IS: 7779 (Part 111/Sec 2) - 1980

Indian Standard

SCHEDULE FOR PROPERTIES AND AVAILABILITY OF STONES FOR CONSTRUCTION PURPOSES

PART III TAMIL NADU STATE

Section 2 Engineering Properties of Building Stones

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Indian Standard

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PART III TAMIL NADU STATE

Section 2 Engineering Properties of Building Stones

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(Continued from page 1)	
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Indian Standard

SCHEDULE FOR PROPERTIES AND AVAILABILITY OF STONES FOR CONSTRUCTION PURPOSES

PART III TAMIL NADU STATE

Section 2 Engineering Properties of Building Stones

0. FOREWORD

0.1 This Indian Standard (Part III/Sec 2) was adopted by the Indian Standards Institution on 29 February 1980, after the draft finalized by the Stones Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Stones are available in large quantities in different parts of the country. To choose and utilize them for various purposes, it is necessary to know their availability as well as their various physical properties. Accordingly this standard is formulated to cover such information. It is hoped that with the publication of this standard it would be convenient for the users to know the location of various types of stone, and it would also act as a guide for their proper selection depending upon their particular use. This standard will give a general information for prospective builders who use stone and stone aggregates. The final acceptance of these materials in any work would, however, be subject to the physical standards and other specifications and quality control requirements stipulated for individual works.

0.2.1 This standard is being published in parts, each part covering one State. For facility in compilation and use of the standard, each part is divided in three sections. Accordingly Part III covers Tamil Nadu State and is being issued in three sections.

0.3 The information contained in this section is based on the data provided by Public Works Department, Government of Tamil Nadu and covers data collected up to the end of 1979. Further information as and when available will be published as addendum to this standard.

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0.4 In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated is to be rounded off, it shall be done in accordance with IS : 2-1960*.

1. SCOPE

1.1 This standard (Part III/Sec 2) covers engineering properties of building stones of Tamil Nadu State.

2. TEST RESULTS

2.1 The test results of various types of building stones tested for some of the important properties according to relevant Indian Standards are given in Table 1.

^{*}Rules for rounding off numerical values (revised).

TABLE 1 TEST RESULTS OF ENGINEERING PROPERTIES OF BUILDING STONES - TAMIL NADU STATE

(Clause 2.1)

Sl No.	LOCATION	ROCK TYPE	Colour (18 : 1123- 1975*)	Structure AND TEXTURE (IS:1123-1975*)	Apparent Specific Gravity (IS : 1124-	WATER Absorption, Percent (IS : 1124-	,	Compressive Strength kg/cm ² [IS:1121 (Part I)-1974t]				SE STRENGTH /cm ² ART II)-1974§]	DURABILITY, PERCENT LOSS (IS:1126-	
				(15,1123-1575*)	1974†)	1974†)	Tested Surf	Tested Saturated Surface Dry		Tested Dry		Tested in Dry	`1974∥)	
							Parallel to grain	Perpendi- cular to grain	Parallel to grain	Perpendi- cular to grain	Condition	Condition		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
I	COIMBATORE DIS	TRICT												
1.	Amaravathi Nagar	Biotite gneiss	Leucocratic	Gneissic, hypidiomorphic medium grained	2.62	0.46		555.50		_	164·50		2.81	Low compressive strength due to the presence of biotite
2.	. Coimbatore	Hornblende biotite gneiss	do	Gneissic, hypidiomorphic coarse grained	2.64	0.21	-	682·40		—	134.00		0.32	-
3.	Parambikulam Aliyar	Charnockite	do	Massive, hypidiomorphic fine grained	2.69	0.52		813.60	_	_	163·00	-	0.84	-
4.	. Sholayar Nagar	Hornblende biotite gneiss	do	Grambitic, foliated, hypidiomorphic medium grained	2 ·66	0 50		948·20	-		95· 48		4 ·47	-
п	CHINGLEPUT DIS	TRICT												
5	. Tiruttani	Biotite granite	Leucocratic	Massive, hypidiomorphic medium grained	2.68	0.81	-	580·70		-	176.00	_	0.29	Low compressive strength due to the predomi- nance of biotite
6.	. Tiruttani	do	do	Massive, hypidiomorphic coarse grained	2.63	0.20	-	798 ∙90		-	191.00	-	9.54	
III	KANYAKUMARI L	DISTRICT												
7.	. Andoor Quarry Kalkulam Taluk	Genetiferous biotic gnciss	Leucocratic	Gneissic, hypidiomorphic mcdium grained	2.86	0.47	-	357-61		551.06	177-95	177.97	1-97 (20 cycles) 2:34 (34 cycles)	Low compressive strength due to predominance of granite and biotite
														(Continued)

