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(Part-III : Mineral Reviews)

59th Edition

LIMESTONE & OTHER CALCAREOUS MATERIALS

(ADVANCE RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

Indira Bhavan, Civil Lines,
NAGPUR – 440 001

PHONE/FAX NO. (0712) 2565471
PBX : (0712) 2562649, 2560544, 2560648
E-MAIL : cme@ibm.gov.in
Website: www.ibm.gov.in

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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 2019-20 at 359 million tonnes decreased marginally by about 5.43% as compared to that of the previous year.

There were 659 reporting mines in 2019-20 as against 725 during the previous year. Thirty mines, each producing more than 3 million tonnes per annum contributed 42 per cent of the total production of limestone in 2019-20. The share of 26 mines, each in the production range of 2 to 3 million tonnes was 17% of the total production. About 19% of the total production was contributed by 51 mines, each producing 1 to 2 million tonnes annually. The remaining 22% of the total production was reported by 552 mines and 3 associated mines during the year. Ten principal producers contributed about 54% of the total production. About 2.82% of the production was reported by Public Sector mines as against 2.88% in the previous year.

About 97% of the total production of limestone during 2019-20 was of Cement grade and the remaining 3% was of other grades (Tables-2 to 6).

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		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
		STD121	STD122			STD221	STD222						
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 STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
		STD121	STD122			STD221	STD222						
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

** Notified as Union Territory and is to be known as Union Territory of Jammu & kashmir comprising the territory of the existing State of Jammu & Kashmir (Gazette Notification No. 53, New Delhi, Friday, August 9, 2019)*

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 STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
		STD121	STD122			STD221	STD222						
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 followed by Madhya Pradesh (13%), Andhra Pradesh & Chhattisgarh (12% each), Karnataka (10 %), Tamil Nadu & Telangana (7% each), Gujarat (6%) and the remaining 13% was contributed by Assam, Bihar, Himachal Pradesh, UT of Jammu & Kashmir, Jharkhand, Kerala, Maharashtra, Meghalaya, Odisha and Uttar Pradesh.

Mine-head closing stocks of limestone for the year 2019-20 was 23.44 million tonnes as against 22.49 million tonnes in the previous year.

Average daily labour employment in limestone mines in 2019-20 was 19,836 as against 21,633 in the previous year.

Table – 2 : Principal Producers of Limestone, 2019-20

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	Kurnool
	Chhattisgarh	Raipur
	Gujarat	Amreli
	Himachal Pradesh	Solan
	Karnataka	Kalaburagi
	Madhya Pradesh	Neemuch
		Rewa
		Satna
		Sidhi
	Maharashtra	Chandrapur
	Rajasthan	Chittorgarh
		Jaipur
		Nagaur
		Pali
	Tamil Nadu	Ariyalur
	Uttar Pradesh	Sonbhadra
Shree Cement Ltd, Post Box No. 33 Bangur Nagar, Beawar – 305 901, Rajasthan.	Andhra Pradesh	Guntur
	Chhattisgarh	Raipur
	Karnataka	Kalaburagi
	Rajasthan	Ajmer
		Jhunjhunu
		Pali
The ACC Ltd, Cement House, 121, Maharshi Karve Road, Mumbai – 400 020, Maharashtra	Chhattisgarh	Durg
	Himachal Pradesh	Bilaspur
	Jharkhand	Singhbhum (W)
	Karnataka	Kalaburagi
	Madhya Pradesh	Katni
	Maharashtra	Yavatmal
	Odisha	Bargarh
	Rajasthan	Bundi
	Tamil Nadu	Coimbatore
Ambuja Cement Ltd, Elegant Business Park, MIDC Cross Road B Off Andheri Kurla Road, Andheri-(East), Mumbai - 400 059 Maharashtra	Chhattisgarh	Baloda Bazar
		Raipur
	Gujarat	Junagadh
	Himachal Pradesh	Solan
	Maharashtra	Chandrapur
	Rajasthan	Pali

(contd)

Table - 2 (contd)

