merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape	3.5%	Free	Free	Free
25.16	Granite, porphyry, basalt, sandstone and other monumental or building stone, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape				
2516.11.00	Granite: Crude or roughly trimmed	Free	Free	Free	Free
2516.12	Merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape	Free-3.5%	Free	Free	Free
2516.21.00	Sandstone: Crude or roughly trimmed	Free	Free	Free	Free
2516.22.00	Merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape	3.5%	Free	Free	Free
2516.90	Other monumental or building stone				
2516.90.10	Crude or roughly trimmed	Free	Free	Free	Free
2516.90.20	Merely cut, by sawing or otherwise, into blocks or slabs of a rectangular (including square) shape	3.5%	Free	Free	Free
25.17	Pebbles, gravel, broken or crushed stone, of a kind commonly used for concrete aggregates, for road metalling or for railway or other ballast, shingle and flint, whether or not heat-treated; macadam of slag, dross or similar industrial waste, whether or not incorporating the materials cited in the first part of the heading; tarred macadam, granules, chippings and powder, of stones of heading nos. 25.15 or 25.16, whether or not heat-treated				
2517.10.00	Pebbles, gravel, broken or crushed stone, of a kind commonly used for concrete aggregates for road metalling or for railway or other ballast, shingle and flint, whether or not heat-treated	Free	Free	Free	Free
2517.20.00	Macadam of slag, dross or similar industrial waste, whether or not incorporating the materials cited in subheading no. 2517.10	Free	Free	Free	Free
2517.30.00	Tarred macadam Granules, chippings and powder, of stones of heading nos. 25.15 or 25.16, whether or not heat-treated:	6.5%	Free	Free	Free

## TARIFFS (cont'd)

Item No.	Description	Canada			United States
		MFN	GPT	USA	Canada
2517.41.00	Of marble	Free	Free	Free	Free
2517.49	Other				
2517.49.10	Limestone roofing granules	Free	Free	Free	Free
2517.49.90	Other	Free	Free	Free	Free
6801.00	Setts, curbstones and flagstones of natural stone (except slate)	3.5%	Free	Free	Free
68.02	Worked monumental or building stone (except slate) and articles thereof, other than goods of heading no. 68.01; mosaic cubes and the like, of natural stone (including slate), whether or not on a backing; artificially coloured granules, chippings and powder, of natural stone (including slate)				
6802.10	Tiles, cubes and similar articles, whether or not rectangular (including square), the largest surface area of which is capable of being enclosed in a square that is less than 7 cm; artificially coloured granules, chippings and powder				
6802.10.10	Roofing granules, artificially coloured	Free	Free	Free	Free
6802.10.90	Other	8%	5%	Free	Free
	Other monumental or building stone and articles thereof, simply cut or sawn, with a flat or even surface:				
6802.21.00	Marble, travertine and alabaster	3.5%	Free	Free	Free
6802.22.00	Other calcareous stone	5%	Free	Free	Free
6802.23.00	Granite	3.5%	Free	Free	Free
6802.29.00	Other stone	5%	Free	Free	Free
	Other:				
6802.91.00	Marble, travertine and alabaster	6%	Free	Free	Free
6802.92.00	Other calcareous stone	6.5%	3%	Free	Free
6802.93.00	Granite	6.5%	6.5%	Free	Free
6802.99.00	Other stone	6.5%	6.5%	Free	Free
6803.00	Worked slate and articles of slate or of agglomerated slate				
6803.00.10	Roofing slate; slate for use in the manufacture of billard tables	Free	Free	Free	Free
6803.00.90	Other	6.5%	6.5%	Free	Free
68.04	Millstones, grindstones, grinding wheels and the like, without frameworks, for grinding, sharpening, polishing, trueing or cutting, hand sharpening or polishing stones, and parts thereof, of natural stone, of agglomerated natural or artificial abrasives, or of ceramics, with or without parts of other materials				
6804.10.00	Millstones and grindstones for milling, grinding or pulping	6.5%	Free	Free	Free
6804.23.00	Of natural stone	6.5%	Free	Free	Free

Sources: Customs Tariff, effective January 2000, Canada Customs and Revenue Agency; Harmonized Tariff Schedule of the United States, 2000.

