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(Part-III : Mineral Reviews)

60th 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 1.4.2020 has been estimated at 2,27,589 million tonnes, of which 19,028 million tonnes (8%) are placed under Reserves category and 208,560 million tonnes (92%) are under Remaining Resources category. Karnataka is the leading State having 24% of the total resources followed by Andhra Pradesh (13%), Rajasthan (12%), Gujarat (10%), Meghalaya (10%), Telangana (7%), Chhattisgarh (5%) and Madhya Pradesh (4%). The remaining 15% is shared by other states. Grade-wise, Cement grade (Portland) has leading share of about 68% followed by Unclassified grades (11%) and BF grade (6%). The remaining 15% 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 1.4.2020 has been estimated in Gujarat at 99.20 million tonnes of which 68.15 million tonnes (69%) are under Reserves category and 31.05 million tonnes (31%) 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 2020-21 at 349 million tonnes decreased marginally by about 2.86% as compared to that of the previous year.

There were 663 reporting mines in 2020-21 as against 691 during the previous year. Twenty six mines, each producing more than 3 million tonnes per annum contributed 39 per cent of the total production of limestone in 2020-21. The share of 27 mines, each in the production range of 2 to 3 million tonnes was 20% of the total production. About 20% of the total production was contributed by 49 mines, each producing 1 to 2 million tonnes annually. The remaining 21% of the total production was reported by 561 mines and 4 associated mines during the year. Ten principal producers contributed about 53% of the total production. About 2.47% of the production was reported by Public Sector mines as against 2.82% in the previous year.

About 97% of the total production of limestone during 2020-21 was of Cement grade and the

Table – 1(A) : Reserves/Resources of Limestone as on 01.04.2020 (P)
(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	**14701910**	**1065305**	**3261256**	**19028470**	**7665106**	**6442697**	**9261072**	**7528921**	**32250068**	**135833401**	**9579524**	**208560789**	**227589259**
By Grades													
Chemical	146938	24096	83801	254835	193447	136909	614181	49055	1852736	2334325	17172	5197825	5452660
S.M.S.(O.H.)	84202	544	18824	103570	37598	347821	750421	473258	872586	2351376	12338	4845398	4948968
S.M.S.(L.D.)	27026	64	289	27379	4535	107078	11723	6933	218226	240547	2202	591243	618622
S.M.S.(O.H. & L.D. mixed)	143912	-	-	143912	-	-	-	-	69460	167182	-	236642	380554
B.F.	447043	17379	282224	746646	236231	423320	345685	513408	941805	10947453	18551	13426453	14173099
S.M.S. & B.F. mixed	5579	6543	9459	21580	18093	15425	99785	15303	139338	712250	240733	1240926	1262506
Cement (portland)	13072953	940605	2699398	16712957	6584396	5046475	6977585	5557939	17983254	89232763	8258746	139641159	156354115
Cement (white)	27140	-	866	28006	2132	7949	3629	-	27225	5862	-	46798	74804
Cement (portland & white)	29172	-	26239	55411	14126	7694	67824	338670	60000	516850	39000	1044164	1099575
Cement (blendable beneficiable)	479513	3638	105356	588507	284744	204927	198066	75132	2699758	3432109	156607	7051343	7639850
B.F. & cement mixed	6583	-	13281	19864	36032	26131	35249	485	479069	40442	-	617408	637273
S.M.S., chemical & paper	182	-	-	182	1732	2174	1329	-	-	1228344	517	1234096	1234278
Paper	53899	-	2375	56274	41846	-	3164	125453	27073	643601	-	841137	897411
Blendable (CaO 34-38%)	-	-	-	-	6641	6730	2762	39760	310215	113006	404770	883884	883884
Others	43886	2312	2516	48714	34178	32246	35476	64646	558849	2687647	27316	3440357	3489071
Unclassified	105382	54583	5127	165092	116840	65050	94908	224091	5666344	19835715	380040	26382988	26548080
Not-known	28500	15540	11502	55542	52535	12767	19286	44789	344129	1343930	21532	1838969	1894511
By States													
Andhra Pradesh	2815170	2133	439387	3256690	1302360	404217	1164592	115264	2129536	1866740	3399422	26582132	29838822
Arunachal Pradesh	-	-	-	-	-	-	-	-	49220	433575	1	482796	482796
Assam	23442	-	164687	188130	170039	27593	100319	67000	39859	1278730	-	1683540	1871670
Bihar	11807	-	-	11807	3388	2558	1675	67926	135740	772343	10558	994188	1005995
Chhattisgarh	1364595	65530	56227	1486351	1658144	903350	298720	1456579	1778018	5630057	-	11724867	13211218
Daman & Diu	-	-	-	-	-	-	-	-	-	128670	-	128670	128670
Gujarat	722663	115984	64467	903115	507311	254583	176439	79919	2593098	18317659	160	21929169	22832284

