

TR11-142-143

R. 505

25. KING ISLAND SCHEELITE (1947) LTD: GILL MAGNETIC SEPARATOR TESTS ON MILL PRODUCTS

Samples

Two samples from the gravity concentrate cleaning section of the mill were submitted by the above company for high intensity wet magnetic separation tests using the Gill rotary separator.

The samples were described as follows:—

Sample A: minus 60 mesh: No. 1 Separator Feed.

Sample B: minus 30 mesh: No. 2 Separator Feed.

Test Procedure

The samples were fed dry via a vibrating feeder to the Gill separator during rougher separation. The rougher magnetics were then fed in pulp form at a reduced rate. One pole only of the separator was used during the tests.

Products obtained were examined for WO_3 content.

Test Results

SAMPLE A: MINUS 60 MESH: NO. 1 SEPARATOR FEED

Conditions	Rougher	Cleaner
Feed Rate: lbs dry solids/hour/pole	434	46.3
Field (Amperes)	11.6	11.6
Rotor Speed (R.P.M.)	12	12
Wash Water (gal/min)	3	3
Scour Water (gal/min)	1½	1½

Metallurgical Results

Product	Weight	Per Cent	
		WO_3	WO_3 Distribution
Cl Magnetic	7.2	16.6	4.0
Cl Non Magnetic	15.3	20.0	10.1
Ro Non Magnetic	77.5	33.5	85.9
Comp. Head	100.0	30.2	100.0

SAMPLE B: MINUS 30 MESH: NO. 2 SEPARATOR FEED

Conditions	Rougher	Cleaner
Feed Rate: lbs dry solids/hour/pole	132	40
Field (Amperes)	8	8
Rotor Speed (R.P.M.)	10	10
Wash Water (gal/min)	3	3
Scour Water (gal/min)	1½	1½

Metallurgical Results

Product	Weight	Per Cent	
		WO_3	WO_3 Distribution
Cl Magnetic	10.0	17.0	5.9
Cl Non Magnetic	6.2	14.4	3.1
Ro Non Magnetic	83.8	31.3	91.0
Comp. Head	100.0	28.8	100.0

Comment

The above results indicate that there is little prospect of successfully upgrading these samples by means of the Gill separator. Near maximum field strength was applied in the test on Sample A and even then little selectivity was obtained.