

Mineral Aggregates

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Total Canadian shipments of regular-weight mineral aggregates in 2002 have been estimated to be 342 Mt, based on preliminary data, compared to 355 Mt in 2001, based on final data. Specifically, these data relate to the combined amounts of crushed stone, miscellaneous stone, and sand and gravel, essentially all for construction uses (Table 1, By Use, and Table 2, respectively). Relevant subtotals of shipments of crushed stone and miscellaneous stone by rock type, e.g., limestone, granite and other types of stone, are included in a separate commodity chapter entitled "Stone."

Ongoing investments related to the Strategic Infrastructure Foundation continued in 2002 with expectations that investments of about \$1.5 billion per year will continue through 2003 to assist large infrastructure projects and to encourage public-private partnerships. This funding program is in addition to the Infrastructure Canada Program, which has been allocated \$2.05 billion over six years (2000/01 to 2005/06). The latter is a cost-shared program expected to result in total construction-related spending of about \$6 billion when combined with contributions from other partners.

Exports of construction aggregates, mainly to the United States, are growing in importance in Atlantic Canada and in British Columbia. In the United States, the level of funding planned under the U.S. *Transportation Equity Act for the 21st Century* remains uncertain; however, this is not expected to affect export markets for strategically located producers in Canada.

Port au Port quarries announced plans to establish a dolomite/limestone operation at Aguathuna on the Port au Port Peninsula. Shipments of aggregates for construction, as well as for chemical and other uses, are planned in 2003.

The demand for construction aggregates in 2003 is expected to be about the same as in 2002 because of continued strength in residential construction and in non-residential building. The average unit values of construction aggregates shipped, as reported by producers, generally continued to increase in pace with the rate of inflation with selling prices varying considerably depending on proximity to consumers.

Information on lightweight aggregates, including ferrous slags, can be found in Tables 6-11, inclusive.

Notes: (1) For definitions and valuation of mineral production, shipments and trade, please refer to Chapter 64. (2) Information in this review was current as of June 2003. (3) This and other reviews, including previous editions, are available on the Internet at www.nrcan.gc.ca/mms/cmy/com_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.

TABLE 1. CANADA, STONE PRODUCTION, 2000-02

Item No.	2000		2001		2002 (p)	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
BY PROVINCE/TERRITORY (1)						
Newfoundland and Labrador	4 505	27 859	4 390	31 522	4 625	35 788
Nova Scotia	8 379	51 246	8 749	59 028	8 246	55 570
New Brunswick	3 294	19 429	4 204	20 073	3 178	19 074
Quebec	31 550	229 984	36 436	266 536	35 363	256 549
Ontario	58 704	474 155	57 969	501 956	55 633	514 805
Manitoba	4 007	19 688	3 744	17 837	3 744	18 558
Saskatchewan	x	x	x	x	x	x
Alberta	x	x	478	5 599	335	4 445
British Columbia	6 636	49 172	7 212	51 412	7 171	60 179
Northwest Territories	186	2 952	1 577	3 085	818	6 854
Total	118 222	881 260	124 758	957 048	119 113	971 822
BY USE (2)						
Stone (Dimension)						
Dimension stone						
Rough	360	50 388	363	53 760	..	..
Monumental and ornamental stone (n.f.)	111	10 598	106	9 323	..	..
Other (flagstone, curbstone, paving blocks, etc.)	105	16 311	110	16 136	..	..
Total dimension stone	576	77 297	579	79 219	..	..
Stone (Crushed)						
Crushed stone for						
Concrete aggregate	21 830	131 073	21 502	148 723	..	..
Asphalt aggregate	11 509	72 753	12 152	79 648	..	..
Road metal	36 478	192 907	37 792	203 984	..	..
Railroad ballast (includes traprock)	1 681	14 375	1 475	12 824	..	..
Other uses	36 061	201 603	41 693	236 138	..	..
Chemical and metallurgical						
Cement plants, Canada	14 776	44 570	15 548	50 300	..	..
Cement plants, foreign	539	2 273	454	2 051	..	..
Flux in iron and steel furnaces	680	6 279	477	3 275	..	..
Flux in nonferrous smelters	100	1 519	145	1 969	..	..
Glass factories	51	738	44	591	..	..
Lime plants, Canada	3 184	19 513	2 970	17 279	..	..
Lime plants, foreign	1 437	8 586	1 825	13 328	..	..
Pulp and paper mills	118	1 271	69	642	..	..
Sugar refineries	-	-	-	-	..	..
Other chemical uses	1 763	12 777	1 767	10 657	..	..
Miscellaneous stone						
Manufacture of artificial stone	2	68	2	60	..	..
Roofing granules	873	37 348	854	40 426	..	..
Poultry grit	173	1 427	232	2 520	..	..
Stucco dash	23	3 985	20	4 452	..	..
Terrazzo chips	9	666	6	586	..	..
Rock wool	25	431	30	430	..	..
Rubble and riprap	1 257	4 476	867	3 650	..	..
Other uses	1 562	8 245	1 591	10 313	..	..
Pulverized stone						
Whiting	44	3 971	37	3 258	..	..
Asphalt filler	200	363	126	125	..	..
Dusting coal mines	1	51	1	89	..	..
Agricultural purposes and fertilizer plants	1 113	18 500	847	13 170	..	..
Other uses	1 064	82 428	1 259	88 782	..	..
Total crushed stone	136 554	872 196	143 783	949 271	..	..
Total all stone	137 130	949 493	144 362	1 028 490	..	..