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SI, LOCATION No.	LOCATION	ROCK TYPE	Colour (18 : 1123- 1975*)	STRUCTURE AND TEXTURE	GRAVITY	WATER Absorption, Percent	[Сомркеssiv kg, IS:1121 (Р	/cm ²		TRANSVERS kg/c [IS:1121 (PA	е Strength cm ² rt II)-1974§]	DURABILITY, Percent Loss] (IS:1126-	Remarks
				(IS:1123-1975*)	(IS : 112 4- 1974†)	(IS : 1124- 1974†)	Tested Saturated Surface Dry		Tested Dry		Tested in Wet	Tested in Dry	1974)	
							Parallel to grain	Perpendi- cular to grain	Parallel to grain	Perpendi- cular to grain	Condition	Condition		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
8.	Cheruppalur	Biotite granite	Leucocratic	Massive, hypidiomorphic medium grained	2.67	0.29	-	791.80			108.00		5.23	-
9.	Tiruvettar	Charnockite	Leucocratic grey	do	2.79	0.55	-	738-20		-	198.00	_	1.17	-
IV	MADURAI DISTR	NCT												
10.	Manjalar Dam Devanampatti	Charnockite	Leucocratic brownish grey	Granular, hypidiomorphic medium grained	2.76	0-28	_	707-50	_	-	159-20		1-21	-
11.	Manjalar Dam	do	Leucocratic light grey	Foliated, hypidiomorphic medium grained	2.68	0 [.] 19		692-20	-	—	221 90		1.75	
12.	Manjalar Dam	do	Leucocratic	Massive, hypidiomorphic coarse grained	2.71	0.50	_	626 ∙60		_	245.00	—	1.12	-
13	Manjalar Dam	Genetiferous gneiss	Leucocratic pinkish	Foliated, gneissic, hypidiomorphic coarse grained	2 64	-		760.00				_	3.97	
14.	Ma durai	Granite	Leucocratic	Massive, hypidiomorphic coarse grained	2.62	0.38		700.40	_		103 50		1.92	—
v	NORTH ARCOT	DISTRICT												
15	. Sathanur	Charnockite	Leucocratic bluish g r ey	Massive, hypidiomorphic medium grained	2.73	-		810.40	_		_	-	0.39	-

TABLE 1 TEST RESULTS OF ENGINEERING PROPERTIES OF BUILDING STONES - TAMIL NADU STATE - Contd

(Continued)