**TABLE 1. CANADA, STONE EXPORTS AND IMPORTS, 1997-99**

Item No.		1997		1998		1999P	
		(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)
<b>EXPORTS</b>							
2514.00	Slate, whether or not roughly trimmed or merely cut, etc.	145	236	173	209	84	129
2515.11	Marble and travertine, crude or roughly trimmed	125	59	474	377	60	43
2515.12	Marble and travertine, merely cut, by sawing or otherwise, into blocks, etc.	77	55	1 798 <sup>r</sup>	884 <sup>r</sup>	403	193
		<b>(cubic metres)</b>		<b>(cubic metres)</b>		<b>(cubic metres)</b>	
2516.11	Granite, crude or roughly trimmed	40 714	14 794	23 755	12 910	25 763	14 056
		<b>(tonnes)</b>		<b>(tonnes)</b>		<b>(tonnes)</b>	
2516.12	Granite, merely cut, by sawing or otherwise, into blocks, etc.	6 214	1 600	5 798 <sup>r</sup>	2 100 <sup>r</sup>	3 767	2 378
		<b>(cubic metres)</b>		<b>(cubic metres)</b>		<b>(cubic metres)</b>	
2516.21	Sandstone, crude or roughly trimmed	957	145	4	20	30	4
		<b>(tonnes)</b>		<b>(tonnes)</b>		<b>(tonnes)</b>	
2516.22	Sandstone, merely cut, by sawing or otherwise, into blocks, etc.	150	54	208	214	96	56
2516.90	Monumental or building stone, n.e.s.	8 556	1 760	8 349	2 140	4 467	1 091
2517.10	Pebbles, gravel, broken or crushed stone used for aggregates, etc.	3 229 012	25 716	3 202 248 <sup>r</sup>	29 467 <sup>r</sup>	3 358 128	35 245
2517.41	Marble granules, chipping and powder of 25.15 or 25.16, heat-treated or not	135 366	18 275	244 573	27 275	267 194	37 958
2517.49	Granules, chippings and powder, n.e.s. of 25.15 or 25.16, heat-treated or not	1 465	138	1 732	206	41 155	1 139
6801.00	Setts, curbstones and flagstones of natural stone (except slate)	..	446	..	686	..	1 467
6802.10	Tiles, etc., rectangular or square not more than 7 cm, etc., artificially coloured granules, chippings and powder	..	1 705	..	3 667	..	5 541
6802.21	Monumental or building stone, cut or sawn, flat or even, marble, travertine and alabaster	..	134	..	413 <sup>r</sup>	..	171
6802.22	Monumental or building stone, cut or sawn, flat or even, other calcareous stone	..	129	..	191	..	102
6802.23	Monumental or building stone, cut or sawn, flat or even, granite	..	2 664 <sup>r</sup>	..	3 446	..	3 099
6802.29	Monumental or building stone, cut or sawn, flat or even, n.e.s.	..	758	..	1 204	..	2 065
6802.91	Worked monumental or building stone, n.e.s., marble, travertine or alabaster	..	1 615	..	1 437	..	2 330
6802.92	Worked monumental or building stone, n.e.s., calcareous stone, n.e.s.	..	860	..	2 078	..	1 649
6802.93.10	Worked building stone of granite	..	15 376	..	16 257	..	21 338
6802.93.90	Worked monumental or building stone, n.e.s., granite	..	30 578	..	33 167 <sup>r</sup>	..	35 702
6802.99	Worked monumental or building stone, n.e.s.	..	15 040	..	25 241 <sup>r</sup>	..	33 497
6803.00	Worked slate and articles of slate or agglomerated slate	..	4 755	..	4 720	..	7 754
6804.10	Millstones and grindstones for milling, grinding or pulping	..	4 969	..	5 027	..	4 927
6804.23	Millstones, grindstones, etc., of natural stone	..	3 271	..	2 159	..	1 074

