

Mineral Aggregates

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Total Canadian shipments of mineral aggregates (mostly crushed stone, and sand and gravel, but excluding limestone used to process cement and lime) amounted to approximately 289 Mt in 1998. This amount is about 8% lower than in 1997, based on preliminary figures.

Increased demand for aggregates is expected in 1999 based on expansions in the residential and non-residential construction sectors. Unit values generally continued to increase in pace with the rate of inflation, with selling prices varying considerably depending on proximity to consumers. Additional detailed information relating to all types of stone, including limestone, granite, marble, sandstone and shale, is included in a separate chapter entitled *Stone*. Tariffs for nearly all stone products are free; details are listed in the *Stone* chapter.

The \$6 billion cost-shared program for infrastructure renewal, supported by all three levels of government, has contributed to total construction activity in Canada. Related program expenditures will be discontinued in the 1998/99 fiscal year.

Trade in aggregates, mainly with the United States, is minimal in most regions of Canada. However, the new six-year *Transportation Equity Act for the 21st Century* is expected to result in additional export opportunities for some strategically located Canadian quarries.

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, 1999.

TABLE 1. CANADA, TOTAL PRODUCTION OF STONE, 1996-98

	1996		1997		1998p	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
BY PROVINCE¹						
Newfoundland	1 652r	15 442r	2 336	20 974	2 056	17 361
Nova Scotia	6 260	35 726	7 764	45 523	5 768	34 556
New Brunswick	4 691	23 539	3 934	20 293	3 175	19 256
Quebec	30 008r	188 855r	29 043	187 544	28 609	192 871
Ontario	39 620	267 710	44 839	299 792	45 304	307 677
Manitoba	3 298	14 422	4 249	18 718	4 181	19 983
Alberta	549	6 174	591	6 698	537	6 274
British Columbia	6 050	39 483	6 266	43 497	6 125	47 086
Northwest Territories and Yukon	203	1 195	243	1 123	244	1 132
Total	92 331r	592 547r	99 265	644 162	95 998	646 198
BY USE²						
Dimensional stone						
Rough	232	28 853	285	30 799	..	..
Monumental and ornamental stone (n.f.)	53	7 111	54	6 356	..	..
Other (flagstone, curbstone, paving blocks, etc.)	39	3 327	54	6 186	..	..
Lining open-hearth furnaces	-	-	-	-	..	..
Chemical and metallurgical						
Cement plants, Canada	14 390	44 589	14 731	45 065	..	..
Cement plants, foreign	1 725	7 477	1 747	8 234	..	..
Flux in iron and steel furnaces	297	2 178	332	2 154	..	..
Flux in nonferrous smelters	164	915	158	1 046	..	..
Glass factories	146	2 700	181	2 850	..	..
Lime plants, Canada	4 828	27 045	4 285	26 276	..	..
Lime plants, foreign	115	700	447	2 503	..	..
Pulp and paper mills	134	1 558	117	1 216	..	..
Sugar refineries	16	68	-	1	..	..
Other chemical uses	1 570	9 638	1 902	11 854	..	..
Pulverized stone						
Whiting	40	2 879	44	3 250	..	..
Asphalt filler	139	198	164	226	..	..
Dusting coal mines	4	233	4	286	..	..
Agricultural purposes and fertilizer plants	946	15 545	1 078	15 617	..	..
Other uses	847	26 949	875	32 838	..	..
Miscellaneous stone						
Manufacture of artificial stone	465	2 182	8	291	..	..
Roofing granules	487	22 609	450	21 290	..	..
Poultry grit	133	1 595	167	1 848	..	..
Stucco dash	19	3 201	20	2 355	..	..
Terrazzo chips	4	365	4	179	..	..
Rock wool	4	29	34	571	..	..
Rubble and riprap	1 163	6 057	693	3 032	..	..
Other uses	1 416	11 443	1 869	16 489	..	..
Crushed stone for						
Concrete aggregate	9 803	56 521	12 631	72 511	..	..
Asphalt aggregate	10 681	60 754	12 559	75 803	..	..
Road metal	36 480	189 602	35 137	180 657	..	..
Railroad ballast (includes traprock)	1 393	11 090	1 563	13 783	..	..
Other uses	24 675	119 843	27 674	133 230	..	..
Total	112 409	667 254	119 267	718 792	..	..

Sources: Natural Resources Canada; Statistics Canada.

.. Not available; n.f. Not finished or dressed; p Preliminary.