(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	696165	249863	75984	1022012	78403	653158	21105	1529950	5079	3295168	14271	5597134	6619146
*Jammu & Kashmir	156757	15852	12881	185490	122422	45566	58608	67456	26704	1703261	218054	2242071	2427561
Jharkhand	6780	3512	395	10687	74071	50565	11535	91922	13220	356962	11803	610078	620765
Karnataka	1766001	2013	503208	2271221	584131	522239	778646	1776165	15091800	35135248	11008	53899236	56170457
Kerala	10475	-	65	10540	123286	103	-	21161	2888	36622	-	184059	194599
Madhya Pradesh	1252455	128972	311004	1692431	772476	342790	1119260	498580	791417	4128019	308205	7960747	9653178
Maharashtra	528636	137773	34940	701349	765567	235543	126780	69286	681879	1220928	7060	3107044	3808392
Manipur	-	-	-	-	-	-	-	10197	2138	33718	-	46053	46053
Meghalaya	133298	50979	66766	251043	57639	104791	16452	697286	4167752	17819716	720309	23583945	23834988
Nagaland	-	-	-	-	825	-	-	-	1005500	745875	-	1752200	1752200
Odisha	388084	67346	13150	468580	156898	456006	260485	139924	239877	435449	38785	1727424	2196004
Puducherry	-	-	-	-	-	-	-	4433	4333	6966	-	15732	15732
Rajasthan	3299838	220062	1284254	4804154	454148	1838217	4541298	441902	2261727	12946106	1673697	24157095	28961249
Sikkim	-	-	-	-	-	-	-	-	-	2380	-	2380	2380
Tamil Nadu	537272	3836	5915	547024	317801	239742	120594	95885	114647	687457	900	1577025	2124049
Telangana	984751	1450	227926	1214127	509737	142386	299243	118735	893077	11342869	3132280	16438327	17652454
Uttar Pradesh	3720	-	-	3720	-	111910	101510	142763	40000	43540	-	439723	443443
Uttarakhand	-	-	-	-	5035	91872	60429	29486	164879	1191059	33011	1575771	1575771
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 01.04.2020
(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	**50825000**	**17210000**	**110000**	**68145000**	**26474477**	**4189000**	**-**	**-**	**-**	**390000**	**-**	**31053477**	**99198477**
By Grade													
Unclassified	50825000	17210000	110000	68145000	26474477	4189000	-	-	-	390000	-	31053477	99198477
By State													
Gujarat	50825000	17210000	110000	68145000	26474477	4189000	-	-	-	390000	-	31053477	99198477

Figures rounded off

remaining 3% was of other grades (Tables-2 to 6).

Rajasthan was the leading producing State accounting for (21%) of the total production followed by Madhya Pradesh (13%), Andhra Pradesh & Chhattisgarh (12% each),Karnataka(9 %),Telangana (7%) ,Tamil Nadu & Gujarat (6% each) and the remaining 14% 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 24.7 million tonnes and for the year 2020-21 is 24.3 million tonnes.

Average daily labour employment in limestone mines in 2020-21 was 18,838 as against 21,335 in the previous year.

Table – 2 : Principal Producers of Limestone, 2020-21

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 Baloda Bazar Raipur Amreli Bhavnagar Solan Gulbarga Dhar Neemuch Rewa Satna Sidhi Chandrapur Chittorgarh Jaipur Nagaur Ariyalur Perambalur Sonbhadra
Shree Cement Ltd, Post Box No. 33, Bangur Nagar, Beawar – 305 901, Rajasthan.	Chhattisgarh Karnataka Rajasthan	Raipur Gulbarga Ajmer Pali
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 Nagpur Pali
The ACC Ltd, Cement House, 121, Maharshi Karve Road, Mumbai – 400 020, Maharashtra	Chhattisgarh Himachal Pradesh Jharkhand Karnataka Madhya Pradesh Maharashtra Odisha Rajasthan	Durg Bilaspur Singhbhum (W) Gulbarga Katni Yavatmal Bargarh Bundi

(contd)

Table - 2 (contd)

