

MOULDING SANDS

Sizing analysis of sands received from the Director of Mines and the Chief Mechanical Engineer, Transport Commission. The samples received from the Transport Commission and stated to be obtained from Relbia, Boyer, Bridgewater and Ross were stated to be types of material used by them for moulding purposes. The material from Ross is a sandstone and is pulverised to a sand. The sample pulverised readily to a product minus ten mesh B.S. Screen. Sample Reg. Nos. 921-3 (82 x 12, 82 x 13, 82 x 14) were supplied by Russell Allport and application are shown under "Description". Sample No. 924 (82 x 15) was supplied by Robinsons Foundry and consisted entirely of readily crushed lumps. Sample No. 922 (82 x 13) is a used material consisting originally of a mixture of moulding sand and coal dust.

The examinations are restricted to sizing analyses and the screens used were British Standard. Percentages of clay in the tables refer to material having a free settling velocity of less than 0.2 m.m per second.

Description

<u>Reg. No.</u>	<u>Received from</u>	<u>Description and locality</u>
899	Director of Mines	No.10, 82C <i>Claremont</i>
900	" " "	" 11, " <i>Throck's Hat Sand</i>
1	" " "	" 12, " <i>Baths of Rd. L. of Man</i>
2	" " "	" 13, " <i>Wandale</i>
3	" " "	47 K1 <i>Wandale</i>
4	" " "	" K2 -
5	" " "	" K3 -
6	" " "	" K4 -
7	" " "	" K5 -
8	" " "	" K6 <i>South w. Rly Stn</i>
9	" " "	" K7 -
910	" " "	" K8 -
1	" " "	" K9 -
921	" " "	82 x 12, 2 miles from New Norfolk, supplied by Russell Allport, Non-ferrous moulding.
2	" " "	82 x 13, supplied by Russell Allport, General moulding.
3	" " "	82 x 14, Bridgewater, supplied by Russell Allport, "Original sand".
4	" " "	82 x 15, Robinsons Foundry. <i>Moulding Sand</i>

<u>Reg.No.</u>	<u>Received from</u>	<u>Description and locality</u>
927	Chief Mechanical Engineer.	1, Relbia, Ferrous moulding, "present supply, inferior to past supply".
8	Transport Commission	2, Relbia, Ferrous moulding, "past supply, superior to No. 1 sample.
9	Transport Commission	3, Boyer, Brass Moulding, Derwent Valley Line.
930	" "	4, Bridgewater, "Ferrous & Brass, Core sand".
1	" "	5, Ross, Sandstone, used pulverised, "Core moulds".
966	Director of Mines	82 x 16, Knocklofty. )
967	" "	82 x 17 South Arm. ) <i>Scott</i>
8	" "	82 x 18 Moonah. ) <i>Berry.</i>
9	" "	82 x 19 ) Between Cascade
970	" "	82 x 20 ) Brewery and Huon Road

Signed : W.St. C. Manson

CHIEF CHEMIST & METALLURGIST

13th Jan, 1947

Mesh Size	Reg. No. 899		Reg. No. 900		Reg. No. 901		Reg. No. 902		Reg. No. 903	
	% Weight	% Cum								
+ 18	-	-	1.9	1.9	9.6	9.6	-	-	1.8	1.8
+ 25	-	-	0.5	2.4	23.5	33.1	-	-	10.1	11.9
+ 36	-	-	0.2	2.6	24.0	57.1	3.0	3.0	8.8	20.7
+ 44	-	-	Tr.	2.6	0.3	57.4	Tr.	3.0	Nil	20.7
+ 52	-	-	0.3	2.9	11.9	69.3	7.8	10.8	14.0	34.7
+ 60	0.8	0.8	0.2	3.1	7.8	77.1	18.9	29.7	21.4	56.1
+ 85	5.2	6.0	1.9	5.0	3.8	80.9	35.9	65.6	20.2	76.3
+100	8.8	14.8	2.2	7.2	1.2	82.1	15.9	81.5	9.6	85.9
+120	12.6	27.4	2.6	9.8	0.7	82.8	7.7	89.2	6.0	91.9
+150	2.4	29.8	0.5	10.3	Tr.	82.8	Tr.	89.2	0.6	92.5
+170	4.0	33.8	0.7	11.0	0.1	82.9	1.3	90.5	0.8	93.3
+200	5.4	39.2	1.2	12.2	0.2	83.1	1.0	91.5	1.2	94.5
-200	37.4	76.6	31.8	44.0	1.3	84.4	3.7	95.2	2.6	97.1
Clay	23.4	100	56.0	100	15.6	100	4.8	100	2.9	100