¹ Data exclude stone used in the Canadian cement and lime industries. ² Data include stone used in the Canadian cement and lime industries.

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

TABLE 2. CANADA, PRODUCTION OF SAND AND GRAVEL¹ BY PROVINCE, 1996-98

	1996		1997		1998 ^p	
	(000 t)	(\$000)	(000 t)	(\$000)	(000 t)	(\$000)
Newfoundland	2 010	11 269	2 426	11 719	2 430	11 762
Prince Edward Island	316	1 277	240	1 006	240	1 006
Nova Scotia	4 245	16 190	3 236	13 921	3 263	13 925
New Brunswick	4 288	x	4 183	x	4 075	x
Quebec	29 537	81 944	31 274	82 562	24 439	67 881
Ontario	86 571	321 079	90 515	337 137	91 308	342 559
Manitoba	8 803	x	10 798	x	10 497	x
Saskatchewan	9 279	x	10 750	x	10 933	x
Alberta	30 141	118 221	36 607	147 200	36 777	154 457
British Columbia	35 674	149 741	32 999	151 869	31 345	146 223
Yukon	1 309	4 984	914	3 045	868	2 932
Northwest Territories	1 657	6 488	1 553	3 963	1 475	3 816
Total	213 831	772 590	225 495	829 190	217 650	819 893

Source: Natural Resources Canada.

^p Preliminary; x Confidential.

¹ Production represents shipments of natural gravel, sand and crushed gravel. Does not include shipments to Canadian cement plants.

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

TABLE 3. AVAILABLE DATA ON CONSUMPTION OF SAND AND GRAVEL, BY PROVINCE, 1996 AND 1997

		Atlantic Provinces	Quebec	Ontario	Western Provinces ¹	Canada
		(000 tonnes)				
Road bed, surface	1996	6 078	17 717	45 854	44 368	114 017
	1997	5 281	19 091	44 020	47 896	116 287
Roads, ice control	1996	472	988	2 686	1 641	5 786
	1997	329	1 007	2 515	1 334	5 184
Concrete aggregate	1996	1 447	3 067	10 349	13 287	28 150
	1997	1 587	3 461	12 831	14 650	32 530
Asphalt aggregate	1996	1 246	3 527	7 022	6 987	18 782
	1997	1 035	3 260	8 497	7 195	19 987
Railroad ballast	1996	170	30	12	362	574
	1997	5	2	6	319	332
Mortar sand	1996	58	233	756	247	1 295
	1997	32	337	919	261	1 549
Backfill for mines	1996	...	38	1 483	84	1 606
	1997	...	38	1 299	168	1 504
Fill	1996	836	1 873	7 671	6 137	16 517
	1997	1 100	1 796	7 776	7 834	18 506
Other purposes	1996	604	2 064	11 183	14 310	28 162
	1997	755	2 282	12 814	14 177	30 029
Total	1996	10 911	29 537	87 017	87 423	214 889
	1997	10 123	31 274	90 677	93 834	225 908

Source: Natural Resources Canada.

... Amount too small to be expressed.

¹ The western provinces include the Yukon and Northwest Territories.