Name and address of producer	Location of mine	
	State	District
The Ramco Cement Ltd, 5th Floor,	Andhra Pradesh	Krishna
		Kurnool
Auras Corporate Centre, 98 A, Dr Radhakrishanan Salai, Mylapore- 600 004, Chennai. Tamil Nadu	Karnataka	Chitradurga
	Tamil Nadu	Ariyalur
		Perambalur
		Thoothukudi
		Virudhunagar
J.K.Cement Ltd. Kamla Tower, Kanpur-208 001 Uttar Pradesh	Karnataka	Bagalkot
	Rajasthan	Chittorgarh
		Nagaur
Dalmia Cement Ltd (Bharat), Dalmiapuram, Main Road, Kallakudi Lalgudi, Tiruchirappalli- 621 651, Tamil Nadu	Andhra Pradesh	Cuddapah
	Karnataka	Belgavi
	Meghalaya	Jaintia Hills
	Tamil Nadu	Ariyalur
		Tiruchirapalli
The India Cements Ltd, Coromandel Tower,93 Santhome High Road, Karpagam Avenue, Raja Annamali Puram Chennai-600 028 Tamil Nadu	Andhra Pradesh	Cuddapah
	Tamil Nadu	Ariyalur
		Perambalur
		Salem
	Telangana	Nalgonda
		Rangareddy
Century Textiles & Industries Ltd, Century Bhawan, Dr Annie Besant Road, Worli, Mumbai– 400 030, Maharashtra.	Chhattisgarh	Raipur
	Madhya Pradesh	Satna
	Maharashtra	Chandrapur
J.K. Lakshmi Cement Ltd, 4th Floor, Nehru House 4, Bahadur Sah Zafar Marg, New Delhi-110 002	Chhattisgarh	Durg
	Rajasthan	Siroho

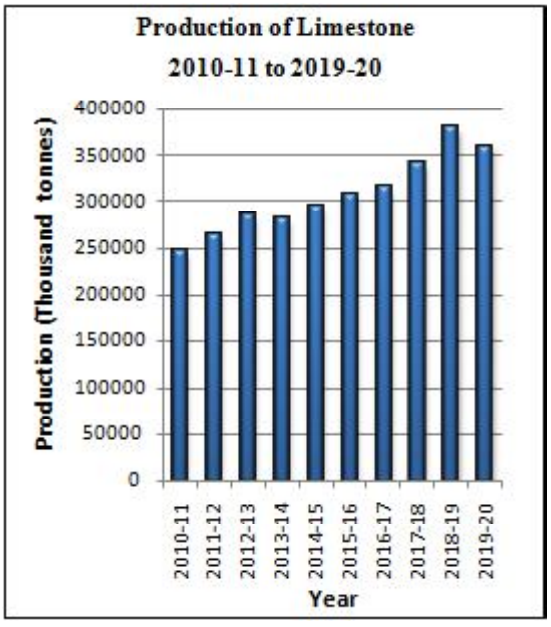

Table – 3 : Production of Limestone, 2017-18 to 2019-20 (By States)

(Qty in '000 tonnes; Value in `'000)

State	2017-18		2018-19		2019-20 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	**340417**	**80995698**	**379974**	**89584491**	**359332**	**83120219**
Andhra Pradesh	38889	8567180	48295	10227864	42535	8843286
Assam	1432	454352	1652	531733	1552	502390
Bihar	43	24886	240	138931	556	265678
Chhattisgarh	36391	8652173	42398	9663426	42699	9600649
Gujarat	26019	5414111	26651	5662241	22845	4915419
Himachal Pradesh	11504	2466113	12034	2519275	12528	2751663
Jammu & Kashmir*	1225	282232	1228	359423	936	272904
Jharkhand	1190	976218	1248	417940	783	327070
Karnataka	30059	5725156	34378	6103939	34228	5965418
Kerala	444	366075	325	230958	398	303154
Madhya Pradesh	43060	10779367	50102	12271100	46969	11380798
Maharashtra	14152	3134365	14991	3459779	14614	3385790
Meghalaya	6599	2859654	7195	2950307	7259	2966314
Odisha	4968	1578887	5289	1728521	5627	1808905
Rajasthan	74138	17482060	76567	19496173	72375	17547327
Tamil Nadu	20538	5994269	23864	6895558	24461	6370759
Telangana	27367	5464824	30895	6078898	26161	5159281
Uttar Pradesh	2399	773776	2622	848425	2806	753414

**Formed a new Union Territory to be known as the Union Territory of Jammu and Kashmir comprising the territory of the existing state of Jammu & Kashmir vide Gazette Notification No. 53, New Delhi, Friday, August 9, 2019/Shravana 18,1941 (SAKA).*

Table – 4 : Production of Limestone, 2018-19 and 2019-20 (By Frequency Groups)