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			TABLE 1	TEST RESULTS C	OF ENGINE	RING PROP	PERTIES	OF BUILDI	NG STONI	es — tamii	L NADU STA	FE — Contd		
Sl No.		Rock Type	Colour (IS : 1123- 1975*)	STRUCTURE AND TEXTURE (IS: 1123-1975*)	Apparent Specific Gravity (IS : 1124-	WATER Absorption Percent (IS : 1124-	,	COMPRESSIVE STRENGTH TRANSVERSE STRENGTH kg/cm² kg/cm² [IS:1121 (PART I)-1974‡] [IS:1121 (PART II)-1974\$]					DURABILITY, PERCENT LOSS (1S:1126-	
				(10.1120-1070)	1974†)	1974†)	Tested Saturated Surface Dry		Tested Dry		Tested in Wet Condition	Tested in Dry Condition	1974)	
							Parallel to grain	Perpendi- cular to grain	Parallel to grain	Perpendi- cular to grain	Condition	Condition		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
VI	BAMNAD DISTRIC	T												
16.	Aruppukottai	Biotite granite gneiss	Leucocratic pink	Gneissic, massive, hypidiomorphic medium grained	2.62	0.58		761-10			195 ∙00	_	0.30	_
17.	Aruppukottai	Pink granite	Leucocratic	Massive, hypidiomorphic medium grained			501.90	569·90	7 38•20	826.80	170.04	205.61	_	_
18.	Aruppukottai	Charnockite	Mesocratic grey	do		_	807.10	915·30	620 [.] 10	836·63	215 ∙36	181.30	0·30 (20 cycles) 0·53 (30 cycles)	-
19.	Kundrakudi	Pink granite	Leucocrati c	do		_	383·8 7	413·35	255-90	305-05	102-76	122.32	-	-
20.	Mandapam Camp	Coral	do	Coralline,	1 14	30 66	-	156.40	—	-		39.80	4 ∙00	
21.	Sr ivilliputhur	Charnockite	Leucocratic grey	Massive, hypidiomorphic medium grained	2.67	0.29	406·80	458·90	246 .00	488·70	196.93	174.00	1·28 (20 cycles) 1·57 (30 cycles)	_
22.	Thirumelai Quarry Sivaganga	Granite gneiss	Leucocratic	Gneissic, foliated, hypidiomorphic medium grained	-	· _	244.54	265·09	515.53	662 ·00	158.10	152.61	(30 cycles y	Disintegrated after 10 cycles
23.	Va chiyur Quarry Sivaganga	do	do	do		_	277·39	456·02	564·79	656·19	138.16	130.20	-	Disintegrated after 9 cycles
VII														
24	Kondampatti Village Namakkal Taluk	Charnockite	Mesocratic	Massive, hypidiomorphic	2•85	0.54	-	1 266 46		1 053-19	218.81	201.54	0·25 (20 cycles) 0·34 (30 cycles)	-
25.	Uttambadi Quarry Namakkal Taluk	do	do	Massive, hypidiomorphic medium grained	2.99	0.34		736-26	-	753.63	205 ·62	221-46	0.28 (20 cycles) 0.39	-
				mourain grantu									(30 cycles)	(Continued)