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

TABLE 4. CANADA, EXPORTS AND IMPORTS OF SAND AND GRAVEL AND CRUSHED STONE, 1996-98

Item No.	1996		1997		1998P		
	(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)	
EXPORTS							
2505.90	Natural sands n.e.s., excluding metal-bearing sands						
	United States	123 235	1 771	298 640	2 856	333 040	3 735
	Thailand	-	-	-	-	11 594	116
	Bermuda	18 748	201	13 352	241	7 691	76
	Bahamas	51 407	1 271	27 182	507	-	-
	France	-	-	5 948	46	-	-
	Jamaica	-	-	101 178	2 033	-	-
	Other countries	2 682	221	-	-	252	92
	Total	196 072	3 464	446 300	5 683	352 577	4 019
2517.10	Pebbles, gravel, broken or crushed stone used for aggregates, etc.						
	United States	2 625 312	19 227	3 102 466	24 140	3 068 452	27 365
	Bahamas	-	-	18 261	412	34 021	727
	Bermuda	17 912	298	13 155	129	25 927	462
	Suriname	-	-	-	-	32 620	414
	Guyana	-	-	16 832	173	19 181	231
	Turkey	9 245	66	2 341	188	-	-
	Estonia	-	-	501	220	-	-
	Other countries	93 154	488	75 456	454	14 712	111
	Total	2 745 623	20 079	3 229 012	25 716	3 194 913	29 310
2517.41	Marble granules, chippings and powder of 25.14 or 25.16, heat-treated or not						
	United States	31 778	3 556	128 601	17 558	244 565	27 251
	France	-	-	1 178	135	8	24
	Norway	-	-	5 587	582	-	-
	Total	31 778	3 556	135 366	18 275	244 573	27 275
2517.49	Granules, chippings and powder, n.e.s., of 25.15 or 25.16, heat-treated or not						
	United States	113 179	697	1 311	118	1 638	158
	Other countries	-	-	154	20	94	48
	Total	113 179	697	1 465	138	1 732	206
2518.10	Dolomite, not calcined						
	United States	592 098	3 956	707 573	4 489	967 762	9 075
	Trinidad and Tobago	25 292	292	-	-	-	-
	Other countries	2	12	228	59	-	-
	Total	617 392	4 260	707 801	4 548	967 762	9 075
2518.20	Calcined dolomite						
	United States	33 827	6 346	33 620	6 390	32 515	6 459
	Venezuela	26 422	887	26 602	355	-	-
	Trinidad and Tobago	-	-	50 559	670	-	-
	Other countries	562	135	40	11	-	-
	Total	60 811	7 368	110 821	7 426	32 515	6 459
2518.30	Agglomerated dolomite (including tarred dolomite)						
	Other countries	-	-	-	-	-	-
	Total	-	-	-	-	-	-
2521.00	Limestone flux; limestone and other calcareous stone used for lime or cement						
	United States	2 408 555	14 577	2 523 677	14 552	2 765 101	21 587
	Other countries	810	4	-	-	20	15
	Total	2 409 365	14 581	2 523 677	14 552	2 765 121	21 602
IMPORTS							
2505.90	Natural sands n.e.s., excluding metal-bearing sands						
	United States	227 944	4 734	288 537	6 568	310 396	8 395
	India	-	-	-	-	414	66
	United Kingdom	1 628	46	1 239	42	2 632	58
	France	128	36	13	3	146	47
	Philippines	193	6	55	26	111	42
	Australia	186	53	467	131	356	26
	Other countries	544r	81r	6 076	61	280	47
	Total	230 623r	4 956r	296 387	6 831	314 335	8 681

TABLE 4 (cont'd)

Item No.	1996		1997		1998P		
	(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)	
IMPORTS (cont'd)							
2517.10	Pebbles, gravel, broken or crushed stone used for aggregates, etc.						
	United States	3 321 390 ^r	16 545 ^r	3 278 576	17 240	3 219 228	18 764
	China	—	—	6 207	54	16 077	141
	United Kingdom	1 538	23	1 880	26	461	28
	Philippines	—	—	1 072	11	1 508	18
	Other countries	2 939	48	1 467	55	2 890	34
	Total	3 325 867 ^r	16 616 ^r	3 293 202	17 386	3 240 164	18 985
2517.20	Macadam of slag, dross or similar industrial waste, etc.						
	United States	—	—	907	3	5 745	45
	Other countries	—	—	162	1	133	1
	Total	—	—	1 069	4	5 878	46
2517.30	Tarred macadam						
	United States	7	1	550	26	1 149	47
	Total	7	1	550	26	1 149	47
2517.41	Marble granules, chippings and powder of 25.15 or 25.16, heat-treated or not						
	United States	68 167	9 674	78 568	12 646	103 938	17 120
	France	174	34	373	44	181	38
	Other countries	129	21	163	25	59	12
	Total	68 470	9 729	78 104	12 715	104 178	17 170
2517.49	Granules, chippings and powder, n.e.s., of 25.15 or 25.16, heat-treated or not						
	United States	146 632	1 707	77 198	1 906	38 485	1 588
	Greece	—	—	—	—	1 334	72
	France	4 025	233	527	60	570	68
	Brazil	30	4	21	2	103	10
	Mexico	64 555	1 001	9	1	33	3
	Other countries	62	7	242	17	51	3
	Total	215 304	2 952	77 997	1 986	40 576	1 744
2518.10	Dolomite, not calcined						
	United States	3 150	459	2 711	504	2 634	499
	Other countries	—	—	8	2	10	2
	Total	3 150	459	2 719	506	2 644	501
2518.20	Calcined dolomite						
	United States	4 113	866	6 459	952	2 946	584
	Canada	—	—	—	—	143	13
	Total	4 113	866	6 459	952	3 089	597
2518.30	Agglomerated dolomite (including tarred dolomite)						
	United States	22	12	10	4	100	28
	Total	22	12	10	4	100	28
2521.00	Limestone flux; limestone and other calcareous stone used for lime or cement						
	United States	2 523 290	13 334	3 210 105	15 160	3 868 166	17 656
	Other countries	38 597	127	7 467	36	11 592	33
	Total	2 561 887	13 461	3 217 572	15 196	3 879 758	17 689

Source: Statistics Canada.

