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(Part- III : Mineral Reviews)

58th Edition

LIMESTONE & OTHER CALCAREOUS MATERIALS

(ADVANCE RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

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18 Limestone & Other Calcareous Materials

Limestone is a sedimentary rock composed mainly of calcium carbonate ($CaCO_3$) in the form of the mineral calcite. About 10% of sedimentary rocks are limestone and most cave systems are through limestone bedrock. The two most important constituents of limestone are calcite and dolomite. Limestone often contains magnesium carbonate, either as dolomite CaMg $(CO_3)_2$ or magnesite ($MgCO_3$) mixed with calcite. Such rocks are termed as 'dolomitic' or 'magnesian' limestone. Limestone altered by dynamic or contact metamorphism become coarsely crystalline and are referred to as 'marble' and 'crystalline limestone'. Other common varieties of limestone are 'marl', 'oolite' (oolitic limestone), shelly limestone, algal limestone, coral limestone, pisolitic limestone, crinoidal limestone, travertine, onyx, hydraulic limestone, lithographic limestone, etc. However, the limestone which is used by industries in bulk quantity is a bedded type sedimentary limestone.

Other calcareous material used by industry are 'limeshell', the thick calcareous shells of molluscs deposited in the form of beds as well as present in ancient lakes and shallow seas. "Marl", a lime-rich mud contains variable amounts of clays and silt.

A limestone rock which separates well along the stratification into a few centimetres thick slab is termed 'flagstone'. The dimensional limestone is used for building and ornamental stone.

RESERVES/RESOURCES

The total reserves/resources of limestone of all categories and grades as per NMI database based on UNFC system as on 1.4.2015 has been estimated at 2,03,224 million tonnes, of which 16,336 million tonnes (8%) are placed under Reserves category and 1,86,889 million tonnes (92%) are under Remaining Resources category. Karnataka is the leading State having 27% of the total resources followed by Andhra Pradesh & Rajasthan (12% each), Gujarat (10%), Meghalaya (9%), Telangana (8%) and Chhattisgarh & Madhya Pradesh (5% each). The remaining 12% is shared by other states. Grade-wise, Cement grade (Portland) has leading share of about 70% followed by Unclassified grades (12%) and BF grade (7%). The remaining 11% is shared by various other grades [Table-1(A)].

The total reserves/resources of marl of all categories and grades as per NMI database based on UNFC system as on 1.4.2015 has been estimated in Gujarat at 135.56 million tonnes of which 123.86 million tonnes (91%) are under Reserves category and 11.70 million tonnes (9%) are under Remaining Resources category [Table - 1 (B)].

EXPLORATION & DEVELOPMENT

The exploration & development details, if any, are covered in the Review on "Exploration & Development" under "General Reviews".

PRODUCTION AND STOCKS

Limestone

The production of limestone in 2018-19 at 379 million tonnes increased marginally by about 11.34% as compared to that of the previous year.

There were 680 reporting mines in 2018-19 as against 758 during the previous year. Thirty-two mines, each producing more than 3 million tonnes per annum contributed 44 per cent of the total production of limestone in 2018-19. The share of 23 mines, each in the production range of 2 to 3 million tonnes was 15% of the total production. About 22% of the total production was contributed by 58 mines, each producing 1 to 2 million tonnes annually. The remaining 19% of the total production was reported by 567 mines and 3 associated mines during the year. Ten principal producers contributed about 53% of the total production. About 2.86% of the production was reported by Public Sector mines as against 3.34% in the previous year.

About 97% of the total production of limestone during 2018-19 was of Cement grade and remaining 3% by other grades.

Table – 1(A) : Reserves/Resources of Limestone as on 01.04.2015
(By Grades/States)

(In '000 tonnes)

Grade/State	Reserves				Remaining Resources								Total Resources (A+B)
	Proved STD111	Probable STD121	Probable STD122	Total (A)	Feasibility STD211	Pre-feasibility STD221	Pre-feasibility STD222	Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
All India: Total	**9438939**	**3015917**	**3880897**	**16335753**	**4870440**	**4852713**	**8623172**	**7111337**	**22629060**	**130787772**	**8014504**	**186888998**	**203224752**
By Grades													
Chemical	184411	98399	95562	378372	126704	113184	601969	19590	1825142	2372558	14268	5073415	5451787
S.M.S.(O.H.)	135571	853518	10146	999235	12497	280089	740140	512977	458258	1822480	239223	4065664	5064898
S.M.S.(L.D.)	2636	182	584	3402	821	108139	11468	7992	49894	223762	-	402075	405477
S.M.S.(O.H. & L.D. mixed)	-	-	-	-	-	-	-	-	-	167182	-	167182	167182
B.F.	247462	44404	51201	343068	139602	569999	77704	509245	1053678	11302892	6871	13659989	14003057
S.M.S. & B.F. mixed	40226	101941	27728	169894	32974	7234	49524	4712	122103	711755	240733	1169033	1338928
Cement (portland)	8373610	1693372	3549049	13616030	4282507	3601959	6651670	5069573	13298490	88338670	6895165	128138034	141754065
Cement (white)	133	23	115	270	4730	3054	2702	117000	-	2231	-	129716	129986
Cement (portland & white)	1776	-	930	2706	14125	8540	13707	338670	62101	506688	39000	982832	985538
Cement (blendable/ beneficiable)	183933	51087	64749	299769	165958	91508	340110	42227	44217	490999	-	1175019	1474788
B.F. & cement mixed	49731	208	35456	85394	1040	26623	6308	3869	45	89942	-	127828	213222
S.M.S., chemical & paper	2207	-	273	2479	353	2169	1329	-	151	1228617	-	1232618	1235097
Paper	25551	-	-	25551	472	-	359	120738	27197	747971	-	896737	922289
Others	43906	41787	7861	93555	18419	15407	33432	102098	515719	2509307	232908	3427289	3520844
Unclassified	138164	108746	36731	283642	69172	17934	81277	217708	5092748	19027097	324804	24830740	25114381
Not-known	9623	22250	513	32385	1066	6876	11474	44938	79318	1245622	21532	1410827	1443212
By States													
Andhra Pradesh	1003483	19713	385133	1408329	269901	53722	706890	82112	268002	18666131	3466741	23513499	24921828
Arunachal Pradesh	-	-	-	-	-	-	-	-	49220	433575	1	482796	482796
Assam	25542	152546	-	178088	167902	21973	4257	154644	39859	901623	-	1290258	1468346
Bihar	12410	-	306	12715	3096	2558	1405	67926	38210	724118	10558	847872	860588
Chhattisgarh	1025180	7128	145576	1177885	1071824	751825	427410	1332250	485933	5558135	-	9627377	10805262
Daman & Diu	-	-	-	-	-	-	-	-	-	128670	-	128670	128670
Gujarat	750236	173244	76324	999804	277146	159554	120210	21110	906641	18772852	-	20257514	21257318

(Contd)

Table-1(A) (Concld)