Production group (In tonnes)	No. of mines		Production for the group ('000 tonnes)		Percentage in total production		Cumulative percentage	
	2018-19	2019-20 (P)	2018-19	2019-20 (P)	2018-19	2019-20 (P)	2018-19	2019-20 (P)
All Groups	**725(3)**	**659(3)**	**379976**	**359331**	**100**	**100**	-	-
Up to 10000	240(2)	200(1)	356	283	0.09	0.08	0.09	0.08
10001-50000	134(1)	118(2)	3717	3516	0.98	0.98	1.07	1.06
50001-100000	68	68	4868	5110	1.28	1.42	2.35.	2.48
100001-200000	51	47	7628	7192	2.01	2.00	4.36	4.48
200001-300000	34	32	8671	8149	2.28	2.27	6.64	6.75
300001-400000	22	20	7796	7132	2.05	1.98	8.69	8.73
400001-500000	23	20	10418	9185	2.74	2.56	11.43	11.29
500001-600000	4	15	2309	8366	0.61	2.33	12.04	13.62
600001-700000	13	7	8410	4598	2.21	1.28	14.25	14.90
700001-800000	8	11	6019	8294	1.58	2.31	15.83	17.21
800001-900000	6	7	5183	5899	1.36	1.64	17.19	18.85
900001-1000000	8	7	7600	6737	2.00	1.87	19.19	20.72
1000001-2000000	59	51	83632	69720	22.01	19.40	41.20	40.12
2000001-3000000	23	26	55367	62631	14.57	17.43	55.77	57.55
3000001 & above	32	30	168002	152519	44.23	42.45	100	100

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

Table –5 : Production of Limestone, 2018-19 & 2019 -20
(By Sectors/States/Districts/Grades)

(Qty in '000 tonnes; Value in `'000)

State/District	2018-19						2019-20 (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	**725(3)**	**368201**	**7896**	**3877**	**379974**	**89584491**	**659(3)**	**348505**	**7796**	**3031**	**359332**	**83120219**
Public Sector	**24**	**6839**	**4090**	**-**	**10929**	**4184711**	**21**	**6026**	**4118**	**-**	**10144**	**4384988**
Private Sector	**701(3)**	**361362**	**3806**	**3877**	**369045**	**85399780**	**638(3)**	**342479**	**3678**	**3031**	**349188**	**78735231**
Andhra Pradesh	**82(1)**	**47489**	**774**	**32**	**48295**	**10227864**	**77(1)**	**41921**	**614**	**-**	**42535**	**8843286**
Anantapur	9	3471	33	-	3504	955035	10	3550	22	-	3572	618968
Cuddapah	6	14570	-	-	14570	2791544	6	12154	-	-	12154	22260661
Guntur	18	5062	94	32	5188	1005903	14	3586	-	-	3586	701257
Krishna	10	10307	315	-	10622	2801364	10	9687	288	-	9975	2634868
Kurnool	39(1)	14079	332	-	14411	2674018	37(1)	12944	304	-	13248	2627532
Assam	**3**	**1652**	**-**	**-**	**1652**	**531733**	**3**	**1552**	**-**	**-**	**1552**	**502390**
Karbi Anglong	1	193	-	-	193	84887	1	98	-	-	98	37196
North Cachar Hills	2	1459	-	-	1459	446846	2	1454	-	-	1454	465194
Bihar	**1**	**240**	**-**	**-**	**240**	**138931**	**1**	**556**	**-**	**-**	**556**	**265678**
Rohtas	1	240	-	-	240	138931	1	556	-	-	556	265678
Chhattisgarh	**62**	**42074**	**324**	**-**	**42398**	**9663426**	**50**	**42453**	**246**	**-**	**42699**	**9600649**
Baloda Bazar	4	4852	-	-	4852	900527	4	5832	-	-	5832	1073043
Bastar	7	++	-	-	++	267	7	27	++	-	27	11848
Bilaspur	2	211	-	-	211	89127	2	289	++	-	289	106276
Durg	26	6272	324	-	6596	1765742	20	7593	246	-	7839	1960866
Janjgir-Champa	3	1881	-	-	1881	497171	2	2055	-	-	2055	493314
Kabirdham	1	27	-	-	27	17008	1	31	-	-	31	18788
Raigarh	1*	-	-	-	-	-	-	-	-	-	-	-
Raipur	18	28831	-	-	28831	6393584	14	26626	-	-	26626	5936514
Gujarat	**121(1)**	**23238**	**-**	**3413**	**26651**	**5662241**	**100(1)**	**19993**	**-**	**2852**	**22845**	**4915419**
Amreli	2	4710	-	-	4710	885047	2	4390	-	-	4390	797506
Bhavnagar	1	60	-	-	60	27102	1	181	-	-	181	67496
Devbhoomi Dwaraka	1	22	-	-	22	4427	-	-	-	-	-	-
Jamnagar	25	987	-	189	1176	275024	23	1117	-	232	1349	310589
Neemuch	4	4492	-	-	4492	807040	4	3380	-	-	3380	670183

(contd)

Table-5 (contd)