TABLE 1 (cont'd)

Item No.		1997		1998		1999P	
		(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)
<b>IMPORTS</b>							
2514.00	Slate, whether or not roughly trimmed or merely cut, etc.	3 539	1 258	3 074	1 317	3 063	1 438
2515.11	Marble and travertine, crude or roughly trimmed	1 572	640	1 461	760	1 760	851
2515.12	Marble and travertine, merely cut, by sawing or otherwise, into blocks, etc.	697	519	1 420	1 346	1 294	866
2516.11	Granite, crude or roughly trimmed	50 318	14 489	70 554	20 080	64 938	20 044
2516.12	Granite, merely cut, by sawing or otherwise, into blocks, etc.	4 321	1 546	4 631 <sup>r</sup>	2 924	3 832	3 106
2516.21	Sandstone, crude or roughly trimmed	5 021	700	3 484	442	7 184	803
2516.22	Sandstone, merely cut, by sawing or otherwise, into blocks, etc.	4 953	1 367	5 397	1 633 <sup>r</sup>	5 306	1 671
2516.90	Monumental or building stone, n.e.s.	5 592	1 342	5 922 <sup>r</sup>	1 832	5 434	1 555
2517.10	Pebbles, gravel, broken or crushed stone used for aggregates, etc.	3 293 202	17 386	3 209 004 <sup>r</sup>	18 909 <sup>r</sup>	3 140 361	17 673
2517.41	Marble granules, chipping and powder of 25.15 or 25.16, heat-treated or not	79 104	12 715	104 178	17 170	88 642	15 250
2517.49	Granules, chippings and powder, n.e.s. of 25.15 or 25.16, heat-treated or not	78 013 <sup>r</sup>	1 987 <sup>r</sup>	40 583 <sup>r</sup>	1 744	26 568	1 398
6801.00	Setts, curbstones and flagstones of natural stone (except slate)	..	692	..	631	..	392
6802.10	Tiles, etc., rectangular or square not more than 7 cm, etc., artificially coloured granules, chippings and powder	..	375 <sup>r</sup>	..	587	..	665
6802.21	Monumental or building stone, cut or sawn, flat or even, marble, travertine and alabaster	..	7 591 <sup>r</sup>	..	10 531 <sup>r</sup>	..	10 887
6802.22	Monumental or building stone, cut or sawn, flat or even, other calcareous stone	..	238	..	216 <sup>r</sup>	..	349
6802.23.00.10	Granite, cut or sawn flat or even, building stone	2 200	2 948	2 901	4 102 <sup>r</sup>	4 711	5 902
6802.23.00.20	Granite, cut or sawn flat or even, monumental	451	554	652	577	481	405
6802.23.00.90	Granite, cut or sawn flat or even, granite other	4 527	6 193	6 276 <sup>r</sup>	9 737 <sup>r</sup>	7 684	12 118
6802.29	Monumental or building stone, cut or sawn, flat or even, n.e.s.	..	497	..	786	..	2 104
6802.91	Worked monumental or building stone, n.e.s., marble, travertine or alabaster	..	16 217 <sup>r</sup>	..	18 276 <sup>r</sup>	..	19 719
6802.92	Worked monumental or building stone, n.e.s., calcareous stone, n.e.s.	..	1 398	..	1 606 <sup>r</sup>	..	1 492
6802.93.00.10	Worked building stone of granite	1 406	2 150	1 876	3 458	1 878	3 257
6802.93.00.20	Worked monumental stone of granite, monuments, bases and markets finished	993	1 219	1 925	2 725	2 014	2 778
6802.93.00.90	Worked monumental or building stone, n.e.s., granite	4 317 <sup>r</sup>	6 539 <sup>r</sup>	4 283 <sup>r</sup>	7 742 <sup>r</sup>	5 054	7 098
6802.99	Worked monumental or building stone, n.e.s.	..	1 792 <sup>r</sup>	..	2 404 <sup>r</sup>	..	2 816
6803.00	Worked slate and articles of slate or agglomerated slate	..	7 442	..	7 783 <sup>r</sup>	..	6 096
6804.10	Millstones and grindstones for milling, grinding or pulping	..	1 859	..	2 197 <sup>r</sup>	..	2 066
6804.23	Millstones, grindstones, etc., of natural stone	..	859	..	978 <sup>r</sup>	..	1 048

Source: Statistics Canada.