Grade/State	Reserves				Remaining Resources								Total Resources (A+B)
	Proved	Probable		Total	Feasibility	Pre-feasibility		Measured	Indicated	Inferred	Reconnaissance	Total	
	STD111	STD121	STD122	(A)	STD211	STD221	STD222	STD331	STD332	STD333	STD334	(B)	
Haryana	-	-	-	-	1425	15507	3382	-	2200	52163	-	74677	74677
Himachal Pradesh	555180	209851	69908	834938	191300	327757	40840	1530937	26121	3234938	37339	5389231	6224169
Jammu & Kashmir	443339	31917	79147	554404	54863	9008	20510	43611	370	1752569	207283	2088214	2642618
Jharkhand	88172	-	29116	117288	95008	13529	29265	89572	13220	354319	11803	606715	724003
Karnataka	461049	2154	1113795	1576998	497136	559903	1355522	1572501	13920771	34952588	-	52858420	54435419
Kerala	11472	-	-	11472	123106	77	-	21161	2888	35228	-	182459	193931
Madhya Pradesh	816293	1093490	545321	2455103	419938	256187	498590	566011	830331	4045838	269859	6886754	9341858
Maharashtra	424035	143115	39905	607055	583978	206162	136835	28595	234518	1056168	-	2246255	2853310
Manipur	-	-	-	-	-	-	-	10197	2138	33718	-	46053	46053
Meghalaya	135836	87904	1822	225562	68457	39289	46200	464670	2811179	14048758	-	17478553	17704116
Nagaland	-	-	-	-	825	-	-	-	1005500	745875	-	1752200	1752200
Odisha	255555	77879	61007	394442	173797	548527	420634	139924	50397	361350	32635	1727264	2121706
Puducherry	-	-	-	-	-	-	-	4433	4333	6966	-	15732	15732
Rajasthan	2471143	933889	863351	4268382	367799	1538090	4529048	596071	761855	11365794	939808	20098465	24366847
Sikkim	-	-	-	-	-	-	-	-	-	2380	-	2380	2380
Tamil Nadu	334445	82892	56572	473909	209632	99882	91350	92843	33440	598942	-	1126088	1599997
Telangana	625569	195	400766	1026529	254912	28110	92020	113416	921577	11710694	3038478	16159208	17185736
Uttar Pradesh	-	-	12849	12849	33360	129180	38375	142763	40000	31200	-	414878	427727
Uttarakhand	-	-	-	-	5035	91872	60429	29486	164879	1191059	-	1542760	1542760
West Bengal	-	-	-	-	-	-	-	7104	15482	22120	-	44706	44706

Figures rounded off

Table – 1 (B) : Reserves/Resources of Marl as on 01.04.2015
(By Grades/States)

(In tonnes)

Grade/State	Reserves				Remaining Resources								Total Resources (A+B)
	Proved	Probable		Total	Feasibility	Pre-feasibility		Measured	Indicated	Inferred	Reconnaissance	Total	
	STD111	STD121	STD122	(A)	STD211	STD221	STD222	STD331	STD332	STD333	STD334	(B)	
All India : Total	**117115856**	**4650000**	**2090000**	**123855856**	**11704870**	-	-	-	-	-	-	**11704870**	**135560726**
By Grade													
Unclassified	117115856	4650000	2090000	123855856	11704870	-	-	-	-	-	-	11704870	135560726
By State													
Gujarat	117115856	4650000	2090000	123855856	11704870	-	-	-	-	-	-	11704870	135560726

Figures rounded off

Rajasthan was the leading producing State accounting for (20%) of the total production of limestone, followed by Madhya Pradesh & Andhra Pradesh (13% each), Chhattisgarh (11%), Karnataka (9%), Telangana (8%), Gujarat (7%), Tamil Nadu (6%) and the remaining 13% was contributed by Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Kerala, Maharashtra, Meghalaya, Odisha and Uttar Pradesh.

Mine-head closing stocks of limestone for the years 2017-18 and 2018-19 was 18.2 million tonnes each.

Average daily labour employment in limestone mines in 2018-19 was 20,145 as against 22,019 in the previous year.

Table – 2 : Principal Producers of Limestone, 2018-19

Name and address of producer	Location of mine	
	State	District
UltraTech Cement Ltd, 'B' Wing, Ahura Centre, 2nd Floor, Mahakali Caves Road, Andheri (E), Mumbai-400 093, Maharashtra	Andhra Pradesh Chhattisgarh Gujarat Himachal Pradesh Karnataka Madhya Pradesh Maharashtra Rajasthan Tamil Nadu Uttar Pradesh	Kurnool Raipur Amreli Solan Kalaburagi Dhar Neemuch Rewa Satna Sidhi Chandrapur Chittorgarh Jaipur Nagaur Pali Ariyalur Perambalur Sonbhadra
Shree Cement Ltd, Post Box No. 33 Bangur Nagar, Beawar – 305 901, Rajasthan.	Chhattisgarh Karnataka Rajasthan 	Raipur Kalaburagi Ajmer Pali
The ACC Ltd, Cement House, 121, Maharshi Karve Road, Mumbai – 400 020, Maharashtra	Chhattisgarh Himachal Pradesh Jharkhand Karnataka Madhya Pradesh Maharashtra Odisha Rajasthan Tamil Nadu	Durg Bilaspur Singhbhum (W) Kalaburagi Katni Yavatmal Bargarh Bundi Coimbatore
Ambuja Cement Ltd, Elegant Business Park, MIDC Cross Road B Off Andheri Kurla Road, Andheri-(East), Mumbai - 400 059 Maharashtra	Chhattisgarh Gujarat Himachal Pradesh Maharashtra Rajasthan	Baloda Bazar Raipur Junagadh Solan Chandrapur Pali

(Contd.)

Table - 2 (Contd.)

Name and address of producer	Location of mine	
	State	District
The Ramco Cement Ltd, 5th Floor, Auras Corporate Centre, 98, Dr Radhakrishanan Salai, Mylapore- 600 004, Chennai. Tamil Nadu	Andhra Pradesh Karnataka Tamil Nadu	Krishna Chitradurga Ariyalur Perambalur Thoothukudi Virudhunagar
Jaiprakash Associates Ltd, Sector – 28, Noida – 201 304, Gautam Buddha Nagar Uttar Pradesh.	Andhra Pradesh Gujarat Madhya Pradesh	Krishna Kachchh Rewa
Dalmia Cement Ltd (Bharat), Dalmiapuram,Main Road, Kallakudi Lalgudi, Tiruchirappalli- 621 651, Tamil Nadu	Andhra Pradesh Karnataka Meghalaya Tamil Nadu	Cuddapah Belgavi Jaintia Hills Ariyalur Tiruchirapalli
The India Cements Ltd., Coromandel Tower,93 Santhome High Road, Karpagam Avenue, Raja Annamali Puram Chennai-600 028 Tamil Nadu	Andhra Pradesh Tamil Nadu Telangana	Cuddapah Ariyalur Perambalur Salem Nalgonda Rangareddy
Century Textiles & Industries Ltd, Century Bhawan, Dr Annie Besant Road, Worli, Mumbai– 400 030, Maharashtra.	Chhattisgarh Madhya Pradesh Maharashtra	Raipur Satna Chandrapur
J.K. Cement Ltd, Kamla Tower, Kanpur - 208 001 Uttar Pradesh.	Karnataka Rajasthan	Bagalkot Chittorgarh Nagaur