— Nil; . . . Amount too small to be expressed; n.e.s. Not elsewhere specified; P Preliminary; r Revised.

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

TABLE 5. LIGHTWEIGHT AGGREGATE PRODUCERS IN CANADA, 1997

Company	Location	Commodity	Remarks
ATLANTIC PROVINCES			
Fafard Peat Moss Company Ltd.	Shippagan, N.B.	Perlite, vermiculite	Processed for use in horticulture.
Sun Gro Horticulture Canada Ltd.	Maisonnette, N.B.	Perlite	Processed for use in horticulture.
QUEBEC			
Premier Peat Moss Ltd.	Rivière du Loup	Perlite, vermiculite	Processed for use in horticulture.
Vermi-lite Inc.	Baie-du-Febvre	Perlite, vermiculite	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.
National Slag Limited	Hamilton	Slag	Used in concrete products industry and as fill.
V.I.L. Vermiculite Inc.	Woodbridge Lachine, Que. (plant)	Vermiculite, perlite	Vermiculite processed for use in loose insulation, horticulture and concrete products. Perlite processed for use in horticulture.
PRAIRIE PROVINCES			
Cindercrete Products Limited	Saskatoon, Sask.	Expanded clay	Processed for concrete products industry.
Grace Canada, Inc.	Winnipeg, Man.	Vermiculite, perlite	Perlite processed for use in gypsum plaster and in horticulture.
	Edmonton, Alta.	Vermiculite, perlite	Vermiculite processed for use in horticulture and as loose insulation.
Inland Cement Limited	Calgary, Alta.	Expanded shale	Processed for concrete products industry and for loose insulation.
	Edmonton, Alta.	Expanded clay	Processed for concrete products industry, loose insulation, and horticulture.
Sun Gro Horticulture Canada Ltd.	Elma, Man.	Perlite	Processed for use in horticulture.
Sun Gro Horticulture Canada Ltd.	Seba Beach, Alta.	Perlite, pumice	Processed for use in horticulture.
BRITISH COLUMBIA			
Canada Pumice Corporation	Abbotsford	Pumice	A range of pumice products for construction.
Great Pacific Pumice Inc.	Vancouver	Pumice	Used in horticulture and concrete products industry.
Ocean Construction Supplies Limited	Vancouver	Pumice	Purchased for concrete products industry.

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

TABLE 6. CANADA, IMPORTS AND EXPORTS OF VERMICULITE, PERLITE AND PUMICE, 1996-98

Item No.		1996		1997		1998 ^p	
		(tonnes)	(\$000)	(tonnes)	(\$000)	(tonnes)	(\$000)
EXPORTS							
2513.11	Pumice stone, crude or in irregular pieces, including crushed pumice						
	United States	84	18	170	31	443	76
	Total	84	18	170	31	443	76
2513.19	Pumice stone, other						
	United States	-	-	21	4	-	-
	Total	-	-	21	4	-	-
IMPORTS							
2513.11	Pumice stone, crude or in irregular pieces, including crushed pumice						
	United States	3 338	599	4 182	643	4 841	756
	Turkey	4 345	646	5 076	700	3 450	528
	Greece	96	12	26	2	337	94
	Other countries	224	47	58	14	435	89
	Total	8 003	1 304	9 342	1 359	9 063	1 467
2513.19	Pumice stone, other						
	United States	2 981	872	2 364	482	2 815	578
	Other countries	1 103	226	458	99	574	117
	Total	4 084	1 098	2 822	581	3 389	695
2530.10.00.10 ^a	Vermiculite, unexpanded						
	South Africa	12 407	2 806	13 115	3 029	12 293	3 110
	United States	8 010	1 391	9 044	1 479	10 894	1 806
	Greece	3 327	292	3 332	320	3 518	333
	Other countries	1 400	228	-	-	60	12
	Total	25 144	4 717	25 491	4 828	26 765	5 261
2530.10.00.20 ^b	Perlite, unexpanded						
	United States	32 506	4 670	30 340	4 764	27 157	5 058
	Greece	5 993	548	12 413	1 259	17 094	2 037
	Other countries	600	40	28	3	3	...
	Total	39 099	5 258	42 781	6 026	44 254	7 095
3802.90.00.20 ^c	Activated perlite, excluding expanded perlite ground to be employed in filtering						
	United States	115	83	350	235	413	219
	Other countries	-	-	38	42	-	-
	Total	115	83	388	277	413	219
6806.20.00.10	Exfoliated (expanded) vermiculite						
	United States	201	430	225	661	326	1 237
	South Africa	5	10	1	2	2	5
	Total	206	440	226	663	328	1 242
6806.20.00.20	Expanded perlite						
	United States	5 865 ^r	3 984 ^r	6 740	4 297	9 012	5 892
	Germany	-	-	4	3	13	9
	Total	5 865 ^r	3 984 ^r	6 744	4 300	9 025	5 901