State/District	2018-19						2019-20 (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	47	7936	-	1423	9359	2025131	35	7032	-	1099	8131	1718991
Kachchh	5	7187	-	-	7187	1412355	3	5203	-	-	5203	1106844
Porbandar	37(1)	1893	-	1801	3694	934541	33(1)	1497	-	1521	3018	791107
Rajkot	2	185	-	-	185	34525	2	292	-	-	292	56261
Surat	1	258	-	-	258	64089	1	281	-	-	281	66625
Himachal Pradesh	**24**	**11873**	**161**	**-**	**12034**	**2519275**	**23**	**12381**	**146**	**1**	**12528**	**2751663**
Bilaspur	1	3728	-	-	3728	678586	1	3735	-	-	3735	687955
Sirmour	21	692	161	-	853	273518	20	989	146	1	1136	398651
Solan	2	7453	-	-	7453	1567171	2	7657	-	-	7657	1665057
Jammu & Kashmir**	**22**	**1228**	**-**	**-**	**1228**	**359423**	**17**	**936**	**-**	**-**	**936**	**272904**
Anantnag	11	208	-	-	208	83975	6	83	-	-	83	34534
Pulwama	8	580	-	-	580	139438	8	449	-	-	449	114904
Srinagar	3	440	-	-	440	136010	3	404	-	-	404	123466
Jharkhand	**7**	**1248**	**-**	**-**	**1248**	**417940**	**3**	**783**	**-**	**-**	**783**	**327070**
Palamau	1*	-	-	-	-	-	1*	-	-	-	-	-
Ranchi	2*	-	-	-	-	-	-	-	-	-	-	-
Singhbhum (West)	4	**1248**	-	-	**1248**	417940	2	783	-	-	783	327070
Karnataka	**62**	**33731**	**647**	**-**	**34378**	**6103939**	**57**	**33838**	**390**	**-**	**34228**	**5965418**
Bagalkot	42	2380	620	-	3000	883419	37	2799	371	-	3170	825106
Belgavi	7	2186	27	-	2213	478993	6	2041	19	-	2060	461120
Chitradurga	1	++	-	-	++	367	1*	-	-	-	-	-
Kalaburagi	10	29165	-	-	29165	4741160	11	28998	-	-	28998	4679192
Shivamoga	1*	-	-	-	-	-	1*	-	-	-	-	-
Tumakuru	1*	-	-	-	-	-	1*	-	-	-	-	-
Kerala	**1**	**325**	**-**	**-**	**325**	**230958**	**1**	**398**	**-**	**-**	**398**	**303154**
Palakkad	1	325	-	-	325	230958	1	398	-	-	398	303154
Madhya Pradesh	**136**	**46440**	**3504**	**158**	**50102**	**12271100**	**132**	**42796**	**4036**	**137**	**46969**	**11380798**
Damoh	1	4061	-	-	4061	934112	1	3970	-	-	3970	846563
Dhar	6	2666	-	-	2666	397033	2	2535	-	-	2535	484394
Jabalpur	1	-	17	-	17	15828	1	-	28	-	28	25095
Katni	50	4257	2928	158	7343	2597924	46	4589	3374	137	8100	2942348

(contd)

Table-5 (contd)

State/District	2018-19						2019-20 (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
Rewa	8	4840	-	-	4840	1581288	9	4190	-	-	4190	1130836
Satna	62	24385	559	-	24944	5506523	65	22389	634	-	23023	4863689
Sidhi	4	1739	-	-	1739	431352	4	1743	-	-	1743	417690
Maharashtra	**16**	**14991**	**++**	**++**	**14991**	**3459779**	**16**	**14614**	**++**	**-**	**14614**	**3385790**
Chandrapur	7	11635	-	++	11635	2374786	5	11285	-	-	11285	2429548
Yavatmal	9	3356	++	-	3356	1084993	11	3329	++	-	3329	956242
Meghalaya	**20**	**7195**	**-**	**-**	**7195**	**2950307**	**19**	**7259**	**-**	**-**	**7259**	**2966314**
Jaintia Hills	16	5056	-	-	5056	1558090	16	4885	-	-	4885	1406928
Khasi Hills East	4	2139	-	-	2139	1392217	3	2374	-	-	2374	1559386
Odisha	**7(1)**	**5287**	**2**	**-**	**5289**	**1728521**	**7(1)**	**5609**	**18**	**-**	**5627**	**1808905**
Bargarh	1	912	-	-	912	409335	1	957	-	-	957	386065
Koraput	1	139	-	-	139	41828	1	167	-	-	167	50157
Sundargarh	5(1)	4236	2	-	4238	1277358	5(1)	4485	18	-	4503	1372683
Rajasthan	**36**	**73827**	**2466**	**274**	**76567**	**19496173**	**38**	**70007**	**2327**	**41**	**72375**	**17547327**
Ajmer	2	1569	-	-	1569	416862	2	1961	-	-	1961	458775
Banswara	1	1329	-	-	1329	291033	1	1237	-	-	1237	271899
Bundi	1	1157	-	-	1157	363377	1	1159	-	-	1159	331738
Chittorgarh	11	28239	-	-	28239	6795004	10	26661	-	-	26661	6135361
Jaipur	1	4073	-	-	4073	1335809	1	4333	-	-	4333	1340688
Jaisalmer	2	588	2466	-	3054	1211632	2	578	2327	-	2905	1250946
Jhunjhunu	-	-	-	-	-	-	1*	-	-	-	-	-
Kota	1	2560	-	-	2560	670780	1	2562	-	-	2562	661791
Nagaur	5	1203	-	274	1477	656341	5	1021	-	41	1062	466271
Pali	6	20879	-	-	20879	4408372	6	18514	-	-	18514	3604477
Sikar	1*	-	-	-	-	-	1*	-	-	-	-	-
Sirohi	3	10739	-	-	10379	2995517	5	10559	-	-	10559	2668306
Udaipur	2	1491	-	-	1491	351446	2	1422	-	-	1422	357075
Tamil Nadu	**93**	**23846**	**18**	**-**	**23864**	**6895558**	**82**	**24442**	**19**	**-**	**24461**	**6370759**
Ariyalur	38	11871	18	-	11889	2953583	38	12088	19	-	12107	2776093
Coimbatore	3	861	-	-	861	453228	3	902	-	-	902	368028
Dindigul	4	2852	-	-	2852	767538	4	3209	-	-	3209	879371