	1	TABLE I TE	ST RESULTS OF E	NGINEERIN	G PROPER	TIES OF	BUILDING	STUNES -	- TAMIL N	ADU SIATE-	– Conta		
LOCATION	Воск Туре	Colour (18:1123- 1975*)	STRUCTURE AND TEXTURE	GRAVITY	Percent	[Сомргеззіv kg, IS:1121 (Р	E STRENGT (cm ² ART I)-197	сн [4‡]	kg/c	cm ²	DURABILITY, PERCENT LOSS] (IS:1126-	Remarks
			(13.1125-15/5)	1974†)	1974†)			Tested Dry		Tested in Wet Condition	Tested in Dry Condition	107 117	
						Parallel to grain	Perpendi- cular to grain	Parallel to grain	Perpendi- cular to grain	Condition	Condition		
()) (2) SOUTH ARCOT DI	(3) STRICT	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Kallakurichi	Charnockite	Mesocratic	Massive, hypidiomorphic medium grained	2.68	0.54	, 	636.51		708.80	-	_	0.65 (20 cycles) 0.76 (30 cycles)	<u> </u>
Peramakal Quarry Tindivanam Taluk	do	do	do	2.76	0.52		954 ·70	_	782.50	237.76	304 .50	0.99 (20 cycles) 1.23 (30 cycles)	
Tiruvakari Quarry Tindivanam Taluk	Granite	Leucocratic	do	3 04	0.13		690·44	-	706.77	174-25	161 09	0.80 (20 cycles) 1.11 (30 cycles)	
Tiruvakkarai Quarry Tindivanam Taluk	Charnockite	Mesocratic	do	2.81	0.24		398-31		410.12	292.64	225 41	0.89 (20 cycles) 1.25	—
Tirukoilur Anthibi + Quarr	Granite y	Leucocratic	do	2.64	0.38	—	663·37	_	830·99	126.37	122.59	1·99 (20 cycles) 2·77	
TIRUNELVELI DIS	STRICT											(000)0007	
Ambasamudram	Charnockite	Mesocratic	Massive, hypidiomorphic medium grained		_	351.52	515.55	451•13	456 99	143 [.] 91	157.10	0.60 (20 cycles) 0.70 (30 cycles)	-
Manimuthar Tirunelveli	do	Leucocratic bluish grey	do	2.66	0.40	574.17	928-63	4 95∙ 0 6	749·93	303.19	234·64	1.89 (20 cycles) 2.19 (30 cycles)	· · · ·
TIRUCHI DISTRI	CT											(00 0)0100 /	· #
Easini Quarry Perambalur Taluk	Charnockite	Mesocratic	Massive, hypidiomorphic	2.77	0.22	_	544.61	672.59	_		—	0.96 (20 cycles) 12.5	
	 (2) SOUTH ARCOT DI Kallakurichi Peramakal Quarry Tindivanam Taluk Tiruvakari Quarry Tindivanam Taluk Tiruvakkarai Quarry Tindivanam Taluk Tiruvakkarai Manimuthar Tirunelveli TIRUCHI DISTRI Easini Quarry Perambalur 	LOCATION ROCK TYPE () (2) (3) SOUTH ARCOT DISTRICT Kallakurichi Charnockite Peramakal do Quarry Tindivanam Taluk Tiruvakari Granite Quarry Tindivanam Taluk Tiruvakkarai Charnockite Quarry Tindivanam Taluk Tiruvakkarai Charnockite Quarry Tindivanam Taluk Tiruvakkarai Charnockite Quarry Tindivanam Taluk Tiruvakkarai Charnockite Manimuthar do TIRUCHI DISTRICT Easini Quarry Charnockite	LOCATION ROCK TYPE COLOUR (1S:1123- 1975*) (2) (3) (4) SOUTH ARCOT DISTRICT Kallakurichi Charnockite Mesocratic Peramakal do do Quarry Tindivanam Taluk Tiruvakari Granite Leucocratic Quarry Tindivanam Taluk Tiruvakkarai Charnockite Mesocratic Quarry Tindivanam Taluk Tiruvakkarai Charnockite Mesocratic Quarry Tindivanam Taluk Tiruvakkarai Charnockite Mesocratic Manimuthar Granite Leucocratic Manimuthar do Leucocratic Manimuthar do Leucocratic Manimuthar do Leucocratic Perambalur Charnockite Mesocratic	LOCATION ROCK TYPE COLOUR (1S:1123- 1975*) STRUCTURE AND TEXTURE (1S:1123-1975*) () (2) (3) (4) (5) SOUTH ARCOT DISTRICT Kallakurichi Charnockite Mesocratic Massive, hypidiomorphic medium grained Peramakal do do do do Quarry Tindivanam Taluk Tiruvakari Granite Leucocratic do Quarry Tindivanam Taluk Tiruvakkarai Charnockite Mesocratic do Quarry Tindivanam