Source: Natural Resources Canada.

- Nil; .. Not available; n.f. Not finished or dressed; (p) Preliminary; x Confidential.

(1) Data exclude stone used in the Canadian cement, lime and clay industries. (2) Data include stone used in the Canadian cement, lime and clay industries.

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

TABLE 4. CANADA, EXPORTS AND IMPORTS OF SAND AND GRAVEL AND CRUSHED STONE, 2000-02

Item No.	2000		2001		2002 (p)		
	(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)	
EXPORTS							
2505.90	Natural sands n.e.s., excluding metal-bearing sands						
	United States	456 377	4 736	512 754	4 266	1 017 546	9 156
	Bahamas	61 811	1 258	—	—	67 829	1 923
	Bermuda	—	—	—	—	11 571	232
	Chile	—	—	231	82	39	14
	St. Pierre and Miquelon	—	—	—	—	36	7
	France	—	—	—	—	10	4
	Germany	—	—	—	—	1	...
	Argentina	313	67	—	—	—	—
	Philippines	201	30	—	—	—	—
	Trinidad and Tobago	202	33	99	17	—	—
	Venezuela	455	99	—	—	—	—
	Cayman Islands	—	—	37 307	789	—	—
	Mexico	—	—	2	...	—	—
	Total	519 359	6 223	550 393	5 154	1 097 032	11 336
2517.10	Pebbles, gravel, broken or crushed stone used for aggregates, etc.						
	United States	3 130 583	31 944	4 884 125	48 362	5 078 843	62 467
	Barbados	—	—	27 644	757	10 126	139
	Japan	6	47	—	—	4 249	111
	Hong Kong	—	—	—	—	6 320	49
	Saudi Arabia	—	—	—	—	28	—
	Spain	—	—	—	—	1	—
	Vietnam	—	—	—	—	227	—
	Bahamas	47 239	1 079	—	—	—	—
	Bermuda	18 965	191	—	—	—	—
	Jamaica	44 631	931	—	—	—	—
	Panama	536 580	1 258	—	—	—	—
	France	—	—	5	11	—	—
	Venezuela	—	—	13	...	—	—
	Total	3 778 004	35 450	4 911 787	49 130	5 099 794	62 766
2517.41	Marble granules, chippings and powder of 25.15 or 25.16, heat-treated or not						
	United States	347 873	56 015	49 078	8 983	32 365	6 864
2517.49	Granules, chippings and powder, n.e.s., of 25.15 or 25.16, heat-treated or not						
	United States	100 810	6 089	9 347	612	4 692	434
	Other countries	43	14	26 173	657	30	12
	Total	100 853	6 103	35 520	1 269	4 722	446
2518.10	Dolomite, not calcined						
	United States	2 800 364	28 836	2 872 450	30 076	3 095 736	34 002
	Venezuela	423 821	4 436	318 247	3 414	297 485	2 997
	Mexico	311 456	2 771	142 974	1 336	134 722	1 258
	Trinidad and Tobago	109 469	1 976	38 738	740	84 517	995
	Brazil	26 445	161	—	—	—	—
	Romania	73	14	91	18	—	—
	Total	3 671 628	38 194	3 372 500	35 584	3 612 460	39 252
2518.20	Calcined dolomite						
	United States	15 749	4 112	11 134	4 648	9 785	1 214

TABLE 4 (cont'd)