Source: Statistics Canada.

... amount too small to be expressed; - Nil; ^p Preliminary.

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

^a Data for previous years were included under code 2530.10.10.10. ^b Data for previous years were included under code 2530.10.10.20.^c Data for previous years were included under code 3802.90.20.

TABLE 7. CANADA, LIGHTWEIGHT AGGREGATES PRODUCED, SOLD AND USED, 1996 AND 1997

	1996				1997			
	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	177 348	5 390 690	150 390	4 980 329	205 861	6 931 806	185 435	6 153 926
From imported crude materials								
Expanded perlite and exfoliated vermiculite ¹	500 367 ^r	24 753 110 ^r	524 621 ^r	25 999 872 ^r	484 830	24 582 603	515 641	26 182 462
Total	677 715 ^r	30 143 800 ^r	675 011 ^r	30 980 201 ^r	690 691	31 514 409	701 076	32 336 388

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

^r Revised.

¹ Combined to avoid disclosing confidential company data.

TABLE 8. CANADA, SALES OF EXPANDED SLAG, PERCENTAGE BY END USE, 1995-97

Use	1995	1996	1997
	(%)		
Concrete block manufacture	85.0	96.0	74.5
Ready-mix concrete	4.0	4.0	3.3
Miscellaneous uses	11.0	–	22.2

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, 1995-97

Use	1995	1996	1997
	(%)		
Concrete block manufacture	49.8	43.7	54.0
Loose insulation	47.1	51.6	41.6
Ready-mix concrete	2.0	2.0	2.9
Precast concrete manufacture	0.6	1.8	1.5
Horticulture and miscellaneous uses	0.5	0.9	–

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, 1995-97

Use	1995	1996	1997
	(%)		
Horticulture and agriculture	92.2	94.2	92.0
Loose insulation and miscellaneous uses	7.3	3.1	7.3
Insulation in gypsum products in other construction materials	0.5	2.8	0.8
	–	–	–

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, 1995-97

Use	1995	1996	1997
	(%)		
Horticulture	83.6	86.1	86.1
Loose insulation	8.2	2.4	2.1
Miscellaneous uses	8.2	11.5	11.8

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

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

TABLE 12. CANADA, VALUE OF CONSTRUCTION BY TYPE, 1994-96

	1994	1995	1996
	(\$ millions)		
BUILDING CONSTRUCTION			
Residential	34 922	29 186	32 575
Industrial	3 006	3 243	4 227
Commercial	6 251	6 265	6 945
Institutional	4 931	4 982	4 906
Other	1 948	2 095	2 360
Total building	51 058	45 770	51 013
ENGINEERING CONSTRUCTION			
Marine	492	445	447
Transportation	6 032	6 436	5 874
Waterworks	904	1 140	1 358
Sewage, dams, sanitary systems	1 501	1 585	1 397
Electric power	3 965	3 441	2 934
Railway, telephones	1 446	1 298	1 880
Gas and oil facilities	13 721	13 474	12 891
Other	2 325	2 803	2 495
Total engineering	30 386	30 621	29 276
Total construction	81 444	76 391	80 289

Sources: Natural Resources Canada; Statistics Canada, catalogue no. 61-223 (additional information is also available on the Internet at <http://www.statcan.ca/english/Pgdb/Economy/Manufacturing/manuf18.htm> or <http://www.cmhc-schl.gc.ca/MkInfo/store/#nho>).

Notes: Numbers may not add to totals due to rounding. Expenditures include value of new construction as well as major renovation work purchased.