(contd)

Table-5 (concld)

State/District	2018-19						2019-20 (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	1	764	-	-	764	278177	1	737	-	-	737	263372
Madurai	1*	-	-	-	-	-	-	-	-	-	-	-
Namakkal	1*	-	-	-	-	-	-	-	-	-	-	-
Perambalur	20	3362	-	-	3362	908315	19	3001	-	-	3001	759023
Salem	5	462	-	-	462	269048	4	483	-	-	483	183147
Thoothukudi (Tuticorin)	4	790	-	-	790	411329	2	1185	-	-	1185	394600
Tiruchirapalli	11	2434	-	-	2434	542804	9	2385	-	-	2385	474948
Tirunelveli	1	150	-	-	150	152585	1	150	-	-	150	171185
Virudhunagar	4	300	-	-	300	158951	1	302	-	-	302	100992
Telangana	**30**	**30895**	**-**	**-**	**30895**	**6078898**	**31**	**26161**	**-**	**-**	**26161**	**5159281**
Adilabad	2	4363	-	-	4363	863604	3	3717	-	-	3717	837309
Karimnagar	2	980	-	-	980	321440	2	846	-	-	846	334013
Nalgonda	22	20619	-	-	20619	4048737	22	16623	-	-	16623	3144226
Rangareddy	4	4933	-	-	4933	845117	4	4975	-	-	4975	843733
Uttar Pradesh	**2**	**2622**	**-**	**-**	**2622**	**848425**	**2**	**2806**	**-**	**-**	**2806**	**753414**
Sonbhadra	2	2622	-	-	**2622**	848425	2	2806	-	-	2806	753414

(++): Negligible

( ): Figure in parenthesis indicates mines of chalk, dolomite and shale with limestone as an associate mineral.

(*) Only labour reported.

*** Formed a new Union Territory to be known as the Union Territory of Jammu and Kashmir comprising the territory of the existing state of Jammu & Kashmir vide Gazette Notification No. 53, New Delhi, Friday, August 9, 2019/Shravana 18, 1941 (SAKA).*

Table – 6 : Mine-head Closing Stocks of Limestone, 2018-19 & 2019-20 (By States/Grades)

(In '000 tonnes)

State	2018-19				2019-20 (P)			
	Grades				Grades			
	Cement	LD, SMS & BF	Chemical	Total	Cement	LD, SMS & BF	Chemical	Total
India	**18463**	**2666**	**1364**	**22493**	**19265**	**2653**	**1519**	**23437**
Andhra Pradesh	302	115	11	428	372	83	6	461
Assam	48	-	-	48	25	-	-	25
Chhattisgarh	548	21	-	569	1901	54	-	1955
Gujarat	1344	3	1175	2522	1331	3	1346	2680
Himachal Pradesh	168	63	-	231	235	56	-	291
Jammu & Kashmir*	48	-	-	48	49	-	-	49
Jharkhand	14	4	-	18	10	4	-	14
Karnataka	2742	773	-	3515	2500	652	-	3152
Kerala	19	-	-	19	1	-	-	1
Madhya Pradesh	4256	1150	32	5438	4495	1225	39	5759
Maharashtra	18	9	++	27	45	7	++	52
Meghalaya	83	-	-	83	120	-	-	120
Odisha	267	413	-	680	393	421	-	814
Rajasthan	6091	++	145	6236	6147	33	127	6307
Tamil Nadu	899	115	1	1015	894	115	1	1010
Telangana	1616	-	-	1616	747	-	-	747

++: Negligible

**Formed a new Union Territory to be known as the Union Territory of Jammu and Kashmir comprising the territory of the existing state of Jammu & Kashmir vide Gazette Notification No. 53, New Delhi, Friday, August 9, 2019/Shravana 18, 1941 (SAKA).*

Limeshell

The production of limeshell at 4,600 tonnes during 2019-20 decreased by 39% as compared to the preceding year.