.. Not available or not applicable; n.e.s. Not elsewhere specified; P Preliminary; r Revised.

TABLE 2. CANADA, TOTAL PRODUCTION OF STONE, 1997-99

	1997		1998		1999P	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
<b>BY PROVINCE/TERRITORY<sup>1</sup></b>						
Newfoundland	2 336	20 974	2 606	19 837	2 516	16 553
Nova Scotia	7 764	45 523	7 628	45 348	7 005	42 094
New Brunswick	3 934	20 293	3 500	20 796	3 667	22 582
Quebec	29 043	187 544	32 220	215 171	29 791	211 029
Ontario	44 839	299 792	50 689	344 707	49 602	360 238
Manitoba	4 249	18 718	4 992	24 971	4 547	22 503
Alberta	591	6 698	633	5 362	488	4 865
British Columbia	6 266	43 497	6 321	46 995	6 156	47 906
Northwest Territories	243	1 123	336	4 760	255	4 599
Total	99 265	644 162	108 924	727 947	104 026	732 369
<b>BY USE<sup>2</sup></b>						
Dimensional stone						
Rough	285	30 799	302	34 100	..	..
Monumental and ornamental stone (n.f.)	54	6 356	68	5 691	..	..
Other (flagstone, curbstone, paving blocks, etc.)	54	6 186	66	8 668	..	..
Lining open-hearth furnaces	-	-	-	-	..	..
Chemical and metallurgical						
Cement plants, Canada	14 731	45 065	14 334	46 555	..	..
Cement plants, foreign	1 747	8 234	1 632	7 973	..	..
Flux in iron and steel furnaces	332	2 154	3 406	21 830	..	..
Flux in nonferrous smelters	158	1 046	129	900	..	..
Glass factories	181	2 850	203	3 635	..	..
Lime plants, Canada	4 285	26 276	3 353	18 558	..	..
Lime plants, foreign	447	2 503	216	1 843	..	..
Pulp and paper mills	117	1 216	89	1 046	..	..
Sugar refineries	..	1	-	-	..	..
Other chemical uses	1 902	11 854	1 748	11 787	..	..
Pulverized stone						
Whiting	44	3 250	48	3 631	..	..
Asphalt filler	164	226	175	261	..	..
Dusting coal mines	4	286	3	219	..	..
Agricultural purposes and fertilizer plants	1 078	15 617	1 169	17 914	..	..
Other uses	875	32 838	806	37 892	..	..
Miscellaneous stone						
Manufacture of artificial stone	8	291	10	395	..	..
Roofing granules	450	21 290	580	25 388	..	..
Poultry grit	167	1 848	188	2 080	..	..
Stucco dash	20	2 355	25	3 598	..	..
Terrazzo chips	4	179	4	153	..	..
Rock wool	34	571	14	214	..	..
Rubble and riprap	693	3 032	1 415	8 147	..	..
Other uses	1 869	16 489	944	8 350	..	..
Crushed stone for						
Concrete aggregate	12 631	72 511	17 537	99 721	..	..
Asphalt aggregate	12 559	75 803	10 398	63 791	..	..
Road metal	35 137	180 657	31 135	165 001	..	..
Railroad ballast (includes traprock)	1 563	13 783	2 187	16 668	..	..
Other uses	27 674	133 230	35 318	181 157	..	..
Total	119 267	718 792	127 502	797 167	..	..

Source: Natural Resources Canada.