Name and address of producer	Location of mine	
	State	District
Dalmia Cement Ltd (Bharat), Dalmiapuram, Main Road, Kallakudi Lalgudi, Tiruchirappalli- 621 651, Tamil Nadu	Andhra Pradesh Karnataka Odisha Tamil Nadu	Cuddapah Belgaum Sundargarh Ariyalur Tiruchirapalli
J.K.Cement Ltd. Kamla Tower, Kanpur-208 001 Uttar Pradesh	Karnataka Rajasthan	Bagalkot Chittorgarh Nagaur
The Ramco Cement Ltd, 5th Floor, Auras Corporate Centre,98 A, Dr Radhakrishanan Salai, Mylapore,Chennai.- 600 004, Tamil Nadu	Andhra Pradesh Karnataka Tamil Nadu	Krishna Chitradurga Ariyalur Perambalur Thoothukudi Virudhunagar
Century Textiles & Industries Ltd, Century Bhawan, Dr Annie Besant Road, Worli, Mumbai– 400 030, Maharashtra.	Chhattisgarh Madhya Pradesh Maharashtra	Raipur Satna Chandrapur
J.K. Lakshmi Cement Ltd, 4th Floor, Nehru House 4, Bahadur Sah Zafar Marg, New Delhi-110 002	Chhattisgarh Rajasthan	Durg Siroho
Jaiprakash Associates Ltd, Jaypee Group, Sector-128, Noida- 201304, Uttar Pradesh.	Andhra Pradesh Gujarat Madhya Pradesh	Krishna Kutch Rewa

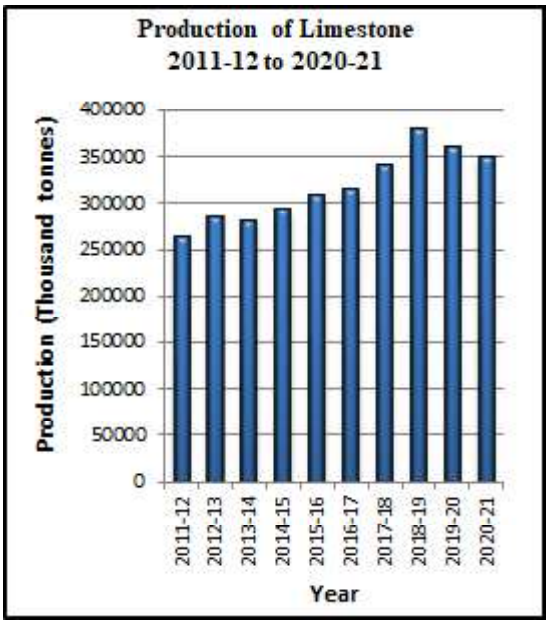

Table – 3 : Production of Limestone, 2018-19 to 2020-21 (By States)

(Qty in '000 tonnes; Value in ₹'000)

State	2018-19		2019-20		2020-21 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	**379974**	**89584491**	**359464**	**88890081**	**349170**	**82659807**
Andhra Pradesh	48295	10227864	42532	9267248	41148	8766490
Assam	1652	531733	1552	500950	1552	468677
Bihar	240	138931	556	263446	1000	193047
Chhattisgarh	42398	9663426	42699	10200663	40378	9416969
Gujarat	26651	5662241	22868	5204303	22245	5017115
Himachal Pradesh	12034	2519275	12527	2746801	11987	2605856
Jammu & Kashmir*	1228	359423	959	280284	1173	322897
Jharkhand	1248	417940	785	339164	324	157084
Karnataka	34378	6103939	34165	6672035	33189	5965087
Kerala	325	230958	398	342144	376	315113
Madhya Pradesh	50102	12271100	47118	12332360	45978	11824339
Maharashtra	14991	3459779	14614	3475512	13939	3341414
Meghalaya	7195	2950307	7248	2988280	6028	2676672
Odisha	5289	1728521	5627	1848621	7187	2234688
Rajasthan	76567	19496173	72390	19094468	74450	18357853
Tamil Nadu	23864	6895558	24461	7151088	21144	5531065
Telangana	30895	6078898	26161	5249950	24498	4740215
Uttar Pradesh	2622	848425	2804	932764	2574	725226

**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, 2019-20 and 2020-21 (By Frequency Groups)

Production group (In tonnes)	No. of mines		Production for the group ('000 tonnes)		Percentage in total production		Cumulative percentage	
	2019-20	2020-21 (P)	2019-20	2020-21 (P)	2019-20	2020-21 (P)	2019-20	2020-21 (P)
All Groups	**691(3)**	**663(4)**	**359464**	**349170**	**100**	**100**	**-**	-
Up to 10000	227(1)	225(3)	278	324	0.08	0.09	0.08	0.09
10001-50000	121(2)	106	3571	2916	0.99	0.84	1.07	0.93
50001-100000	70	62	5257	4501	1.46	1.29	2.53	2.22
100001-200000	47	52(1)	7189	7604	2.00	2.18	4.53	4.40
200001-300000	32	31	8150	7827	2.27	2.24	6.80	6.64
300001-400000	20	23	7132	8011	1.98	2.29	8.78	8.93
400001-500000	21	16	9670	7471	2.69	2.14	11.47	11.07
500001-600000	15	7	8366	3897	2.33	1.12	13.80	12.19
600001-700000	7	8	4598	5312	1.28	1.52	15.08	13.71
700001-800000	10	9	7547	6831	2.10	1.96	17.18	15.67
800001-900000	7	11	5899	9526	1.64	2.73	18.82	18.40
900001-1000000	7	11	6737	10551	1.87	3.02	20.69	21.42
1000001-2000000	51	49	69721	68553	19.40	19.63	40.09	41.05
2000001-3000000	26	27	62905	68181	17.50	19.53	57.59	60.57
3000001 & above	30	26	152444	137665	42.41	39.43	100	100