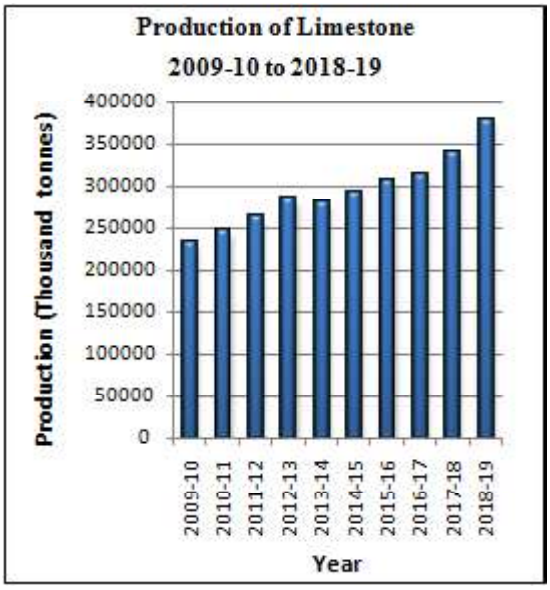

Table – 3 : Production of Limestone, 2016-17 to 2018-19 (By States)

(Qty in '000 tonnes; Value in ₹'000)

State	2016-17		2017-18		2018-19 (p)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	**314669**	**73878426**	**340417**	**80995698**	**379045**	**84841055**
Andhra Pradesh	35515	7446888	38889	8567180	48290	9944351
Assam	1594	444644	1432	454352	1652	539360
Bihar	190	104495	43	24886	240	138775
Chhattisgarh	32156	8622865	36391	8652173	42411	9221079
Gujarat	25813	5110332	26019	5414111	26237	5371429
Himachal Pradesh	11009	2185480	11504	2466113	12027	2533830
Jammu & Kashmir	1032	200602	1225	282232	1228	297231
Jharkhand	1146	501660	1190	976218	1248	429156
Karnataka	29751	5475530	30059	5725156	34303	5927068
Kerala	376	325069	444	366075	325	229765
Madhya Pradesh	36164	8405039	43060	10779367	49762	10763488
Maharashtra	12124	2840194	14152	3134365	14991	3267651
Meghalaya	5095	2540552	6599	2859654	7195	2794348
Odisha	4752	1598449	4968	1578887	5289	1769188
Rajasthan	66906	15908982	74138	17482060	76467	18412605
Tamil Nadu	23670	6692906	20538	5994269	23863	6436394
Telangana	24720	4959547	27367	5464824	30895	6081207
Uttar Pradesh	2656	515192	2399	773776	2622	684130

Table – 4 : Production of Limestone, 2017-18 and 2018-19 (By Frequency Groups)

Production group (In tonnes)	No. of mines		Production for the group ('000 tonnes)		Percentage in total production		Cumulative percentage	
	2017-18	2018-19(P)	2017-18	2018-19(P)	2017-18	2018-19(P)	2017-18	2018-19(P)
All Groups	**758(5)**	**680(3)**	**340417**	**379045**	**100**	**100**	**-**	-
Up to 10000	284(4)	201(2)	466	354	0.14	0.09	0.14	0.09
10001 - 50000	136(1)	131(1)	3686	3666	1.08	0.97	1.22	1.06
50001 - 100000	61	65	4358	4600	1.28	1.21	2.5.	2.27
100001 - 200000	61	50	8757	7506	2.57	1.98	5.07	4.25
200001 - 300000	32	34	8242	8613	2.42	2.27	7.49	6.52
300001 - 400000	19	23	6579	8170	1.93	2.16	9.42	8.68
400001 - 500000	19	23	8625	10437	2.53	2.75	11.95	11.43
500001 - 600000	13	5	7150	2810	2.10	0.74	14.05	12.17
600001 - 700000	8	12	5255	7789	1.54	2.05	15.59	14.22
700001 - 800000	7	9	5284	6749	1.55	1.78	17.14	16
800001 - 900000	9	6	7619	5183	2.24	1.37	19.38	17.37
900001 - 1000000	5	8	7843	7600	1.42	2.01	20.80	19.38
1000001- 2000000	55	58	74435	82280	21.87	21.71	42.67	41.09
2000001 - 3000000	20	23	47823	55367	14.05	14.61	56.72	55.70
3000001 & above	29	32	147295	167921	43.28	44.30	100	100

Figure in parenthesis indicates mines of chalk, dolomite & shale with limestone as an associate mineral.

Table –5 : Production of Limestone, 2017-18 & 2018 -19
(By Sectors/States/Districts/Grades)

(Qty in '000 tonnes; Value in ₹'000)

State/District	2017-18						2018-19 (P)					
		Grades			Total			Grades			Total	
	No.of mines	Cement	LD, SMS & BF	Chemical	Qty	Value	No. of mines	Cement	LD, SMS & BF	Chemical	Qty	Value
India	**758(5)**	**328700**	**7721**	**3996**	**340417**	**80995698**	**680(3)**	**367619**	**7738**	**3688**	**379045**	**84841055**
Public Sector	**27**	**7218**	**4136**	**-**	**11354**	**4355770**	**24**	**6739**	**4091**	**-**	**10830**	**4279200**
Private Sector	**731(5)**	**321482**	**3585**	**3996**	**329063**	**76639928**	**656(3)**	**360880**	**3647**	**3688**	**368215**	**80561855**
Andhra Pradesh	**80(1)**	**37980**	**879**	**30**	**38889**	**8567180**	**80(1)**	**47489**	**769**	**32**	**48290**	**9944351**
Anantapur	12(1)	2511	50	-	2561	473137	8	3471	32	-	3503	598368
Cuddapah	6	12009	-	-	12009	2428308	6	14570	-	-	14570	2651510
Guntur	15	4851	166	30	5047	1050810	17	5062	94	32	5188	1008069
Krishna	11	7565	342	-	7907	2284189	10	10307	315	-	10622	2812581
Kurnool	36	11044	321	-	11365	2330736	39(1)	14079	328	-	14407	2873823
Assam	**3**	**1432**	**-**	**-**	**1432**	**454352**	**3**	**1652**	**-**	**-**	**1652**	**539360**
Karbi Anglong	1	133	-	-	133	65666	1	193	-	-	193	93002
North Cachar Hills	2	1299	-	-	1299	388686	2	1459	-	-	1459	446358
Bihar	**1**	**43**	**-**	**-**	**43**	**24886**	**1**	**240**	**-**	**-**	**240**	**138775**
Rohtas	1	43	-	-	43	24886	1	240	-	-	240	138775
Chhattisgarh	**71**	**36075**	**316**	**-**	**36391**	**8652173**	**50**	**42088**	**323**	**-**	**42411**	**9221079**
Baloda Bazar	3	3286	-	-	3286	655156	2	4852	-	-	4852	895920
Bastar	10	10	2	-	12	4802	4	++	++	-	++	187
Bilaspur	1	39	-	-	39	31525	2	211	-	-	211	91594
Durg	30	5791	314	-	6105	1711454	22	6272	323	-	6595	1737250
Janjgir-Champa	2	2291	-	-	2291	682037	3	1881	-	-	1881	447830
Kabirdham	1	14	-	-	14	5678	1	27	-	-	27	16948
Raigarh	1*	-	-	-	-	-	-	-	-	-	-	-
Raipur	22	24644	-	-	24644	5561519	16	28845	-	-	28845	6031350
Rajnandgaon	1	++	-	-	++	2	-	-	-	-	-	-
Gujarat	**125(1)**	**22455**	**-**	**3564**	**26019**	**5414111**	**109(1)**	**23103**	**-**	**3134**	**26237**	**5371429**
Amreli	2	4884	-	-	4884	958210	2	4710	-	-	4710	952257
Bhavnagar	-	-	-	-	-	-	1	60	-	-	60	27102
Devbhoomi Dwaraka	1	1	-	-	1	89	1	21	-	-	21	4636
Jamnagar	18	784	-	140	924	213789	21	862	-	189	1051	241118

(Contd.)