- Nil; .. Not available; ... Amount too small to be expressed; n.f. Not finished or dressed; P Preliminary.

<sup>1</sup> Data exclude stone used in the Canadian cement, lime and clay industries. <sup>2</sup> Data include stone used in the Canadian cement, lime and clay industries.

Note: Numbers may not add to totals due to rounding.



TABLE 3. CANADA, PRODUCTION OF LIMESTONE, 1997-99

	1997		1998		1999p	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
<b>BY PROVINCE/TERRITORY<sup>1</sup></b>						
Newfoundland	1 660	12 542	1 710	12 784	1 476	10 440
Nova Scotia	253	4 797	211	3 789	183	3 277
New Brunswick	467	6 830	544	7 637	431	5 759
Quebec	20 633	111 452	22 101	122 287	21 367	126 924
Ontario	42 515	240 206	47 285	267 250	46 772	293 214
Manitoba	3 867	15 487	4 083	16 675	3 697	15 165
Alberta	535	5 631	586	4 102	480	3 765
British Columbia	2 843	21 854	2 506	22 371	2 635	24 303
Northwest Territories	109	523	32	56	3	17
Total	72 882	419 322	79 058	456 951	77 045	482 865
<b>BY USE<sup>2</sup></b>						
Dimensional stone						
Rough	87	3 766	107	4 403	..	..
Monumental and ornamental stone (n.f.)	13	577	23	388	..	..
Other (flagstone, curbstone, paving blocks, etc.)	37	3 008	49	4 779	..	..
Chemical and metallurgical						
Cement plants, Canada	14 417	44 219	14 054	45 546	..	..
Cement plants, foreign	1 747	8 234	1 632	7 973	..	..
Flux in iron and steel furnaces	332	2 154	3 406	21 830	..	..
Flux in nonferrous smelters	158	1 046	129	900	..	..
Glass factories	181	2 850	158	2 435	..	..
Lime plants, Canada	4 285	26 276	3 353	18 558	..	..
Lime plants, foreign	447	2 503	216	1 843	..	..
Pulp and paper mills	117	1 216	89	1 046	..	..
Sugar refineries	..	1	..	..	..	..
Other chemical uses	915	8 564	857	7 680	..	..
Pulverized stone						
Whiting	44	3 250	48	3 631	..	..
Asphalt filler	54	164	46	155	..	..
Dusting, coal mines	4	286	3	219	..	..
Agricultural purposes and fertilizer plants	1 071	15 475	1 049	15 963	..	..
Other uses	162	4 051	126	2 966	..	..
Miscellaneous stone						
Manufacture of artificial stone	..	..	..	..	..	..
Roofing granules	124	987	129	974	..	..
Poultry grit	166	1 754	187	1 974	..	..
Stucco dash	20	2 301	24	3 540	..	..
Rock wool	5	42	3	28	..	..
Rubble and riprap	287	1 469	718	2 638	..	..
Other uses	1 579	15 117	701	6 834	..	..
Crushed stone for						
Concrete aggregate	9 442	52 803	13 916	77 246	..	..
Asphalt aggregate	7 466	44 003	5 825	33 294	..	..
Road metal	29 039	150 024	23 135	123 931	..	..
Railroad ballast (includes traprock)	205	1 573	247	1 219	..	..
Other uses	19 180	92 106	26 234	129 064	..	..
Total	91 583	489 817	96 466	521 056	..	..

Source: Natural Resources Canada.

.. Nil; . . Not available; . . . Amount too small to be expressed; n.f. Not finished or dressed; P Preliminary.

<sup>1</sup> Data exclude stone used in the Canadian cement and lime industries. <sup>2</sup> Data include stone used in the Canadian cement and lime industries.

Note: Numbers may not add to totals due to rounding.