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

Table –5 : Production of Limestone, 2019-20 & 2020 -21
(By Sectors/States/Districts/Grades)

(Qty in '000 tonnes; Value in ₹'000)

State/District	2019-20						2020-21 (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	**691(3)**	**348520**	**7928**	**3016**	**359464**	**88890081**	**663(4)**	**339520**	**7194**	**2456**	**349170**	**82659807**
Public Sector	**23**	**6027**	**4117**	**-**	**10144**	**4383783**	**22**	**5382**	**3259**	**-**	**8641**	**3717411**
Private Sector	**668(3)**	**342493**	**3811**	**3016**	**349320**	**84506298**	**641(4)**	**334138**	**3935**	**2456**	**340529**	**78942396**
Andhra Pradesh	**72(1)**	**41919**	**613**	**-**	**42532**	**9267248**	**68(1)**	**40665**	**483**	**-**	**41148**	**8766490**
Anantapur	10	3550	22	-	3572	897067	8	4339	15	-	4354	800173
Cuddapah	6	12154	-	-	12154	2504274	6	10301	-	-	10301	1995735
Guntur	12	3586	-	-	3586	738342	12	4360	-	-	4360	811517
Krishna	10	9686	288	-	9974	2617609	10	9627	236	-	9863	2840242
Kurnool	34(1)	12943	303	-	13246	2509956	32(1)	12038	232	-	12270	2318823
Assam	**3**	**1552**	**-**	**-**	**1552**	**500950**	**3**	**1552**	**-**	**-**	**1552**	**468677**
Karbi Anglong	1	98	-	-	98	35302	1	131	-	-	131	44584
North Cachar Hills	2	1454	-	-	1454	465648	2	1421	-	-	1421	424093
Bihar	**1**	**556**	**-**	**-**	**556**	**263446**	**1**	**1000**	**-**	**-**	**1000**	**193047**
Rohtas	1	556	-	-	556	263446	1	1000	-	-	1000	193047
Chhattisgarh	**57**	**42453**	**246**	**-**	**42699**	**10200663**	**54**	**39925**	**453**	**-**	**40378**	**9416969**
Baloda Bazar	4	5832	-	-	5832	1271640	3	5919	-	-	5919	1205809
Bastar	9	27	++	-	27	11846	9	35	++	-	35	10802
Bilaspur	2	290	++	-	290	92628	2	130	240	-	370	147963
Durg	23	7592	246	-	7838	2052474	21	6858	213	-	7071	1819493
Janjgir-Champa	2	2055	-	-	2055	539845	2	1464	-	-	1464	345807
Kabirdham	1	31	-	-	31	19009	1	20	-	-	20	12804
Raipur	16	26626	-	-	26626	6213221	16	25499	-	-	25499	5874291
Gujarat	**115(1)**	**20030**	**-**	**2838**	**22868**	**5204303**	**83(1)**	**19982**	**22**	**2241**	**22245**	**5017115**
Amreli	2	4390	-	-	4390	892665	2	3597	-	-	3597	649089
Bhavnagar	1	181	-	-	181	107513	2	211	-	-	211	36823
Jamnagar	23	1129	-	232	1361	319727	19	2040	-	267	2307	489620
Junagarh	48	7032	-	1098	8130	1803822	26	6494	-	953	7447	1776636
Kutch	3	5203	-	-	5203	1148636	3	5385	-	-	5385	1183365
Porbandar	35(1)	1522	-	1508	3030	780754	28(1)	1886	22	1021	2929	771238

(contd)

Table-5 (contd)