Table-5 (Contd.)

State/District	2017-18						2018-19 (P)					
		Grades			Total			Grades			Total	
	No.of mines	Cement	LD, SMS & BF	Chemical	Qty	Value	No. of mines	Cement	LD, SMS & BF	Chemical	Qty	Value
Junagarh	62	7814	-	1567	9381	1855700	47	7927	-	1395	9322	1997680
Kachchh	6	6642	-	-	6642	1257970	5	7187	-	-	7187	1170423
Porbandar	33(1)	1935	-	1857	3792	1043928	29(1)	1877	-	1550	3427	879694
Rajkot	2	109	-	-	109	19765	2	201	-	-	201	37279
Surat	1	286	-	-	286	64660	1	258	-	-	258	61240
Himachal Pradesh	**20**	**11385**	**119**	**-**	**11504**	**2466113**	**22**	**11860**	**166**	**1**	**12027**	**2533830**
Bilaspur	1	3671	-	-	3671	605684	1	3721	-	-	3721	676242
Sirmour	17	841	119	-	960	353951	19	686	166	1	853	291141
Solan	2	6873	-	-	6873	1506478	2	7453	-	-	7453	1566447
Jammu & Kashmir	**13**	**1225**	**-**	**-**	**1225**	**282232**	**22**	**1228**	**-**	**-**	**1228**	**297231**
Anantnag	3	72	-	-	72	20606	11	208	-	-	208	83979
Pulwama	8	725	-	-	725	204339	8	580	-	-	580	134090
Srinagar	2	428	-	-	428	57287	3	440	-	-	440	79162
Jharkhand	**6**	**1190**	**-**	**-**	**1190**	**976218**	**6**	**1248**	**-**	**-**	**1248**	**429156**
Palamau	1*	-	-	-	-	-	1*	-	-	-	-	-
Ranchi	2*	-	-	-	-	-	2*	-	-	-	-	-
Singhbhum (West)	3	1190	-	-	1190	976218	3	1248	-	-	1248	429156
Karnataka	**68**	**29234**	**825**	**-**	**30059**	**5725156**	**60**	**33656**	**647**	**-**	**34303**	**5927068**
Bagalkot	42	1719	746	-	2465	814296	39	2380	620	-	3000	865488
Belgavi	9	1577	75	-	1652	396232	6	2186	27	-	2213	473607
Chitradurga	3	23	-	-	23	12344	1	++	-	-	++	403
Kalaburagi	12	25915	-	-	25915	4501496	12	29090	-	-	29090	4587570
Shivamoga	1	-	4	-	4	788	1*	-	-	-	-	-
Tumakuru	1*	-	-	-	-	-	1*	-	-	-	-	-
Kerala	**1**	**444**	**-**	**-**	**444**	**366075**	**1**	**325**	**-**	**-**	**325**	**229765**
Palakkad	1	444	-	-	444	366075	1	325	-	-	325	229765
Madhya Pradesh	**144(2)**	**39900**	**3100**	**60**	**43060**	**10779367**	**128**	**46202**	**3348**	**212**	**49762**	**10763488**
Damoh	1	3887	-	-	3887	878418	1	4061	-	-	4061	467056
Dhar	9	322	-	-	322	78668	6	2666	-	-	2666	399659
Jabalpur	1	-	22	-	22	22851	1	-	17	-	17	15839
Katni	55(1)	4585	2529	60	7174	2387302	49	4158	2772	212	7142	2462820

(Contd.)

Table-5 (Contd.)

State/District	2017-18						2018-19 (P)					
		Grades			Total			Grades			Total	
	No.of mines	Cement	LD, SMS & BF	Chemical	Qty	Value	No. of mines	Cement	LD, SMS & BF	Chemical	Qty	Value
Neemuch	4	4123	-	-	4123	698543	4	4492	-	-	4492	743029
Rewa	8	4038	-	-	4038	1387464	8	4840	-	-	4840	1370892
Satna	62(1)	21201	549	-	21750	4891885	55	24246	559	-	24805	4876040
Sidhi	4	1744	-	-	1744	434236	4	1739	-	-	1739	428153
Maharashtra	**17**	**14152**	**++**	**++**	**14152**	**3134365**	**15**	**14991**	**++**	**++**	**14991**	**3267651**
Chandrapur	7	11167	-	++	11167	2266783	6	11635	-	++	11635	2335847
Yavatmal	10	2985	++	-	2985	867582	9	3356	++	-	3356	931804
Meghalaya	**18**	**6540**	**-**	**59**	**6599**	**2859654**	**20**	**7160**	**-**	**35**	**7195**	**2794348**
Jaintia Hills	15	4226	-	-	4226	1293228	16	5057	-	-	5057	1470708
Khasi Hills East	3	2314	-	59	2373	1566426	4	2103	-	35	2138	1323640
Odisha	**7(1)**	**4966**	**2**	**-**	**4968**	**1578887**	**7(1)**	**5287**	**2**	**-**	**5289**	**1769188**
Bargarh	1	849	-	-	849	355100	1	912	-	-	912	409537
Koraput	1	116	-	-	116	34839	1	139	-	-	139	41828
Sundargarh	5(1)	4001	2	-	4003	1188948	5(1)	4236	2	-	4238	1317823
Rajasthan	**35**	**71375**	**2480**	**283**	**74138**	**17482060**	**36**	**73726**	**2466**	**275**	**76467**	**18412605**
Ajmer	2	1042	-	-	1042	264667	2	1569	-	-	1569	409452
Banswara	1	1253	-	-	1253	248079	1	1329	-	-	1329	282855
Bundi	1	238	-	-	238	65751	1	1157	-	-	1157	351348
Chittorgarh	10	26345	-	-	26345	5765651	11	28138	-	-	28138	6436980
Jaipur	1	4502	-	-	4502	981357	1	4073	-	-	4073	1087451
Jaisalmer	2	708	2480	-	3188	1246394	2	588	2466	-	3054	1189708
Kota	1	2858	-	-	2858	665787	1	2560	-	-	2560	597714
Nagaur	5	1120	-	283	1403	588326	5	1203	-	275	1478	656858
Pali	6	22583	-	-	22583	4756779	6	20879	-	-	20879	4020176
Sikar	1*	-	-	-	-	-	1*	-	-	-	-	-
Sirohi	3	9446	-	-	9446	2579204	3	10739	-	-	10739	2992352
Udaipur	2	1280	-	-	1280	320065	2	1491	-	-	1491	387711
Tamil Nadu	**116**	**20538**	**-**	**-**	**20538**	**5994269**	**88**	**23845**	**18**	**-**	**23863**	**6436394**
Ariyalur	40	10607	-	-	10607	2752384	37	11843	18	-	11861	2951256
Coimbatore	3	1038	-	-	1038	564594	3	861	-	-	861	389003
Dindigul	6	2132	-	-	2132	593122	4	2852	-	-	2852	796056

(Contd.)