**TABLE 4. CANADA, PRODUCTION OF MARBLE,<sup>1</sup> 1997-99**

	1997		1998		1999 <sup>P</sup>	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
<b>BY PROVINCE</b>						
Quebec	477	10 860	620	14 814	608	16 396
Ontario	458	22 229	548	28 890	689	26 032
British Columbia	7	132	-	-	...	34
Total	941	33 222	1 168	43 704	1 297	42 461
<b>BY USE</b>						
Dimensional stone						
Rough	23	1 013	13	699	..	..
Monumental and ornamental stone (n.f.)	-	-	-	-	..	..
Other (flagstone, curbstone, paving, blocks, etc.)	-	-	1	188	..	..
Chemical process stone						
Glass factories	-	-	45	1 200	..	..
Pulverized stone						
Agricultural purposes and fertilizer plants	8	143	121	1 950	..	..
Other uses	535	27 723	512	33 989	..	..
Miscellaneous stone						
Manufacture of artificial stone	2	44	3	74	..	..
Roofing granules	-	-	16	435	..	..
Poultry grit	...	3	...	3	..	..
Stucco dash	1	31	1	16	..	..
Terrazzo chips	4	179	4	153	..	..
Rock wool	1	14	1	12	..	..
Rubble and riprap	-	-	-	-	..	..
Other uses	23	769	11	703	..	..
Crushed stone for						
Concrete aggregate	150	1 697	166	1 752	..	..
Asphalt aggregate	20	114	17	112	..	..
Road metal	29	188	38	403	..	..
Other uses	145	1 305	220	2 017	..	..
Total	941	33 222	1 168	43 704	..	..

Source: Natural Resources Canada.

- Nil; .. Not available; ... Amount too small to be expressed; n.f. Not finished or dressed; P Preliminary.

<sup>1</sup> Marble refers to a commercial definition that may also include limestone, travertine and greenstone (serpentinite or amphibole).

Note: Numbers may not add to totals due to rounding.

**TABLE 5. CANADA, PRODUCTION OF GRANITE, 1997-99**

	1997		1998		1999P	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
<b>BY PROVINCE/TERRITORY</b>						
Newfoundland	222	4 433	226	4 001	254	4 213
Nova Scotia	6 152	33 473	6 153	34 947	5 594	32 381
New Brunswick	3 424	13 324	2 825	12 390	2 929	14 899
Quebec	5 982	49 988	6 885	57 931	6 096	52 258
Ontario	1 855	35 987	2 845	46 990	2 130	39 357
Manitoba	202	3 106	746	8 196	713	7 254
British Columbia	3 397	21 338	3 780	24 114	3 486	23 054
Northwest Territories	79	526	99	648	57	417
<b>Total</b>	<b>21 314</b>	<b>162 174</b>	<b>23 558</b>	<b>189 216</b>	<b>21 258</b>	<b>173 832</b>
<b>BY USE</b>						
<b>Dimensional stone</b>						
Rough	120	18 687	121	21 820	..	..
Monumental and ornamental stone (n.f.)	40	5 689	41	5 263	..	..
Other (flagstone, curbstone, paving blocks, etc.)	1	138	1	181	..	..
<b>Pulverized stone</b>						
Asphalt filler	111	62	128	106	..	..
Other uses	15	86	17	85	..	..
<b>Miscellaneous stone</b>						
Manufacture of artificial stone	3	184	4	247	..	..
Roofing granules	326	20 303	436	23 980	..	..
Poultry grit	1	91	1	104	..	..
Stucco dash	...	23	...	42	..	..
Rock wool	27	516	10	174	..	..
Rubble and riprap	205	1 163	648	5 402	..	..
Other uses	25	212	65	472	..	..
<b>Crushed stone for</b>						
Concrete aggregate	2 842	16 945	3 130	19 110	..	..
Asphalt aggregate	4 735	29 693	4 086	27 439	..	..
Road metal	4 893	24 587	6 102	32 139	..	..
Railroad ballast (includes traprock)	1 315	12 055	1 940	15 449	..	..
Other uses	6 655	31 742	6 828	37 205	..	..
<b>Total</b>	<b>21 314</b>	<b>162 174</b>	<b>23 558</b>	<b>189 216</b>	<b>..</b>	<b>..</b>

Source: Natural Resources Canada.