State/District	2019-20						2020-21 (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
Rajkot	2	292	-	-	292	54677	2	99	-	-	99	21261
Surat	1	281	-	-	281	96509	1	270	-	-	270	89083
Himachal Pradesh	**25**	**12383**	**144**	**++**	**12527**	**2746801**	**23**	**11856**	**131**	**-**	**11987**	**2605856**
Bilaspur	1	3735	-	-	3735	683459	1	3084	-	-	3084	571108
Sirmour	22	991	144	++	1135	395983	20	626	131	-	757	335567
Solan	2	7657	-	-	7657	1667359	2	8146	-	-	8146	1699181
Jammu & Kashmir	**17**	**959**	**-**	**-**	**959**	**280284**	**18**	**1173**	**-**	**-**	**1173**	**322897**
Anantnag	6	83	-	-	83	34536	8	-	-	-	-	-
Pulwama	8	455	-	-	455	116907	7	644	-	-	644	146654
Srinagar	3	421	-	-	421	128841	3	529	-	-	529	176243
Jharkhand	**5**	**785**	**-**	**-**	**785**	**339164**	**5**	**324**	**-**	**-**	**324**	**157084**
Palamau	1*	-	-	-	-	-	1*	-	-	-	-	-
Ranchi	2*	-	-	-	-	-	2*	-	-	-	-	-
Singhbhum (West)	2	**785**	-	-	**785**	339164	2	324	-	-	324	157084
Karnataka	**64**	**33774**	**391**	**-**	**34165**	**6672035**	**54**	**32835**	**354**	**-**	**33189**	**5965087**
Bagalkot	44	2810	371	-	3181	866767	35	29919	326	-	3245	852715
Belgaum	6	2041	20	-	2061	439082	5	1858	28	-	1886	420766
Chitradurga	1*	-	-	-	-	-	1*	-	-	-	-	-
Gulbarga	11	28923	-	-	28923	5366186	11	28058	-	-	28058	4691606
Shimoga	1*	-	-	-	-	-	1*	-	-	-	-	-
Tumkur	1*	-	-	-	-	-	1*	-	-	-	-	-
Kerala	**1**	**398**	**-**	**-**	**398**	**342144**	**1**	**376**	**-**	**-**	**376**	**315113**
Palakkad	1	398	-	-	398	342144	1	376	-	-	376	315113
Madhya Pradesh	**134**	**42811**	**4170**	**137**	**47118**	**12332360**	**156(2)**	**42190**	**3686**	**102**	**45978**	**11824339**
Damoh	1	3970	-	-	3970	940816	1	3858	-	-	3858	908986
Dhar	3	2535	-	-	2535	484472	5	2800	-	-	2800	496978
Jabalpur	1	-	28	-	28	25083	1	-	29	-	29	11061
Katni	49	4592	3466	137	8195	298790	62(2)	3664	2893	102	6659	2073049
Narasinhapur	1	-	43	-	43	8216	1	-	28	-	28	6684
Neemuch	4	3380	-	-	3380	636909	4	3887	-	-	3887	716509
Rewa	9	4190	-	-	4190	1265519	9	3847	2	-	3849	1195021
Satna	62	22401	633	-	23034	5564239	69	21888	734	-	22622	5805319
Sidhi	4	1743	-	-	1743	419206	4	2246	-	-	2246	610732

(contd)

Table-5 (contd)

State/District	2019-20						2020-21 (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
Maharashtra	**18**	**14614**	++	++	**14614**	**3475512**	**17**	**13939**	++	-	**13939**	**3341414**
Chandrapur	7	11285	-	-	11285	2543325	5	10888	-	-	10888	2461303
Yavatmal	11	3329	++	-	3329	932187	12	3051	++	-	3051	880111
Meghalaya	**19**	**7248**	**-**	**-**	**7248**	**2988280**	**19**	**6028**	**-**	**-**	**6028**	**2676672**
Jaintia Hills	16	4874	-	-	4874	1436116	16	3796	-	-	3796	1113102
Khasi Hills East	3	2374	-	-	2374	1552164	3	2232	-	-	2232	1563570
Odisha	**7(1)**	**5609**	**18**	**-**	**5627**	**1848621**	**7**	**7187**		**-**	**7187**	**2234688**
Bargarh	1	957	-	-	957	386567	1	842	-	-	842	408891
Koraput	1	167	-	-	167	50157	1	172	-	-	172	51704
Sundargarh	5(1)	4485	18	-	4503	1411897	5	6173	-	-	6173	1774093
Rajasthan	**38**	**70022**	**2327**	**41**	**72390**	**19094468**	**38**	**72309**	**2028**	**113**	**74450**	**18357853**
Ajmer	2	1961	-	-	1961	502366	2	2341	-	-	2341	551710
Banswara	1	1237	-	-	1237	309335	1	1084	-	-	1084	243015
Bundi	1	1159	-	-	1159	333771	1	1041	-	-	1041	324756
Chittorgarh	10	26676	-	-	26676	6945130	11	29173	-	-	29173	7019056
Jaipur	1	4333	-	-	4333	1364824	1	3901	-	-	3901	1275374
Jaisalmer	2	578	2327	-	2905	1256648	2	592	2028	-	2620	1352168
Jhunjhunu	1	-	-	-	-	-	1*	-	-	-	-	-
Kota	1	2562	-	-	2562	702072	1	2760	-	-	2760	753448
Nagaur	5	1021	-	41	1062	470267	7	1156	-	113	1269	557932
Pali	6	18514	-	-	18514	3866910	6	18310	-	-	18310	3651314
Sikar	1*	-	-	-	-	-	-	-	-	-	-	-
Sirohi	5	10559	-	-	10559	2991799	3	10425	-	-	10425	2246381
Udaipur	2	1422	-	-	1422	351346	2	1526	-	-	1526	382699
Tamil Nadu	**82**	**24442**	**19**	**-**	**244461**	**7151088**	**83**	**21107**	**37**	**-**	**21144**	**5531065**
Ariyalur	38	12089	19	-	12108	2926303	39	11288	37	-	11325	2644441
Coimbatore	3	901	-	-	901	392471	-	-	-	-	-	-
Dindigul	4	3209	-	-	3209	1012239	4	2544	-	-	2544	753939
Karur	1	737	-	-	737	248241	1	529	-	-	529	177864
Perambalur	19	3001	-	-	3001	812122	18	2576	-	-	2576	689990
Salem	4	483	-	-	483	256784	4	479	-	-	479	159861