Item No.	2000		2001		2002 (p)		
	(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)	
EXPORTS (cont'd)							
2521.00	Limestone flux; limestone and other calcareous stone used for lime or cement						
	United States	2 856 799	18 632	2 360 689	15 517	2 713 242	18 191
	Mexico	35 322	293	61 543	531	91 616	989
	China	-	-	-	-	10 671	430
	Sweden	-	-	-	-	509	2
	Cuba	-	-	237	...	-	-
	India	-	-	4 694	24	-	-
	Total	2 892 121	18 925	2 427 163	16 072	2 816 038	19 612
IMPORTS							
2505.90	Natural sands n.e.s., excluding metal-bearing sands						
	United States	322 305	9 110	131 671	7 286	65 644	6 883
	China	492	128	1 274	308	1 134	392
	South Africa	171	30	15 820	1 836	2 308	338
	Australia	59	13	1 349	80	434	113
	United Kingdom	168	41	144	25	146	30
	Philippines	239	51	216	44	55	23
	Other countries	2 656	108	351	60	170	25
	Total	326 090	9 481	150 825	9 639	69 891	7 804
2517.10	Pebbles, gravel, broken or crushed stone used for aggregates, etc.						
	United States	3 085 293	16 859	3 106 549	16 493	3 310 507	19 278
	Israel	18 364	74	50 045	216	48 830	338
	China	8 976	137	16 939	227	6 478	128
	India	36	1	143	18	284	62
	Philippines	2 527	48	1 237	13	3 271	32
	Brazil	280	3	261	26	192	27
	France	1 979	20	5 683	35	1 717	17
	Other countries	9 823	172	38 820	276	1 708	29
	Total	3 127 278	17 314	3 219 677	17 304	3 372 987	19 911
2517.20	Macadam of slag, dross or similar industrial waste, etc.						
	United States	30 179	229	7 628	56	2 613	17
	Other countries	1 464	11	99	1	614	2
	Total	31 643	240	7 727	57	3 227	19
2517.30	Tarred macadam						
	United States	158	7	539	22	259	12
2517.41	Marble granules, chippings and powder of 25.15 or 25.16, heat-treated or not						
	United States	58 918	10 395	73 320	15 546	82 749	16 944
	Italy	187	22	75	12	104	16
	Other countries	96	18	22	4	16	2
	Total	59 201	10 435	73 417	15 562	82 869	16 962
2517.49	Granules, chippings and powder, n.e.s., of 25.15 or 25.16, heat-treated or not						
	United States	28 480	1 614	25 437	1 519	25 635	2 196
	France	210	25	1 027	80	315	36
	Spain	-	-	-	-	223	29
	Brazil	545	35	420	29	328	29
	Other countries	823	56	975	63	841	50
	Total	30 058	1 730	27 859	1 691	27 342	2 340

TABLE 4 (cont'd)

Item No.	2000		2001		2002 (p)		
	(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)	
IMPORTS (cont'd)							
2518.10	Dolomite, not calcinated						
	United States	4 784	866	3 579	698	2 566	534
	United Kingdom	27	3	–	–	32	9
	Italy	–	–	–	–	24	8
	Canada	52	19	–	–	36	4
	Other countries	3	...	17	3	11	3
	Total	4 866	888	3 596	701	2 669	558
2518.20	Calcined dolomite						
	United States	3 810	761	19 436	2 683	46 590	6 936
	Italy	–	–	–	–	25	18
	Canada	320	35	–	–	–	–
	Total	4 130	796	19 436	2 683	46 615	6 954
2518.30	Agglomerated dolomite (including tarred dolomite)						
	United States	556	181	556	187	857	307
	Austria	102	37	70	25	149	54
	Other countries	1	...	–	–	25	11
	Total	659	218	626	212	1 031	372
2521.00	Limestone flux; limestone and other calcareous stone used for lime or cement						
	United States	4 026 594	17 806	4 163 352	19 771	1 291 078	20 817
	Italy	24 564	155	6 300	19	339	28
	Total	4 133 904	18 125	4 180 230	19 835	1 298 610	20 909

Source: Statistics Canada.

– Nil; ... Amount too small to be expressed; n.e.s. Not elsewhere specified; (p) Preliminary.