There were 2 reporting mines in 2019-20 as compared to 5 reporting mines in 2018-19.

Mine-head closing stocks of limeshell in the year 2019-20 was 2,187 tonnes as against 4,408 tonnes in the previous year.

The average daily employment of labour during the year 2019-20 was 244 as against 290 in the previous year (Tables-7 to 10).

Table – 7 : Principal Producers of Limeshell 2019-20

Name and address of producer	Location of mine	
	State	District
Naik Minerals, Vill.Karwar, Distt Uttara Kannada, Karnataka-581 352.	Karnataka	Uttara Kannada
The Vaikom Limeshell Co.op Society Ltd, No. 3145, P.O. Pallippurathussery, Vaikom-686 606, Distt Kottayam, Kerala	Kerala	Kottayam

Table – 8 : Production of Limeshell, 2017-18 to 2019-20
(By States)

(Qty in tonnes; Value in `'000)

State	2017-18		2018-19		2019-20 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	**14765**	**51445**	**7534**	**27780**	**4600**	**18730**
Karnataka	4537	12806	3538	10699	1017	3052
Kerala	10228	38639	3996	17081	3583	15678

Table – 9 : Production of Limeshell, 2018-19 & 2019-20
(By Sectors/States/Districts)

(Qty in tonnes; Value in `'000)

State/District	2018-19			2019-20 (P)		
	No. of mines	Quantity	Value	No. of mines	Quantity	Value
India	**5**	**7534**	**27780**	**2**	**4600**	**18730**
Public sector	-	-	-	-	-	-
Private sector	5	7534	27780	2	4600	18730
Karnataka	**2**	**3538**	**10699**	**1**	**1017**	**3052**
Uttara Kannada	2	3538	10699	1	1017	3052
Kerala	**3**	**3996**	**17081**	**1**	**3583**	**15678**
Alappuzha	1	290	1754	-	-	-
Kottayam	2	3706	15327	1	3583	15678

Table – 10 : Mine-head Closing Stocks of Limeshell, 2018-19 & 2019-20
(By States)

(In tonnes)

State	2018-19	2019-20 (P)
India	**4408**	**2187**
Karnataka	4374	2187
Kerala	34	-

Marl

Production of marl during 2019-20 was 2,109 thousand tonnes as compared to 1,890 thousand tonnes in the preceding year. The entire production of marl was reported as an associated mineral with limestone in both the years. There were 7 associate mines reporting production of marl during 2019-20 as compared to 4 associate mines in the previous year. The entire production was reported by Private Sector mines.

Entire production of marl during 2019-20 was reported from Gujarat and Tamil Nadu.

Mine-head closing stock at the end of 2019-20 was 881 thousand tonnes as against 1,042 thousand tonnes in the previous year (Tables-11 to 14).

Table – 11 : Principal Producers of Marl, 2019-20

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
*Gujarat Sidhi Cement Ltd, N.K.Mehta International House, 178, Backbay Reclamation, Mumbai-400 020	Gujarat	Junagarh
*Chettinad Cement Corpn. Ltd, 4th floor, Rani Seethai Hall Building, b603, bAnna Salai Chennai-600 006	Tamil Nadu	Aryalur
*The Ramco cements Ltd, 3rd floor, Auras corporate, Centre-98A, Dr. Radhakrishanan, Salai, Malypore Chennai-600 004	Tamil Nadu	Aryalur

**Producing as an associated mineral with limestone*

Table – 12 : Production of Marl, 2017-18 to 2019-20
(By States)

(Qty in tonnes, Value in `'000)

State	2017-18		2018-19		2019-20 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	**1969796**	**331289**	**1890308**	**349420**	**2109422**	**351529**
Gujarat	1870836	295367	1794940	324720	1606673	262581
Tamil Nadu	98960	35922	95368	24700	502749	88948

Table – 13 : Production of Marl, 2018-19 and 2019-20
(By Sector/States/Districts)

(Qty in tonnes; Value in `'000)

State/District	2018-19			2019-20 (P)		
	No. of mines	Quantity	Value	No. of mines	Quantity	Value
India	**(4)**	**1890308**	**349420**	**(7)**	**2109422**	**351529**
Private Sector	(4)	1890308	349420	(7)	2109422	351529
Gujarat	**(3)**	**1794940**	**324720**	**(4)**	**1606673**	**262581**
Amreli	(2)	1515020	277693	(2)	1397544	243255
Junagadh	-	-	-	(1)	27306	4003
Porbandar	(1)	279920	47027	(1)	181823	15323
Tamil Nadu	**(1)**	**95368**	**24700**	**(3)**	**502749**	**88948**
Ariyalur	(1)	95368	24700	(3)	502749	88948