Table-5 (concld.)

State/District	2017-18						2018-19 (P)					
		Grades			Total			Grades			Total	
	No.of mines	Cement	LD, SMS & BF	Chemical	Qty	Value	No. of mines	Cement	LD, SMS & BF	Chemical	Qty	Value
Karur	5	629	-	-	629	196943	1	764	-	-	764	240850
Madurai	5	17	-	-	17	5324	-	-	-	-	-	-
Namakkal	4*	-	-	-	-	-	-	-	-	-	-	-
Perambalur	24	2193	-	-	2193	643880	20	3362	-	-	3362	847905
Salem	6	474	-	-	474	186937	4	462	-	-	462	198029
Thoothukudi (Tuticorin)	3	791	-	-	791	311623	4	790	-	-	790	264708
Tiruchirapalli	9	2202	-	-	2202	493248	11	2434	-	-	2434	485427
Tirunelveli	4	150	-	-	150	152395	1	149	-	-	149	153058
Virudhunagar	7	305	-	-	305	93819	3	328	-	-	328	110102
Telangana	**31**	**27367**	**-**	**-**	**27367**	**5464824**	**30**	**30895**	**-**	**-**	**30895**	**6081207**
Adilabad	2	4155	-	-	4155	817950	2	4363	-	-	4363	956992
Karimnagar	2	920	-	-	920	485760	2	980	-	-	980	407194
Nalgonda	23	17939	-	-	17939	3423503	22	20619	-	-	20619	3887825
Rangareddy	4	4353	-	-	4353	737611	4	4933	-	-	4933	829196
Uttar Pradesh	**2**	**2399**	**-**	**-**	**2399**	**773776**	**2**	**2622**	**-**	**-**	**2622**	**684130**
Sonbhadra	2	2399	-	-	2399	773776	2	2622	-	-	2622	684130

(p): provisional
(++): Negligible
( ): Figure in parenthesis indicates mines of chalk, dolomite and shale with limestone as an associate mineral.
(*) Only labour reported.

Table – 6 : Mine-head Closing Stocks of Limestone, 2017-18 & 2018-19 (By States/Grades)

(In '000 tonnes)

State	2017-18				2018-19 (P)			
	Grades				Grades			
	Cement	LD, SMS & BF	Chemical	Total	Cement	LD, SMS & BF	Chemical	Total
India	**14803**	**2362**	**1073**	**18238**	**14319**	**2615**	**1317**	**18251**
Andhra Pradesh	280	120	6	406	308	113	11	432
Assam	5	-	-	5	48	-	-	48
Chhattisgarh	441	19	-	460	554	21	-	575
Gujarat	1541	3	925	2469	1262	3	1073	2338
Himachal Pradesh	252	68	-	320	157	63	1	221
Jammu & Kashmir	53	-	-	53	48	-	-	48
Jharkhand	14	4	-	18	14	4	-	18
Karnataka	2937	650	-	3587	2850	766	-	3616
Kerala	30	-	-	30	18	-	-	18
Madhya Pradesh	4318	966	29	5313	4200	1107	86	5393
Maharashtra	11	9	1	21	18	6	++	24
Meghalaya	189	-	13	202	83	-	-	83
Odisha	103	413	-	516	267	413	-	680
Rajasthan	2742	1	98	2841	1980	1	145	2126
Tamil Nadu	709	109	1	819	896	118	1	1015
Telangana	1178	-	-	1178	1616		-	1616

Limeshell

The production of limeshell at 7534 tonnes during 2018-19 decreased by 49% as compared to the preceding year.

There were 5 reporting mines in 2018-19 and 6 reporting mines in 2017-18.

Mine-head closing stocks of limeshell in the year 2018-19 was 4,408 tonnes as against 18,492 tonnes in the previous year.

The average daily employment of labour during the year 2018-19 was 289 as against 511 in the previous year.

Table – 7 : Principal Producers of Limeshell 2018-19

Name and address of producer	Location of mine	
	State	District
The Vaikom Limeshell Co.op Society Ltd, No. 3145, P.O. Pallippurathussery, Vaikom-686 606, Distt. Kottayam, Kerala	Kerala	Kottayam
Naik Minerals, Vill.Karwar, Distt. Uttara Kannada, Karnataka-581352.	Karnataka	Uttara Kannada
Karappuram White Limeshell Vyavasaya Co-op. Society Ltd, Muhamma,Taluk: Cherthala Alappuzha-688 525, Kerala	Kerala	Alappuzha

Table – 8 : Production of Limeshell, 2016-17 to 2018-19
(By States)

(Qty in tonnes; Value in ₹'000)

State	2016-17		2017-18		2018-19 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	**12344**	**34774**	**14765**	**51445**	**7534**	**27786**
Karnataka	4003	7779	4537	12806	3538	10704
Kerala	8341	26995	10228	38639	3996	17082

Table – 9 : Production of Limeshell, 2017-18 & 2018-19
(By Sectors/States/Districts)

(Qty in tonnes; Value in ₹'000)

State/District	2017-18			2018-18(P)		
	No. of mines	Quantity	Value	No. of mines	Quantity	Value
India	**6**	**14765**	**51445**	**5**	**7534**	**27786**
Public sector	-	-	-	-	-	-
Private sector	6	14765	51445	5	7534	27786
Karnataka	**2**	**4537**	**12806**	**2**	**3538**	**10704**
Uttara Kannada	2	4537	12806	2	3538	10704
Kerala	**4**	**10228**	**38639**	**3**	**3996**	**17082**
Alappuzha	2	5035	20038	1	290	1756
Kottayam	2	5193	18601	2	3706	15326

Table – 10 : Mine-head Closing Stocks of Limeshell, 2017-18 & 2018-19
(By States)

(In tonnes)

State	2017-18	2018-19 (P)
India	**18492**	**4408**
Karnataka	18437	4374
Kerala	55	34

Marl

Production of marl during 2018-19 was 1,890 thousand tonnes as compared to 1,970 thousand tonnes in the preceding year. The entire production of marl was reported as associated mineral with limestone in both the years. There were 4 associate mines reporting production of marl during 2018-19 as compared to 5 associate mines in the previous year. The entire production was reported by Private Sector mines.

Entire production of marl during 2018-19 was reported from Gujarat and Tamil Nadu State.

Mine-head closing stock at the end of 2018-19 was 1,042 thousand tonnes as against 1,226 thousand tonnes in the previous year.