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

TABLE 5. LIGHTWEIGHT AGGREGATE PRODUCERS IN CANADA, 2001

Company	Location	Commodity	Remarks
ATLANTIC PROVINCES			
Fafard Peat Moss Company Ltd.	Inkerman, N.B.	Perlite, vermiculite	Processed for use in horticulture.
Le Groupe Berger Ltée	Escuminac, N.B.	Vermiculite	Processed for use in horticulture.
Sun Gro Horticulture Canada Ltd.	Maisonnette, N.B.	Perlite	Processed for use in horticulture.
QUEBEC			
Le Groupe Berger Ltée Normiska Corp.	Saint-Modeste Lachine (plant)	Perlite, vermiculite Vermiculite, perlite	Processed for use in horticulture. Vermiculite processed for use in loose insulation, horticulture and concrete products. Perlite processed for use in horticulture.
Premier Horticulture Perlite Canada Inc.	Rivière-du-Loup Baie-du-Febvre	Perlite, vermiculite Perlite, vermiculite	Processed for use in horticulture. Processed for use in horticulture.
ONTARIO			
Grace Canada, Inc.	Ajax	Vermiculite, perlite	Vermiculite processed for use in horticulture, as loose insulation, and in friction materials. Perlite processed for use in gypsum plaster, horticulture, refractories and as loose insulation.
Lafarge Canada Inc., Hamilton Slag Division	Hamilton	Slag	Used in concrete products industry.
PRAIRIE PROVINCES			
Cindercrete Products Ltd. Grace Canada, Inc.	Saskatoon, Sask. Winnipeg, Man.	Expanded clay Vermiculite, perlite	Processed for concrete products industry. Perlite processed for use in gypsum plaster, loose insulation and in horticulture.
	Edmonton, Alta.	Vermiculite, perlite	Vermiculite processed for use in horticulture and in friction material and loose insulation.
Inland Cement Limited	Calgary, Alta. Edmonton, Alta.	Expanded shale Expanded clay	Plant closed in 2002. Processed for concrete products industry, and for loose insulation.
Sun Gro Horticulture Canada Ltd.	Elma, Man. Seba Beach, Alta.	Perlite Perlite	Processed for use in horticulture. Processed for use in horticulture.
BRITISH COLUMBIA			
Canada Pumice Corporation	Quesnel	Pumice, shale	A range of pumice and shale products for construction and landscaping material.
Great Pacific Pumice Inc.	Mt. Meager	Pumice	Used in horticulture, concrete products industry and as loose insulation.
Ocean Concrete Products Limited	Vancouver	Pumice	Purchased for concrete products industry.

Source: Natural Resources Canada, reported from NRCan 2001 annual survey questionnaire "Production of Lightweight Aggregates in Canada."

TABLE 6. CANADA, IMPORTS AND EXPORTS OF VERMICULITE, PERLITE AND PUMICE, 2000-02

Item No.		2000		2001		2002 (p)	
		(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)
EXPORTS							
2513.11	Pumice stone, crude or in irregular pieces, including crushed pumice						
	United States	-	-	-	-	27	10
	Colombia	-	-	-	-	1	1
	Total	-	-	-	-	28	11
2513.19	Pumice stone, other						
	United States	-	-	...	5	-	-
2530.10	Vermiculite, perlite and chlorites, unexpanded						
	United States	34	17	-	-	47	49
	South Korea	-	-	-	-	28	20
	Chile	14	8	24	13	4	3
	Saint Vincent and the Grenadines	-	-	-	-	1	...
	Trinidad and Tobago	1	...	-	-	0	-
	Dominican Republic	-	-	5	10	-	-
	Total	49	25	29	23	80	72
6806.20	Exfoliated vermiculite, expanded clays, foamed slag and similar expanded mineral materials (including intermixtures thereof)						
	United States	2 308	1 577	2 248	1 699	1 682	1 361
	Czech Republic	-	-	1	3	-	-
	Total	2 308	1 577	2 249	1 702	1 682	1 361
IMPORTS							
2513.11	Pumice stone, crude or in irregular pieces, including crushed pumice						
	United States	4 985	804	5 841	742	5 277	695
	Turkey	5 298	684	3 423	344	3 881	393
	Other countries	149	26	81	18	24	8
	Total	10 432	1 514	9 345	1 104	9 182	1 096
2513.19	Pumice stone, other						
	United States	3 817	677	3 302	643	5 236	921
	Taiwan	89	22	37	11	378	106
	South Korea	170	46	545	71	246	55
	Russia	140	46	-	-	167	43
	Other countries	417	90	574	126	1 424	169
	Total	4 633	881	4 458	851	7 451	1 294
2530.10.00.10	Vermiculite, unexpanded						
	South Africa	11 115	2 663	22 090	5 631	15 713	4 266
	United States	16 583	(r) 2 929	14 742	2 967	14 593	3 037
	Zimbabwe	-	-	-	-	4 630	947
	Other countries	1 247	223	1 214	192	365	84
	Total	28 945	(r) 5 815	38 046	8 790	35 301	8 334
2530.10.00.20	Perlite, unexpanded						
	United States	27 854	4 961	29 754	5 876	28 343	5 234
	Greece	20 974	2 554	37 589	3 859	44 495	4 002
	Other countries	24	10	-	-	1	...
	Total	48 852	7 525	67 343	9 735	72 839	9 236