(contd)

Table-5 (concld)

State/District	2019-20						2020-21 (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
Thoothukudi (Tuticorin)	2	1185	-	-	1185	635598	4	1070	-	-	1070	502658
Tiruchirapalli	9	2385	-	-	2385	529381	9	2317	-	-	2317	459945
Tirunelveli	1	150	-	-	150	181477	1	-	-	-	-	-
Virudhunagar	1	302	-	-	302	156472	1	304	-	-	304	142367
Telangana	**31**	**26161**	**-**	**-**	**26161**	**5249950**	**31**	**24498**	**-**	**-**	**24498**	**4740215**
Adilabad	3	3717	-	-	3717	750872	3	2954	-	-	2954	575505
Karimnagar	2	846	-	-	846	337102	2	958	-	-	958	342266
Nalgonda	22	16623	-	-	16623	3288683	22	16676	-	-	16676	3120238
Rangareddy	4	4975	-	-	4975	873293	4	3910	-	-	3910	702206
Uttar Pradesh	**2**	**2804**	**-**	**-**	**2804**	**932764**	**2**	**2574**	**-**	**-**	**2574**	**725226**
Sonbhadra	2	2804	-	-	2804	932764	2	2574	-	-	2574	725226

(++): 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, 2019-20 & 2020-21 (By States/Grades)

(In '000 tonnes)

State	2019-20				2020-21 (P)			
	Grades				Grades			
	Cement	LD, SMS & BF	Chemical	Total	Cement	LD, SMS & BF	Chemical	Total
India	**20541**	**2739**	**1495**	**24775**	**19992**	**2898**	**1466**	24356
Andhra Pradesh	370	85	6	461	314	99	6	419
Assam	25	-	-	25	21	-	-	21
Chhattisgarh	1900	54	-	1954	2498	148	-	2646
Gujarat	1334	3	1322	2659	1245	-	1326	2571
Himachal Pradesh	242	58	-	300	189	48	-	237
Jammu & Kashmir*	48	-	-	48	226	-	-	226
Jharkhand	11	4	-	15	11	4	-	15
Karnataka	3773	657	-	4430	2664	610	-	3274
Kerala	1	-	-	1	1	-	-	1
Madhya Pradesh	4501	1299	39	5839	4721	1228	51	6000
Maharashtra	45	9	++	54	83	6	++	89
Meghalaya	109	-	-	109	132	-	-	132
Odisha	394	422	-	816	310	413	-	723
Rajasthan	6147	33	127	6307	6251	221	83	6555
Tamil Nadu	894	115	1	1010	899	121	++	1020
Telangana	747	-	-	747	427	-	-	427

++: 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 is nil during 2020-21 compared to 4600 tonnes in the preceding year.

There were nil reporting mines in 2020-21 as compared to 2 reporting mines in 2019-20.

Mine-head closing stocks of limeshell in the year 2020-21 was 609 tonnes as against 6,921 tonnes in the previous year.

The average daily employment of labour during the year 2020-21 was nil as against 244 in the previous year (Tables-7 to 9).