Figures in parentheses indicate associated mines with limestone

Table – 14 : Mine-head Closing Stocks of Marl, 2018-19 & 2019-20 (By States)

(Qty in tonnes)

State	2018-19	2019-20 (P)
India	**1042220**	**880715**
Gujarat	823275	661770
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 Ferromanganese 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 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 end use grade classification of IBM, it is mentioned that as reported by Cement Manufactures 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 specified 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. The 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 2019-20 was thus about 537 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 334.37 million tonnes in 2019-20 registering a negetive growth of about 0.87% over that of the preceding year.

In 2019-20, the total cosumption of limestone, as reported by different industries was 328.62 million tonnes which decreased marginally by 5.41% from 347.42 million tonnes in the preceding year. Cement was the major consuming Industry accounting for 308.66 million tonne (94%) consumption, followed by Iron & Steel 12.68 million tonne (4%) and Chemical 5.29 million tonne (2%). Negligible consumption was reported by aluminium, sugar & other industries etc. Consumption of limestone from 2017-18 to 2019-20 is furnished in Table - 16.

Table - 16 : Consumption* of Limestone, 2017-18 to 2019-20 (By Industries)

(In tonnes)

Industry	2017-18	2018-19 (R)	2019-20 (P)
All Industries	**313767100 (216)**	**347421600 (217)**	**328619800 (208)**
Aluminium/Alumina	126100	67200	57800
Cement	295644300	327466600	308659600
Chemical	5116100	5162200	5293100
Iron & Steel	11135600	12723600	12680700
Sugar(c)	780000	858000	648000
Others**	965000	1144000	1280600

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.*

( ) Parenthesis indicates total no. of plants

FOREIGN TRADE

Exports

As per the Foreign Trade Policy 2015-20, the exports of limestone and lime shell are free. Exports of limestone decreased marginally by 3% to 3.76 million tonnes in 2019-20 from 3.88 million tonnes in the previous year. Limestone in bulk was exported mainly to Bangladesh (97%) and UK (1%). On the other hand, during the same period, exports of chalk increased moderately by 10% to 1,318 tonnes from 1201 tonnes in the previous year. Chalk was exported mainly to Nepal (89%), Egypt (3%) and Sri Lank,Congo & Qatar (1% each).

Exports of bleaching powder increased by 12% at 23,949 tonnes in 2019-20 as compared to 21,327 tonnes in the previous year. Bleaching powder was exported mainly to Bangladesh (80%) and Sri Lanka & Nepal (6% each) besides other countries.

In 2019-20, about 371 tonnes of calcium carbide was also exported as against 325 tonnes in the previous year registering an increase of 14%. Exports were mainly to Bangladesh (57%), Saudi Arabia (26%), Angola (6%), Oman (5%) and Bhutan (4%). Exports of chalk increased marginally by 10% to 1,318 tonnes in 2019-20 as against 1,201 tonnes in the precceding year. Exports were mainly to Nepal (89%), Egypt (3%) and Sri Lanka, Qatar & Congo (1% 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 marginally by 5% to 25.64 million tonnes in 2019-20 from 24.40 million tonnes in the previous year. On the other hand, imports of chalk in 2019-20 drastically decreased by 59% to 105 tonnes as against 255 tonnes in the previous year. Limestone was imported mainly from UAE (80%), Oman (12%), Vietnam (4%) and Malaysia (3%), while chalk was imported mainly from France (38%), Germany (14%), UK (11%) and Italy & Spain (10% each).

Imports of calcium carbide decreased considerably by 31% to 31,218 tonnes in 2019-20 from 45,321 tonnes in the previous year. Calcium carbide was imported mainly from China (98%) and Indonesia (2%). The imports of bleaching powder during 2019-20 decreased considerably by 41% to 17 tonnes as against 29 tonnes in the previous year. Imports were mainly from USA (88%) and Argentina (12%). Imports of chalk decreased drastically by 59% to 105 tonnes in 2019-20 as against 255 tonnes in the precceding year. Imports were mainly from France (38%), Germany (14%), UK (11%) and Spain (10%) (Tables-21 to 24).