TABLE 6 (cont'd)

Item No.	2000		2001		2002 (p)	
	(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)
IMPORTS (cont'd)						
3802.90.00.20	Activated perlite, excluding expanded perlite ground to be employed in filtering					
	United States					
	503	288	638	365	268	145
	Total					
	503	288	638	365	268	145
6806.20.00.10	Exfoliated (expanded) vermiculite					
	United States					
	439	(r) 1 608	388	1 391	696	2 162
	Other countries					
	1	4	17	42	10	37
	Total					
	440	(r) 1 612	405	1 433	706	2 199
6806.20.00.20	Expanded perlite					
	United States					
	9 636	6 766	10 076	7 427	10 227	7 800
	Other countries					
	9	4	25	41	54	51
	Total					
	9 645	6 770	10 101	7 468	10 281	7 851

Source: Statistics Canada.

– Nil; . . . Amount too small to be expressed; (p) Preliminary; (r) Revised.

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

TABLE 7. CANADA, LIGHTWEIGHT AGGREGATES PRODUCED, SOLD AND USED, 2000 AND 2001

	2000				2001 (p)			
	Produced		Sold and Used		Produced		Sold and Used	
	(m ³)	(\$)	(m ³)	(\$)	(m ³)	(\$)	(m ³)	(\$)
FROM DOMESTIC AND/OR IMPORTED RAW MATERIALS								
Expanded clay, shale and slag (1)	392 029	11 018 236	389 398	10 873 433	352 079	9 869 742	374 407	11 176 563
FROM IMPORTED CRUDE MATERIALS								
Expanded perlite and exfoliated vermiculite (1)	675 602	38 778 030	708 095	41 036 475	714 635	52 088 769	750 585	54 811 035
Total	1 067 631	49 796 266	1 097 493	51 909 908	1 066 714	61 958 511	1 124 992	65 987 598

Source: Natural Resources Canada, reported from NRCan survey questionnaire "Production of Lightweight Aggregates in Canada" (see Table 5 for list of establishments surveyed).

(p) Preliminary.

(1) Combined to avoid disclosing confidential company data.

TABLE 8. CANADA, SALES OF EXPANDED SLAG, PERCENTAGE BY END USE, 1999-2001

Use	1999	2000	2001
	(%)		
Concrete block manufacture	90.0	90.0	80.0
Ready-mix concrete	10.0	10.0	10.0
Miscellaneous uses	–	–	10.0

Source: Natural Resources Canada, reported from NRCan survey questionnaire "Production of Lightweight Aggregates in Canada."

– Nil.

Notes: See Table 5 for list of establishments surveyed. Sales also imply quantities consumed for own use.

TABLE 9. CANADA, SALES OF EXPANDED CLAY AND SHALE, PERCENTAGE BY END USE, 1999-2001

Use	1999	2000	2001
	(%)		
Concrete block manufacture	52.7	50.1	54.1
Loose insulation	43.4	43.2	42.7
Precast concrete manufacture	2.0	2.0	1.7
Ready-mix concrete	2.0	0.7	1.2
Horticulture and miscellaneous uses	–	4.0	0.3

Source: Natural Resources Canada, reported from NRCan survey questionnaire "Production of Lightweight Aggregates in Canada."

– Nil.

Notes: See Table 5 for list of establishments surveyed. Sales also imply quantities consumed for own use.

TABLE 10. CANADA, SALES OF EXPANDED PERLITE, PERCENTAGE BY END USE, 1999-2001

Use	1999	2000	2001
	(%)		
Horticulture and agriculture	93.9	94.0	94.4
Loose insulation and miscellaneous uses	5.7	5.5	4.9
Insulation in gypsum products	0.4	0.5	0.7
in other construction materials	–	–	2.3

Source: Natural Resources Canada, reported from NRCan survey questionnaire "Production of Lightweight Aggregates in Canada."

– Nil.

Notes: See Table 5 for list of establishments surveyed. Sales also imply quantities consumed for own use.

TABLE 11. CANADA, SALES OF EXPANDED VERMICULITE, PERCENTAGE BY END USE, 1999-2001

Use	1999	2000	2001 (p)
	(%)		
Horticulture	78.9	84.8	83.4
Loose insulation	2.6	3.0	4.3
Miscellaneous uses	18.5	12.2	12.2

Source: Natural Resources Canada, reported from NRCan survey questionnaire "Production of Lightweight Aggregates in Canada."

(p) Preliminary.

Notes: See Table 5 for list of establishments surveyed. Sales also imply quantities consumed for own use.