<u>Mesh Size</u>	<u>Reg. No. 904</u>		<u>Reg. No. 905</u>		<u>Reg. No. 906</u>		<u>Reg. No. 907</u>		<u>Reg. No. 908</u>	
	<u>Weight</u> %	<u>% Cum</u>								
+ 18	0.2	0.2	0.2	0.2	0.6	0.6	2.1	2.1	0.2	0.2
+ 25	2.6	2.8	2.8	3.0	0.8	1.4	9.0	11.1	1.3	1.5
+36	10.2	13.0	8.4	11.4	3.1	4.5	12.4	23.5	2.3	3.8
+ 44	Nil	13.0	Tr.	11.4	0.4	4.9	1.6	25.1	0.4	4.2
+ 52	14.1	27.1	19.4	30.8	8.3	13.2	16.9	42.0	4.8	9.0
+ 60	23.1	50.2	13.6	44.4	23.9	37.1	24.0	66.0	13.7	22.7
+ 85	25.0	75.2	22.4	66.8	32.0	69.1	17.8	83.8	24.9	47.6
+100	6.5	81.7	12.7	79.5	13.0	82.1	6.7	90.5	17.7	65.3
+120	7.5	89.2	8.4	87.9	6.3	88.4	3.7	94.2	14.4	79.7
+150	0.9	90.1	0.9	88.8	0.6	89.0	0.3	94.5	2.2	81.9
+170	1.2	91.3	1.6	90.4	0.6	89.6	0.8	95.3	2.3	84.2
+200	1.8	93.1	1.6	92.0	0.7	90.3	0.8	96.1	3.0	87.2
-200	4.5	97.6	6.3	98.3	2.0	92.3	2.1	98.2	10.2	97.4
Clay	2.4	100.0	1.7	100	7.7	100	1.8	100	2.6	100

Mesh Size	Reg. No. 909		Reg. No. 910		Reg. No. 911		Reg. No. 921		Reg. No. 922	
	Weight %	% Cum								
+ 18	0.6	0.6	0.5	0.5	-	-	-	-	5.3	5.3
+ 25	1.1	1.7	1.1	1.6	-	-	-	-	2.1	7.4
+ 36	1.6	3.3	2.8	4.4	0.7	0.7	0.1	0.1	2.1	9.5
+ 44	0.2	3.5	0.3	4.7	Tr.	0.7	-	0.1	0.3	9.8
+ 52	2.9	6.4	4.8	9.5	1.5	2.2	0.2	0.3	3.8	13.6
+ 60	7.2	13.6	12.9	22.4	6.6	8.8	0.5	0.8	9.6	23.2
+ 85	13.9	27.5	21.4	43.8	17.1	25.9	2.5	3.3	19.6	42.8
+100	14.3	41.8	17.5	61.3	18.4	44.3	7.3	10.6	15.2	58.0
+120	16.8	58.6	15.2	76.5	20.9	65.2	16.8	27.4	11.6	69.6
+150	1.9	60.5	2.3	78.8	2.9	68.1	4.2	31.6	1.4	71.0
+170	5.7	66.2	3.4	82.2	5.8	73.9	10.1	41.7	1.9	72.9
+200	5.5	71.7	3.6	85.8	5.7	79.6	10.5	52.2	2.3	75.2
-200	26.2	97.9	11.2	96.9	16.9	96.5	44.7	96.9	13.8	89.0
Clay	2.1	100	3.1	100	3.5	100	3.1	100	11.0	100