- Nil; . . Not available; . . . Amount too small to be expressed; n.f. Not finished or dressed; P Preliminary.

Notes: Numbers may not add to totals due to rounding. Data include shipments by producers regardless of industrial classification. Granite includes all igneous rock.

**TABLE 6. CANADA, PRODUCTION OF SANDSTONE, 1997-99**

	1997		1998		1999 <sup>p</sup>	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
<b>BY PROVINCE<sup>1</sup></b>						
Newfoundland	319	1 239	562	1 864	458	1 496
Nova Scotia	1 335	7 174	1 239	6 500	1 213	6 371
New Brunswick	—	—	...	46	...	46
Quebec	1 516	10 523	1 862	12 934	1 489	11 658
Ontario	11	1 369	10	1 577	11	1 635
Manitoba	1	2	1	1	1	3
Alberta	8	987	—	—	—	—
Total	3 190	21 293	3 673	22 923	3 173	21 209
<b>BY USE<sup>2</sup></b>						
Dimensional stone						
Rough	53	4 915	50	5 081	..	..
Monumental and ornamental stone (n.f.)	1	91	4	40	..	..
Other (flagstone, curbstone, paving blocks, etc.)	9	407	9	415	..	..
Chemical process stone						
Cement plants, Canada	39	166	47	314	..	..
Pulverized stone						
Other uses	163	978	150	852	..	..
Miscellaneous stone						
Manufacture of artificial stone	3	63	3	74	..	..
Rubble and riprap	133	291	44	94	..	..
Other uses	52	186	30	85	..	..
Crushed stone for						
Concrete aggregate	197	1 067	325	1 614	..	..
Asphalt aggregate	245	1 613	376	2 302	..	..
Road metal	968	4 836	1 218	5 366	..	..
Railroad ballast (includes traprock)	42	155	—	—	..	..
Other uses	1 323	6 691	1 464	6 999	..	..
Total	3 228	21 459	3 720	23 236	..	..

Source: Natural Resources Canada.

— Nil; .. Not available; ... Amount too small to be expressed; n.f. Not finished or dressed; <sup>p</sup> Preliminary.<sup>1</sup> Data exclude stone used in the Canadian cement industry. <sup>2</sup> Data include stone used in the Canadian cement industry.

Note: Numbers may not add to totals due to rounding.

**TABLE 7. CANADA, PRODUCTION OF SHALE,<sup>1</sup> 1997-99**

	1997		1998		1999 <sup>p</sup>	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
<b>BY PROVINCE/TERRITORY<sup>2</sup></b>						
Newfoundland	135	2 760	109	1 188	328	404
Nova Scotia	23	78	25	112	14	65
New Brunswick	42	140	131	723	307	1 879
Quebec	435	4 720	753	7 205	231	3 793
Manitoba	180	123	163	99	135	80
Alberta	48	81	47	1 260	8	1 100
British Columbia	19	174	34	510	35	515
Northwest Territories	55	75	205	4 056	195	4 164
Total	938	8 151	1 467	15 153	1 254	12 001
<b>BY USE<sup>3</sup></b>						
Dimensional stone						
Rough	2	2 418	11	2 098	..	..
Other (flagstone, curbstone, paving blocks, etc.)	7	2 632	7	3 107	..	..
Chemical and metallurgical						
Cement plants, Canada	275	680	233	695	..	..
Other chemical uses	987	3 289	890	4 107	..	..
Miscellaneous stone						
Rubble and riprap	68	108	5	13	..	..
Other uses	191	205	137	256	..	..
Crushed stone for						
Concrete aggregate	-	-	-	-	..	..
Asphalt aggregate	92	380	94	645	..	..
Road metal	208	1 022	642	3 162	..	..
Other uses	370	1 385	571	5 872	..	..
Total	2 200	12 119	2 590	19 954	..	..

Source: Natural Resources Canada.