Table – 7 : Production of Limeshell, 2018-19 to 2020-21
(By States)

(Qty in tonnes; Value in ₹'000)

State	2018-19		2019-20		2020-21 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	**7534**	**27780**	**4600**	**18730**	**-**	**-**
Karnataka	3538	10699	1017	3051	-	-
Kerala	3996	17081	3583	15679	-	-

Table – 8 : Production of Limeshell, 2019-20 & 2020-21
(By Sectors/States/Districts)

(Qty in tonnes; Value in ₹'000)

State/District	2019-20			2020-21 (P)		
	No. of mines	Quantity	Value	No. of mines	Quantity	Value
India	**2**	**4600**	**18730**			
Public sector	-	-	-	-	-	-
Private sector	2	4600	18730	-	-	-
Karnataka	**1**	**1017**	**3052**	**-**	**-**	**-**
North Kannada	1	1017	3051	-	-	-
Kerala	**1**	**3583**	**15679**	**-**	**-**	**-**
Kottayam	1	3583	15679	-	-	-

Table – 9 : Mine-head Closing Stocks of Limeshell, 2019-20 & 2020-21
(By States)

(In tonnes)

State	2019-20	2020-21 (P)
India	**6921**	**609**
Karnataka	6921	609

Marl

Production of marl during 2020-21 was 2,202 thousand tonnes as compared to 2,149 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 9 associate mines reporting production of marl during 2020-21 as compared to 8 associate mines in the previous year. The entire production was reported by Private Sector mines.

Entire production of marl during 2020-21 was reported from Gujarat and Tamil Nadu.

Mine-head closing stock at the end of 2020-21 was 600 thousand tonnes as against 881 thousand tonnes in the previous year (Tables-10 to 13).

Table – 10 : Principal Producers of Marl, 2020-21

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
*Rajesh Sadurbha Kar,, Ashapura Society, Near SBI, Surajkaradi, Okhamandal, jamnagar-361347	Gujarat	Jamnagar
*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 – 11 : Production of Marl, 2018-19 to 2020-21
(By States)

(Qty in tonnes, Value in ₹'000)

State	2018-19		2019-20		2020-21 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India	**1890308**	**349420**	**2148854**	**412463**	**2202331**	**379778**
Gujarat	1794940	324720	1646104	318711	1286248	219191
Tamil Nadu	95368	24700	502750	93752	916083	160587

Table – 12 : Production of Marl, 2019-20 and 2020-21
(By Sector/States/Districts)

(Qty in tonnes; Value in ₹'000)

State/District	2019-20			2020-21 (P)		
	No. of mines	Quantity	Value	No. of mines	Quantity	Value
India	**(8)**	**2148854**	**412463**	**(9)**	**2202331**	**379778**
Private Sector	(8)	2148854	412463	(9)	2202331	379778
Gujarat	**(5)**	**1646104**	**318711**	**(5)**	**1286248**	**219191**
Amreli	(2)	1397544	274767	(2)	1197567	208477
Jamnagar	(1)	39431	8557	(1)	23048	3236
Junagadh	(1)	27306	3932	(1)	15733	3286
Porbandar	(1)	181823	31455	(1)	49900	4192
Tamil Nadu	**(3)**	**502750**	**93752**	**(4)**	**916083**	**160587**
Ariyalur	(3)	502750	93752	(4)	916083	160587

Figures in parentheses indicate associated mines with limestone

Table – 13 : Mine-head Closing Stocks of Marl, 2019-20 & 2020-21 (By States)

(Qty in tonnes)

State	2019-20	2020-21 (P)
India	**880715**	**600254**
Gujarat	661770	381309
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-14.

Table – 14 : 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 - 15.

Table - 15 : 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

Exports of limestone decreased by 6% to 3.53 million tonnes in 2020-21 from 3.76 million tonnes in the previous year. Limestone in bulk was exported mainly to Bangladesh (98%) and UK (1%). On the other hand, during the same period, exports of chalk decreased moderately by 16% to 1,104 tonnes from 1,317 tonnes in the previous year. Chalk was exported mainly to Nepal (85%), Congo (7%), Nepal (4%) and UAE (2%).

Exports of bleaching powder decreased moderatly by 10% at 21,509 tonnes in 2020-21 as compared to 23,948 tonnes in the previous year. Bleaching powder was exported mainly to Bangladesh (74%), Sri Lanka (8%) and Nepal (5%) besides other countries.

In 2020-21, about 129 tonnes of calcium carbide was also exported as against 370 tonnes in the previous year registering a massive decrease of 65%. Exports were mainly to Bangladesh (64%) and Bhutan (36%). (Tables-16 to 19).

Imports

Imports of limestone decreased moderately by 11% to 22.80 million tonnes in 2020-21 from 25.64 million tonnes in the previous year. On the other hand, imports of chalk in 2020-21 drastically decreased by

37% to 66 tonnes as against 105 tonnes in the previous year. Limestone was imported mainly from UAE (83%), Oman (12%), Vietnam (2%) and Malaysia (3%), while chalk was imported mainly from France (61%), Belgium (15%), Germany (8%) and Italy & China (6% each).

Imports of calcium carbide increased marginally by 5% to 32,665 tonnes in 2020-21 from 31,217 tonnes in the previous year. Calcium carbide was imported mainly from China (90%) and Indonesia (10%).The imports of bleaching powder during 2020-21 increased considerably by 100% to 34 tonnes as against 17 tonnes in the previous year. Imports were mainly from USA (82%) and Argentina (12%) (Tables-20 to 21).