Taluk Tiruvakkarai Charnockite Mesocratic do TIRUNELVELI DISTRICT Ambasamudram Charnockite Mesocratic Massive, hypidiomorphic medium grained Manimuthar do Leucocratic do Massive, hypidiomorphic medium grained Manimuthar do Leucocratic do TIRUCHI DISTRICT Easini Quarry Charnockite Mesocratic Massive, hypidiomorphic medium grained	LOCATION ROCK TYPE COLOUR (15:1123- 1975*) STRUCTURE APPARENT SPECIFIC TEXTURE (15:1123-1975*) (15:1124- 1974*) (15:1124- 1975*) (16:1124- 1975*) (16:1124- 1975*) (17:1124- 1975*) (17:1124- 1975*) (17:1124- 1975*) (18:1124- 1975*) (18:11	LOCATION ROCK TYPE COLOUR (1S:1123- 1975*) STRUCTURE AND TEXTURE (1S:1123-1973*) AFFARENT WATER AND TEXTURE (1S:1123-1973*) AFFARENT WATER AND TEXTURE (1S:1124- 1974†) (1S:1124- 1974†) (1S:1124- 1	LOCATION ROCK TYPE COLOUR (18:1123- 1975*) STRUCTURE AND TEXTURE (18:1123-1973*) APARENT MATER AND TEXTURE (18:1123-1973*) APARENT MATER SPECIFIC GRAVITY (18:1124- (15:1124-	Location Rock Type Colour (15:1123- 1973*) TEXTURE (15:1123- 1973*) TEXTURE (15:1123- TEXTURE (15:1123-1973*) Gravite Absorption, Factor (15:1121- (15	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	LOCATION ROCK TYPE (COLOUR (18:1123-1975*) STRUCTURE (18:1124-1975*) (18:1124-1975*) (18:1124-1975*) (18:1124-1975*) (18:1124-1975*) (18:1124-1977*) (19:1121-1977*) (Location Rock Type (15:1123- 1975*) Corota (15:1123- 1975*) Structrune AND Texture (15:1124- 1974*) APAREST Recorry (15:1124- 1974*) Water Assource (15:1124- 1974*) Compassave Structure Assource (15:1124- 1974*) Tested Started Structure (15:1124- 1974*) Tested Started Structure (15:1124- 1974*) Tested Started Structure (15:1124- 1974*) Tested Started Structure (15:1124- 1974*) Tested Started Structure (15:1124- 1974*) Tested Started Structure (15:1124- 1974*) Tested Started Started Structure (15:1124- 1974*) Tested Started	Locartos Rock Tyre (15:1123, 1975*) Colour (15:1123, 1975*) Structure (15:1123, 1975*) Arpanent And The Structure (15:1124, 15747) Water (15:1124, 15747) Compressent Structure (15:1124, 15747) Takestruce (15:1124, 15747) Takestruce (16:112, 15747) Takestruce (16:112, 15747) Takestruce (16:112, 15747) Takestruce (16:112, 15747) Takestruce (17:124, 15747) Takestruce (17:124, 15747) Takestruce (17:124, 15747) Takestruce (17:124, 15747) Takestruce (17:124, 15747) Takestruce (17:124, 15747) Takestruce (18:1124, 15747) <thtakestruce (18:1124, 15747) Takestruce (</thtakestruce 	(15: 1123- 1975*) AND TEXTURE (18: 1123-1973*) Second TEXTURE (18: 1124- 1974*) Second TEXTURE (18: 1124- 1974*) Construction (18: 1124- 1974*) Pancaser Losi (18: 1124- 1974*) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) SOUTH ARCOT DISTRICT Massive, medium grained 2-68 0-27 - 954.70 - 706.90 - - 0.05 Condition Tindivanam Taluk do do 2.76 0-27 - 954.70 - 706.77 174.25 161.09 0.09 (20 eycles) 0.02 eycles) Tinuka Ti

Method of test for determination of strength properties of natural building stones: Part I Compressive strength (first revision). §Method of test for determination of strength properties of natural building stones: Part II Transverse strength (first revision). |Method of test for determination of durability of natural building stones (first revision).

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