Table – 11 : Principal Producers of Marl, 2018-19

Name and address of producer	Location of mine	
	State	District
*Ultra Tech Cement Ltd, B-Wing, 2nd Floor, Ahura Centre, Mahakali Caves Road, Andheri (E), Mumbai– 400 093.	Gujarat	Amreli
*Saurashtra Cement Ltd, N.K. Mehta International House, 178, Backbay Reclamation, Mumbai-400 020.	Gujarat	Porbandar
*Chettinad Cement Corpn. Ltd, 4th floor, Rani Seethai Hall Building,603,Anna Salai Chennai-600 006	Tamil Nadu	Aryalur

**Producing as an associated mineral with limestone*

Table – 12 : Production of Marl, 2016-17 to 2018-19
(By States)

(Qty in tonnes, Value in ₹'000)

State	2016-17		2017-18		2018-19 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	**2203700**	**317886**	**1969796**	**331289**	**1890309**	**325121**
Gujarat	2203700	317886	1870836	295367	1794940	297309
Tamil Nadu	-	-	98960	35922	95369	27812

Table – 13 : Production of Marl, 2017-18 and 2018-19
(By Sector/States/Districts)

(Qty in tonnes; Value in ₹'000)

State/District	2017-18			2018-19 (P)		
	No. of mines	Quantity	Value	No. of mines	Quantity	Value
India	**(5)**	**1969796**	**331289**	**(4)**	**1890309**	**325121**
Private Sector	(5)	1969796	331289	(4)	1890309	325121
Gujarat	**(4)**	**1870836**	**295367**	**(3)**	**1794940**	**297309**
Amreli	(2)	1560716	268747	(2)	1515020	273747
Junagadh	(1)	12124	1588	-	-	-
Porbandar	(1)	297996	25032	(1)	279920	23562
Tamil Nadu	**(1)**	**98960**	**35922**	**(1)**	**95369**	**27812**
Ariyalur	(1)	98960	35922	(1)	95369	27812

Figures in parentheses indicate associated mines with limestone

Table – 14 : Mine-head closing Stocks of Marl, 2017-18 & 2018-19
(By States)

(Qty in tonnes)

State	2017-18	2018-19 (P)
India	**1226115**	**1042220**
Gujarat	1007170	823275
Tamil Nadu	218945	218945

MINING & MARKETING

In India, limestone mines are worked by opencast method. Captive mines are mechanised and supply feed to cement and iron & steel units. Some mines have well-laid road-cum-rail routes. The large mines are developed by forming benches in overburden and limestone bed. The face length, width and height of the benches correspond to the mining machinery deployed and production schedule. Heavy earth-moving machinery like 3.3 to 4 cu.m capacity hydraulic excavators in combination with 10-35 tonnes dumpers are normally used. Other mines are mainly worked by semi-mechanised and manual opencast mining methods. As per MCDR reports, drilling is done by Jack hammer & Wagon drill and blasting is done by ANFO, Slurry explosives, emulsion explosives etc.

Limestone production from Kurnool, Andhra Pradesh and from Adilabad in Telangana is used in paper mills, sugar, cement and steel plants. Tile, mossaic, chip and polished stonemakers also use limestone.

Limestone produced in Bihar is supplied mainly to cement plants, foundries and lime kiln units.

In Raipur and Durg districts of Chhattisgarh, the limestone produced is suitable for Iron & Steel Industry. The Bhilai Steel Plant fulfills its requirements of limestone from Nandini mines in Durg district. The Cement-grade limestone is also produced in the region and there is large cluster of cement plants in and around Raipur.

Limestone produced in Gujarat is consumed mainly in cement and chemical industries and also in textile, foundries and steel plants. The dolomitic limestone in Gujarat is used for making slabs and tiles.

Limestone produced in Himachal Pradesh is supplied to cement plants, paper industry, sugar mills and lime kilns. The limestone production from Bilaspur district is despatched to fertilizer unit of National Fertilizers Ltd (NFL) at Naya Nangal.

Limestone produced in Jammu & Kashmir is suitable for cement manufacturing.

In Karnataka, limestone is supplied generally to paper mills and cement plants. However, limestone of Kalaburagi district, commonly known as 'Shahabad stones', is used as flagstone or flooring stones.

Limestone from Madhya Pradesh is used in cement, sugar, paper, steel and lime industries.

In Maharashtra, apart from cement and sugar industries, limestone is used in Ferro-manganese Industry as flux and also in Tanning Industry.

Limestone mined in Rajasthan is consumed in captive cement plants on a large scale. Limestone of Nagaur district is utilised as feed for white cement plants as well as in steel plants as low silica SMS grade flux and in Chemical Industry. Crystalline limestone of Rajasthan is widely known as a decorative ornamental stone. The limestone worked in Bundi district and Raghunathgarh in Jaipur district is an excellent flagstone which find for use as paving stone.

The limestone produced in Dehradun-Garhwal areas of Uttarakhand was supplied to Sugar, Paper, Steel, Glass, Chemical and Cement Industries in the past.

Limestone in Tamil Nadu is consumed by various industries like Cement, Steel, Paper, Foundry, Fertilizer and Chemicals.

Limeshell from Kerala is used mainly in Chemical, Cement and White cement Industries. It is also used in the manufacture of polyfibre and in Tanning Industry.

USES

Limestone used for industrial purpose falls under 'major mineral', while the use of limestone in lime kilns and for building purposes comes under 'minor mineral' as per Mines and Minerals (Development and Regulation) Act, 1957.

The threshold value of limestone as per the revised Notification issued by IBM vide No.C-284/3/CMG/2017 dated 25th April 2018 is CaO 34% (min.) and MgO 5% (max.).

The principal use of limestone is in the Cement Industry. Other important uses are as raw material in the manufacture of quicklime (calcium oxide), slaked lime (calcium hydroxide) and mortar. Pulverised limestone is used as a soil conditioner to neutralise acidic soils (agricultural lime). It is used in sculptures because of its suitability for carving. It is often found in medicines and cosmetics. In some circumstances, limestone is used for glass making. As a reagent in fuel-gas desulphurisation, it

reacts with sulphur dioxide which enables air pollution control. It can suppress methane explosions in underground coal mines. It is added to toothpaste, paper, plastic, paint, tiles and other materials as both white pigment and cheap filler. In blast furnaces, limestone binds with silica and other impurities and facilitates their removal from iron.

Lime is prepared by heating limestone in kilns up to 1,000 ^{O}C. The CO_2 released is effluxed and 'quicklime' (CaO) formed remains as hard white lumps. This when slaked with water and mixed with sand, forms mortar or plaster. Commonly, the commercial lime is prepared as dry hydrated lime $Ca(OH)_2$ by adding to quicklime the right amount of water (18 parts to 56 parts of CaO). The value of lime for most purposes depends upon its CaO (or CaO + MgO) content.

The manufacture of metallic calcium is one of the latest uses of lime. Calcium is used in reducing organic compounds, desulphurising petroleum, debismuthising lead production of hard lead alloys and calcium-silicon alloys, and in the manufacture of calcium hydride which is further used as an efficient hydrogen carrier.

Limeshell is used mainly in Chemical and White Cement Industries. It is also used in the manufacture of polyfibre and in Tanning Industry. Marl is used as lithographic stone.