Table – 16 : Exports of Limestone (By Countries)

Country	2019-20 (R)		2020-21 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**3760402**	**4656567**	**3528973**	**42939083**
Bangladesh	3651531	3048496	3447674	41950799
UK	49217	527767	31871	379721
USA	8670	552076	7481	175659
Nepal	15818	90626	17098	106929
Ireland	5426	63966	6136	77425
Korea, Rep. of	2491	24577	3308	34268
Belgium	2997	37964	1670	21699
UAE	1431	35296	741	21454
Cango P Rep	954	7338	1440	15583
Bhutan	1463	13968	1211	14676
Other countries	20404	254493	10343	140870

Figures rounded off

Table – 17 : Exports of Chalk (By Countries)

Country	2019-20 (R)		2020-21 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**1317**	**8022**	**1104**	**6155**
Nepal	1170	6230	936	4281
Egypt	40	463	47	495
UAE	3	86	25	449
Congo	14	208	79	446
Qatar	9	112	8	332
Sri Lanka	16	140	1	31
USA	3	6	4	25
Myanmar	--	--	1	19
Bhutan	++	6	1	12
Maldives	++	31	1	11
Other countries	62	740	1	54

Figures rounded off

Table – 18 : Exports of Bleaching Powder (By Countries)

Country	2019-20 (R)		2020-21 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**23948**	**677278**	**21509**	**734237**
Bangladesh	19120	485468	15834	468720
USA	869	80581	814	71779
Sri Lanka	1420	42572	1615	52816
Vietnam	201	12793	639	40912
Nepal	1353	22759	1160	23736
Malaysia	494	15835	484	19394
Kenya	--	--	146	12132
Canada	22	1608	110	8520
Ethiopia	87	3368	166	6127
Saudi Arabia	72	2694	120	5481
Other countries	310	9600	421	24620

Figures rounded off

Table – 19: Exports of Calcium Carbide (By Countries)

Country	2019-20 (R)		2020-21 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**370**	**24367**	**129**	**11213**
Bangladesh	210	13157	82	6221
Bhutan	15	1554	47	4706
USA	++	5	++	109
Mozambique	--	--	++	72
Singapore	++	31	++	45
Germany	1	739	++	30
UAE	--	--	++	24
Tanzania Rep	--	--	++	4
Ghana	--	--	++	2
Saudi Arabia	98	5727	--	--
Other countries	46	3154	--	--

Figures rounded off

Table – 20 : Imports of Limestone (By Countries)

Country	2019-20 (R)		2020-21 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**25639508**	**37429909**	**22797801**	**32911759**
UAE	20486739	25649009	18835897	23618001
Oman	2976722	5135376	2623396	4505778
Malaysia	858121	3597632	635579	2739907
Vietnam	973044	2045668	489553	1172453
Egypt	49421	149651	52930	209827
Thailand	32064	263272	14338	163346
Philippines	64900	114234	66950	129086
China	7487	94729	7070	120656
Iran	16720	48189	20090	63539
Bhutan	36317	78063	27261	61919
Other countries	137973	254086	24737	127247

Figures rounded off

Table –21 : Imports of Chalk (By Countries)

Country	2019-20 (R)		2020-21 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**105**	**4131**	**66**	**2661**
France	40	1042	40	1110
Belgium	8	400	10	583
Italy	11	958	4	381
China	2	261	4	182
Taiwan	--	--	++	179
Germany	15	331	8	167
Vietnam	++	6	++	58
UK	12	538	++	1
Switzerland	6	277	--	--
Spain	11	233	--	--
Other countries	++	85	--	--

Figures rounded off

Table – 22 : Imports of Calcium Carbide (By Countries)

Country	2019-20 (R)		2020-21 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**31217**	**1450665**	**32665**	**1774852**
China	30559	1417839	29248	1580788
Indonesia	540	29707	3384	193334
Dominica	--	--	33	730
Bhutan	34	1613	--	--
UAE	84	1487	--	--
Germany	++	19	--	--

Figures rounded off

Table – 23 : Imports of Bleaching Powder (By Countries)

Country	2019-20 (R)		2020-21 (P)	
	Qty (t)	Value (₹'000)	Qty (t)	Value (₹'000)
All Countries	**17**	**2780**	**34**	**5524**
USA	15	1919	28	3656
Argentina	2	836	4	1714
Japan	--	--	2	129
Switzerland	++	3	++	22
Germany	++	22	++	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 Government of India's new policy of allotment of mining blocks through auctioning. Up to 2022-23, a total of 241 blocks were auctioned. Out of these 241 blocks, 74 blocks were limestone blocks.