- Nil; . . Not available; <sup>p</sup> Preliminary.<sup>1</sup> May include slate. <sup>2</sup> Data exclude stone used in the Canadian cement and clay industries. <sup>3</sup> Data include stone used in the Canadian cement and clay industries.

Note: Numbers may not add to totals due to rounding.

**TABLE 8. CANADA, PRODUCTION OF STONE BY TYPES,<sup>1</sup> 1985, 1990 AND 1997-99**

	1985		1990		1997		1998		1999 <sup>p</sup>	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
Granite	17 219	95 424	19 524	147 048	21 314	162 174	23 558	189 216	21 258	173 832
Limestone	77 874	317 862	86 519	470 649	72 882	419 322	79 058	456 951	77 045	482 865
Marble	571	13 966	771	19 555	941	33 222	1 168	43 704	1 297	42 461
Sandstone	3 011	15 310	2 975	20 534	3 190	21 293	3 673	22 923	3 173	21 209
Shale <sup>2</sup>	1 561	3 059	1 566	5 169	938	8 151	1 467	15 153	1 254	12 001
Total	100 236	445 622	111 355	663 254	99 265	644 162	108 924	727 947	104 026	732 369

Source: Natural Resources Canada.

<sup>p</sup> Preliminary.<sup>1</sup> Data exclude stone used in the Canadian cement, lime and clay industries. <sup>2</sup> May include slate.

Note: Numbers may not add to totals due to rounding.

**TABLE 9. CANADA, ROUGH GRANITE, SUMMARY OF PRODUCTION AND TRADE, 1980 AND 1985-99**

	Quantity Value	Production <sup>1</sup>	Imports <sup>2</sup>	Exports <sup>2</sup>
1980	t	81 000	24 130	5 019 <sup>a</sup>
	\$ millions	5.6	1.9	0.7
1985	t	104 000	34 468	12 511 <sup>a</sup>
	\$ millions	12.8	6.2	1.7
1986	t	121 000	33 994	18 450 <sup>a</sup>
	\$ millions	15.7	6.6	2.7
1987	t	112 000	46 370	37 450 <sup>a</sup>
	\$ millions	16.1	7.9	6.0
1988	t	153 000	46 282	86 940
	\$ millions	24.4	11.2	16.2 <sup>r</sup>
1989	t	162 000	52 337	107 105
	\$ millions	24.8	11.7	17.3
1990	t	166 000	46 149	79 640 <sup>r</sup>
	\$ millions	33.6	11.2	19.8 <sup>r</sup>
1991	t	122 000	35 038	91 630 <sup>r</sup>
	\$ millions	24.0	8.5	22.6
1992	t	127 000	44 951	94 530 <sup>r</sup>
	\$ millions	20.3	10.5	21.4
1993	t	134 000	41 484	88 830 <sup>r</sup>
	\$ millions	18.1	10.8	20.3
1994	t	112 000	35 619	95 000 <sup>r</sup>
	\$ millions	16.9	10.1	20.0
1995	t	158 000	41 099	94 200 <sup>r</sup>
	\$ millions	19.6	11.4	17.9
1996	t	163 000	53 543	97 700 <sup>r</sup>
	\$ millions	24.6	15.4	20.9
1997	t	161 000	54 639	80 194 <sup>r</sup>
	\$ millions	24.5	16.0	16.4
1998	t	163 000	75 186	69 937
	\$ millions	27.3	23.0	15.1
1999	t	175 000 <sup>e</sup>	68 770	73 327
	\$ millions	30.0	23.2	16.4

Sources: Natural Resources Canada; Statistics Canada.

<sup>e</sup> Estimated; <sup>r</sup> Assumes a factor of 2.7 for converting cubic metres to tonnes.

<sup>a</sup> Coded as building stone, rough (90% is considered to be granite).

<sup>1</sup> Includes rough stone for construction, monumental/ornamental and other uses.

<sup>2</sup> Includes codes 2516.11 (roughly trimmed block) and 2516.12 (cut block by sawing or otherwise). Some re-exports to the United States may also be involved.