SPECIFICATIONS

Cement Industry

Cement is a binder, a substance used in construction that sets, hardens and adheres to other materials. Cement used in construction is usually inorganic, often lime or calcium silicate based. Magnesia, sulphur and phosphorus are regarded as deleterious elements. As per enduse grade classification of IBM, it is mentioned that as reported by Cement Manufacture's Association, limestone containing CaO 44 to 52% and MgO not more than 3.5% should be classified under portland cement. Limestone containing 38-44% Cao and up to 5% MgO should be placed under blendable/beneficiable cement. Limestone containing CaO 48% (min.) should be placed under white cement. The broad chemical specifications of Cement grade limestone (r.o.m.) for cement manufacture suggested by the National Council for Cement and Building Materials, New Delhi, are given in Table-15.

Table – 15 : Broad Chemical Specifications of Cement Grade (Run-of-Mine) Limestone (Clause 6.1.1)

Oxide component/ Other Constituents	Acceptable range for manufacture of Ordinary Portland Cement (33, 43 & 53 Grade) (per cent)	Limiting values taking into consideration other types of cements, scope of beneficiation and blending (per cent)
CaO	44-52	40 (min.)
MgO	3.5 (max.)	5.0 (max.)
SiO_2	To satisfy LSF, silica	–
Al_2O_3	Modules and alumina	–
Fe_2O_3	Modules	–
TiO_2	<0.5	<1.0
Mn_2O_3	<0.5	<1.0
R_2O (Na_2O + K_2O)	<0.6	<1.0
Total S as SO_3	<0.6	<0.8
P_2O_5	<0.6	<1.0
Cl	<0.015	<0.05
Free silica	<8.0	<10.0

Source: *Report on Norm for limestone deposits for cement manufacture by National Council for Cement and Building Materials, New Delhi, May 2001*

Iron & Steel Industry

In Iron & Steel Industry, limestone is used both in blast furnace and steel melting shop as a flux after calcining. It is also added as flux in self-fluxing iron ore sinters. It has two basic functions in steel making, first to lower the temperature of melting and second, to form calcium silicate which comes out as a slag, as it combines with silica in iron ore.

For use in the blast furnace, the calcium carbonate ($CaCO_3$) content in limestone should not be usually less than 90 per cent. The combined SiO_2 and Al_2O_3 should not exceed 6% though up to 11.5% is allowed, MgO should be within 4% and sulphur & phosphorus as low as possible.

In Steel Melting Shop (SMS), insolubles in limestone should not exceed more than 4 per cent. Good fluxing limestone should naturally be low in acid constituents like silica, alumina, sulphur and phosphorus. Limestone should be dense, massive, preferably fine-grained, compact and non-fritting on burning.

BIS has prescribed specifications for Flux grade limestone for use in steel plants as per IS : 10345 - 2004 (Second Revision; Reaffirmed 2009).

Glass Industry

Glass Industry requires high calcium limestone (94.5% $CaCO_3$) and 97.5% of combined $CaCO_3$ and $MgCO_3$. Iron and other colouring matters are regarded as objectionable and Fe_2O_3 should be up to 0.20% (max.). For colourless glass, limestone should contain 98.5% $CaCO_3$ (min.), iron content as Fe_2O_3 should not be more than 0.04%; and for bottle glass, Fe_2O_3 up to 0.05% is used. The BIS specifications (IS : 997 - 1973), First Amendment (Reaffirmed Feb. 2013) for limestone for use in Glass Industry are as follows:

Silica as SiO_2	2.5%
Total iron (Fe_2O_3)	
a) Calcite or marble	0.05%
b) Limestone	0.10%
c) Dolomitic limestone or dolomite	0.15%
Lime (as CaO)	53.0%
Total lime and magnesia (as CaO + MgO)	54.50%

Chemical Industry

The calcium carbide manufacturers generally prefer lime containing 95% CaO (min.) with limitations of not more than 3% SiO_2, not more than 0.95% phosphorus and other impurities not exceeding more than 2%. For the manufacture of bleaching powder, lime containing 95% and above CaO is required. Total $Fe_2O_3+Al_2O_3+MnO_2$ should be less than 2%; MgO should be below 2% and SiO_2 less than 1.5%. Bleaching powder is prepared by absorption of chlorine by dry hydrated lime. The hydrated lime should not contain more than 2% excess water. Iron and manganese oxides lead to unsuitability of the product and iron oxides tend to discolour the bleached material. Magnesia renders the bleaching powder hygroscopic. Silica and clay impede solution and settling of bleaching powder.

BIS has prescribed specification for limestone for use in Chemical Industry as per IS: 3204:1978 (First revision.Feb, 2009).

Sugar Industry

In Sugar Industry, lime is used for clarification of cane and beet juice, viz, removing the impurities from the juice and also for precipitating sugar from impurities. Milk of lime 1% in volume of cane juice is added to pre-heated juice. Limestone used in Sugar Industry must be high in active lime (CaO 80% min.), but low in iron, alumina and silica. Magnesia should be less than one per cent. Excess silica is undesirable because it separates as a gelatinous precipitate which covers the sugar crystals and retards their growth and filtration. Magnesia is objectionable because magnesium carbonate is soluble in sugar juice. Presence of iron tends to colour the finished product.

Fertilizer Industry

Limestone is used only as carrier in the manufacture of calcium ammonium nitrate fertilizer. For this purpose, limestone should contain $MgCO_3+CaCO_3$ 85% (min.), SiO_2 5% (max.) and acid insolubles 14% (max.).

Foundry Industry

The chemical requirements of limestone for use in foundries as per BIS specification (IS : 4140 -1978) have been withdrawn.

INDUSTRY & CONSUMPTION

Limestone comprises 95% of core raw material for cement production. As per report of Mines & Minerals-CMA India, around 180-250 kg of coal and about 1.5 tonnes of limestone is required to produce one tonne of cement.

India was the second largest cement producing country in the world after China. The total installed capacity of cement in 2018-19 was thus about 556.94 million tpy against 532.16 million tpy in the preceding year. Besides, there are three white cement plants having a total 9,90,000 tpy capacity. The total production of cement reached 337.32 million tonnes in 2018-19 registering a growth of about 13.30% over that of the preceding year.

In 2018-19, the total cosumption of limestone, as reported by different industries was 350.88 million tonnes which increased marginally by 12% from

313.77 million tonne in the preceding year. Cement was the major consuming Industry accounting for 95% consumption, followed by Iron & Steel (3%) and Chemical (1%). Negligible consumption was reported by aluminium, sugar & other industries etc. Consumption of limestone from 2016-17 to 2018-19 is indicated in Table - 16.

Table - 16 : Consumption* of Limestone, 2016-17 to 2018-19 (By Industries)

(In tonnes)

Industry	2016-17	2017-18 (R)	2018-19 (P)
All Industries	**274799200**	**313767100**	**350877500**
Aluminium/Alumina	176800	126100	126800
Cement	254393600	295644300	331784600
Chemical	5009600	5116100	5161300
Iron & Steel	13625900	11135600	10823900
Sugar(c)	717400	780000	858000
Others**	875900	965000	2122900

Figures rounded off.