Mesh Size	Reg. No. 923		Reg. No. 924		Reg. No. 927		Reg. No. 928		Reg. No. 929	
	Weight %	% Cum								
+ 18	0.6	0.6	7.7	7.7	-	-	-	-	-	-
+ 25	2.5	3.1	4.8	12.5	-	-	-	-	-	-
+ 36	3.7	6.8	3.3	15.8	0.4	0.4	0.3	0.3	0.3	0.3
+ 44	0.5	7.3	0.3	16.1	0.1	0.5	-	0.3	0.1	0.4
+ 52	4.8	12.1	3.0	19.1	0.7	1.2	0.1	0.4	0.3	0.7
+ 60	9.5	21.6	5.1	24.2	4.7	5.9	0.1	0.5	0.5	1.2
+ 85	20.1	41.7	6.9	31.1	22.1	28.0	0.4	0.9	1.1	2.3
+100	16.3	58.0	6.9	38.0	22.0	50.0	3.9	4.8	1.8	4.1
+120	10.4	68.4	10.5	48.5	19.1	69.1	26.0	30.8	3.7	7.8
+150	1.5	69.9	2.5	51.0	2.5	71.6	6.9	37.7	1.1	8.9
+170	1.2	71.1	4.9	55.9	1.1	72.7	8.1	45.8	2.1	11.0
+200	1.4	72.5	4.1	60.0	2.2	74.9	5.1	50.9	3.8	14.8
-200	8.1	80.6	26.9	86.9	7.2	82.0	27.0	77.9	77.3	92.1
Clay	19.4	100	13.1	100	18.0	100	22.1	100	7.9	100

Mesh Size	Reg. No. 930		Reg. No. 931		Reg. No. 966		Reg. No. 967		Reg. No. 968	
	Weight %	% Cum								
+ 18	-	-	0.9	0.9	-	-	-	-	-	-
+ 25	-	-	2.1	3.0	-	-	-	-	-	-
+ 36	1.9	1.9	1.8	4.8	1.1	1.1	0.3	0.3	3.1	3.1
+ 44	0.1	2.0	0.3	5.1	0.1	1.2	0.2	0.5	0.5	3.6
+ 52	1.0	3.0	1.8	6.9	1.9	3.1	1.8	2.3	10.3	13.9
+ 60	5.7	8.7	3.8	10.7	7.7	10.8	16.0	18.3	25.9	39.8
+ 85	18.0	26.7	8.9	19.6	25.4	36.2	47.0	65.3	31.4	71.2
+100	16.6	43.3	23.9	43.5	23.5	59.7	23.9	89.2	12.8	84.0
+120	15.7	59.0	28.0	71.5	14.9	74.6	9.0	98.2	5.4	89.4
+150	1.6	60.6	2.7	74.2	1.5	76.1	0.6	98.8	0.3	89.7
+170	3.4	64.0	2.6	76.8	2.4	78.5	0.5	99.3	0.8	90.5
+200	4.6	68.6	1.9	78.7	2.9	81.4	0.2	99.5	1.4	91.9
-200	19.3	87.9	9.9	88.6	12.2	93.6	0.5	100	2.7	94.6
Clay	12.1	100	11.4	100	6.4	100	N11	100	5.4	100

<u>Mesh</u> <u>Size</u>	<u>Reg. No. 969</u>		<u>Reg. No. 970</u>	
	<u>Weight</u> %	<u>% Cum</u>	<u>Weight</u> %	<u>% Cum</u>
+ 18	-	-	-	-
+ 25	-	-	-	-
+ 36	2.9	2.9	1.0	1.0
+ 44	0.1	3.0	0.1	1.1
+ 52	2.6	5.6	2.1	3.2
+ 60	10.9	16.5	8.5	11.7
+ 85	27.8	44.3	22.3	34.0
+100	22.2	66.5	16.5	50.5
+120	14.9	81.4	11.4	61.9
+150	1.7	83.1	2.3	64.2
+170	3.0	86.1	2.0	66.2
+200	3.3	89.4	1.8	68.0
-200	8.2	97.6	10.4	78.4
Clay	2.4	100	21.6	100