Table – 17 : Exports of Limestone (By Countries)

Country	2018-19 (R)		2019-20 (P)	
	Qty (t)	Value (`'000)	Qty (t)	Value (`'000)
All Countries	**3883757**	**4947501**	**3760405**	**4656559**
Bangladesh	3729990	3103730	3651531	3048495
USA	6322	267799	8669	552076
UK	78811	866576	49217	527768
Nepal	19382	107705	15818	90626
Ireland	7925	94702	5426	63966
Belgium	3714	47672	2996	37964
France	5625	64358	3243	37081
UAE	1035	30127	1431	35296
Korea, Rep. of	2725	27865	2491	24577
Japan	1860	26374	1779	23548
Other countries	26368	310593	17805	215163

Figures rounded off

Table – 18 : Exports of Chalk (By Countries)

Country	2018-19 (R)		2019-20 (P)	
	Qty (t)	Value (`'000)	Qty (t)	Value (`'000)
All Countries	**1201**	**7736**	**1318**	**8022**
Nepal	1021	5075	1170	6230
Egypt	42	437	40	463
Congo	-	-	15	208
Uganda	-	-	3	192
Sri Lanka	++	8	16	140
Mozambique	-	-	++	137
Qatar	16	979	9	112
Canada	++	23	5	105
UAE	27	464	3	86
Malaysia	21	199	6	76
Other countries	74	551	52	273

Figures rounded off

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

Country	2018-19 (R)		2019-20 (P)	
	Qty (t)	Value (`'000)	Qty (t)	Value (`'000)
All Countries	**21327**	**592188**	**23949**	**677278**
Bangladesh	16436	397469	19120	485468
USA	635	58107	869	80581
Sri Lanka	2210	73680	1420	42572
Nepal	1326	29961	1353	22759
Malaysia	256	9296	494	15835
Vietnam	-	-	201	12793
Ethiopia	17	722	87	3368
Saudi Arabia	97	3738	72	2694
Haiti	-	-	50	2594
Singapore	76	2924	78	2554
Other countries	276	16290	205	6059

Figures rounded off

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

Country	2018-19 (R)		2019-20 (P)	
	Qty (t)	Value (`'000)	Qty (t)	Value (`'000)
All Countries	**325**	**20384**	**371**	**24368**
Bangladesh	129	8304	210	13157
Saudi Arabia	79	4671	98	5727
Bhutan	12	863	15	1554
Angola	24	1457	24	1394
Oman	20	1156	20	1170
Germany	10	887	1	739
Nepal	30	1752	2	371
Malaysia	-	-	++	83
China	-	-	++	42
Sudan	-	-	++	38
Other countries	21	1293	++	92

Figures rounded off

Table – 21 : Imports of Limestone (By Countries)

Country	2018-19 (R)		2019-20 (P)	
	Qty (t)	Value (`'000)	Qty (t)	Value (`'000)
All Countries	**24397170**	**36665169**	**25639511**	**37429912**
UAE	19693826	25240630	20486740	25649009
Oman	2594007	4876975	2976722	5135376
Malaysia	756645	3200704	858121	3597633
Vietnam	1036240	2233780	973044	2045668
Thailand	23974	212669	32064	263272
Egypt	45808	131076	49421	149651
Philippines	55400	122166	64900	114234
China	3716	48566	7487	94729
UK	2133	33621	29120	86148
Bhutan	34430	75114	36317	78063
Other countries	150992	489867	125577	216128

Figures rounded off

Table –22 : Imports of Chalk (By Countries)

Country	2018-19 (R)		2019-20 (P)	
	Qty (t)	Value (`'000)	Qty (t)	Value (`'000)
All Countries	**255**	**6142**	**105**	**4131**
France	20	511	40	1042
Italy	9	727	11	958
UK	220	4098	12	538
Belgium	3	212	8	400
Germany	-	-	15	331
Switzerland	-	-	6	277
China	++	11	2	261
Spain	-	-	11	233
Hong Kong	-	-	++	85
Vietnam	-	-	++	6
Other countries	2	584	-	-

Figures rounded off

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

Country	2018-19 (R)		2019-20 (P)	
	Qty (t)	Value (`'000)	Qty (t)	Value (`'000)
All Countries	**45321**	**2155385**	**31218**	**1450666**
China	39711	1883601	30559	1417839
Indonesia	4830	234942	540	29707
South Africa	389	17247	-	-
Bhutan	261	13031	35	1613
Hong Kong	91	4603	-	-
Germany	20	1404	++	19
Iran	19	555	-	-
Belgium	++	1	-	-
UAE	-	-	84	1487

Figures rounded off

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

Country	2018-19 (R)		2019-20 (P)	
	Qty (t)	Value (`'000)	Qty (t)	Value (`'000)
All Countries	**29**	**4574**	**17**	**2779**
USA	29	4571	15	1919
Argentina	-	-	2	836
Germany	++	3	++	22
Switzerland	-	-	++	3

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.

The demand for paper in India is expected to rise at a healthy rate 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.

India's domestic demand is being fulfilled as per the GOI's new policy of allotment of mining blocks through auctioning. Up to 2020-21, a total of 103 blocks were auctioned. Out of these 103 blocks, 30 blocks were limestone blocks.