** Includes actual reported consumption and/or estimates made wherever required. Due to paucity of data, coverage may not be complete.*

** * Includes, Alloy steel, calcination, ceramic, electrodes, oil well drilling, refractory, petroleum refining, sponge iron fertilizers, ferroalloys, foundry, glass, paper, metallurgy & thermal power.*

e: Estimated

FOREIGN TRADE

Exports

As per the Foreign Trade Policy 2015-20, the exports of limestone and lime shell are free. Exports of limestone increased substantially by 38% to 3.88 million tonnes in 2018-19 from 2.81 million tonnes in the previous year. Limestone in bulk was exported mainly to Bangladesh (96%) and UK (2%). On the other hand, during the same period, exports of chalk increased exponentially by 76% to 1,201 tonnes from 682 tonnes in the previous year. Chalk was exported mainly to Nepal (85%), Egypt (3%) and Bhutan, Bangladesh , UAE & Malaysia (2% each).

Exports of bleaching powder were at 21,327 tonnes in 2018-19 as compared to 16,349 tonnes in the previous year. Bleaching powder was exported mainly to Bangladesh (77%), Sri Lanka (10%) and Nepal (6%) besides other countries.

In 2018-19, about 325 tonnes of calcium carbide was also exported as against 439 tonnes in the previous year. Exports were mainly to Bangladesh (40%), Saudi Arabia (24%), Nepal (9%) Angola (7%)and Democratic Republic of the Congo & Oman (6% each) (Tables- 17 to 20).

Imports

As per the Foreign Trade Policy 2015-20, the import of limestone and lime shell are free. Imports of limestone increased considerably by 17% to 24.40 million tonnes in 2018-19 from 20.83 million tonnes in the previous year. On the other hand, imports of chalk in 2018-19 drastically decreased by 96% to 254 tonnes as against 6,989 tonnes in the previous year. Limestone was imported mainly from UAE (81%), Oman (11%), Vietnam (4%) and Malaysia (3%), while chalk was imported mainly from UK (87%), France (8%) and Italy (4%).

Imports of calcium carbide decreased considerably by 19% to 45,321 tonnes in 2018-19 from 55,651 tonnes in the previous year. Calcium carbide was imported mainly from China (88%) and Indonesia (11%). The imports of bleaching powder during 2018-19 increased manifold to 29 tonnes as against one tonne in the previous year. Imports were solely from USA (100%). (Tables- 21 to 24).

Table – 17 : Exports of Limestone (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**2812257**	**4102279**	**3883757**	**4947501**
Bangladesh	2659425	2457957	3729990	3103730
UK	62446	703277	78811	866576
USA	4486	92329	6322	267799
Nepal	13631	70461	19382	107705
Ireland	6465	71579	7925	94702
France	7193	81253	5625	64358
Belgium	4722	56548	3714	47672
Canada	3307	38551	3015	39131
Sri Lanka	2875	23387	3560	35000
Italy	3060	39094	2326	34342
Other countries	44648	467843	23088	286484

Figures rounded off

Table – 18 : Exports of Chalk (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**683**	**4296**	**1201**	**7736**
Nepal	613	3009	1021	5075
Qatar	29	652	16	979
UAE	1	20	27	464
Egypt	25	246	42	437
Malaysia	5	172	21	199
Bangladesh	1	6	28	195
Bhutan	++	++	31	160
USA	-	14	++	60
Nigeria	-	-	5	54
Canada	-	-	++	23
Other countries	9	177	10	90

Figures rounded off

Table – 19 : Exports of Bleaching Powder (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**16349**	**340458**	**21327**	**592188**
Bangladesh	13130	241952	16436	397469
Sri Lanka	1198	26285	2210	73680
USA	13	1045	635	58107
Nepal	951	11871	1326	29961
Malaysia	136	3682	256	9296
Saudi Arabia	125	3792	97	3738
Myanmar	72	1678	106	3624
Iran	103	8352	42	3215
Oman	24	2430	25	2954
Singapore	28	786	76	2924
Other countries	569	38584	119	7218

Figures rounded off

Table – 20: Exports of Calcium Carbide (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**439**	**25029**	**325**	**20384**
Bangladesh	346	19981	129	8304
Saudi Arabia	-	-	79	4671
Nepal	-	-	30	1752
Angola	24	1241	24	1457
Congo, D. Rep.	24	1402	21	1293
Oman	45	2204	20	1156
Germany	-	-	10	887
Bhutan	-	-	12	863
Ethiopia	++	192	-	-
Qatar	++	8	-	-
Other countries	++	1	-	-

Figures rounded off

Table – 21 : Imports of Limestone (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**20827697**	**29016416**	**24397171**	**36665169**
UAE	16239642	19143146	19693826	25240630
Oman	2729411	4437041	2594007	4876975
Malaysia	685433	2714162	756645	3200704
Vietnam	767372	1676936	1036240	2233780
Pakistan	50147	117040	108680	278243
Thailand	37265	268814	23974	212669
Egypt	31495	108108	45808	131076
Philippines	83072	145974	55400	122166
Bhutan	19068	38883	34430	75114
Singapore	3	86	29950	68267
Other countries	184789	366226	18211	225545

Figures rounded off

Table –22 : Imports of Chalk (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**6989**	**36764**	**254**	**6143**
UK	++	2	220	4098
Italy	12	969	9	727
France	63	1478	20	511
Taiwan	++	320	++	230
Belgium	-	-	3	212
Netherlands	7	360	1	191
UAE	2	159	1	163
China	1	76	++	11
Vietnam	6893	33212	-	-
Germany	9	126	-	-
Other countries	2	62	-	-

Figures rounded off

Table – 23 : Imports of Calcium Carbide (By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**55651**	**2394098**	**45321**	**2155384**
China	20838	882052	39711	1883601
Indonesia	8022	343910	4830	234942
South Africa	7841	325831	389	17247
Bhutan	18909	840424	261	13031
Hong Kong	-	-	91	4603
Germany	++	12	20	1404
Iran	-	-	19	555
Belgium	-	-	++	1
Argentina	41	1869	-	-

Figures rounded off

Table – 24 : Imports of Bleaching Powder
(By Countries)

Country	2017-18 (R)		2018-19 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**1**	**362**	**29**	**4574**
USA	-	-	29	4571
Germany	-	-	++	3
Argentina	1	362	-	-

Figures rounded off

FUTURE OUTLOOK

India has huge resources of limestone distributed over different parts of the country. It is comfortably placed in terms of annual capacity and production of cement. Cement-grade limestone occurs in all the limestone-bearing areas, while SMS, BF and Chemical-grade limestones occur in selective areas. Concerted efforts to locate SMS and BF grade limestone along with Cement-grade limestone are imperative to meet the growing demand.

The demand of raw materials for cement, such as, limestone and gypsum is expected to cause disruptive growth in the next few decades. The second largest Cement Industry in the world, the Indian Cement Industry, is expected to grow to an extent of 550 million tonnes per annum of capacity by FY2025.

India is largest importer of limestone, with 48% market share, followed by Japan, South Korea, Germany and Netherlands. The demand for paper in India is expected to rise at a healthy rate by 2020 mainly due to the Packaging Industry and the increasing number of schools. The increasing number of construction projects is expected to lead to a thriving Building and Construction Industry in India. This is expected to contribute 10% to the GDP of India. Also with rising growth in Indian pharmaceutical and Food & Beverage industries, the consumption of calcium carbonate (limestone) in India is expected to increase.

To fulfil India's domestic demand as per the GOI's new policy of allotment of mining blocks through auctioning. Up to 2019-20, a total of 70 blocks were auctioned. Out of these 70 blocks, 27 blocks were limestone blocks.