UNIVERSITY OF MINING AND GEOLOGY "St. IVAN RILSKI"
SOFIA, BULGARIA
FACULTY OF MININES
DEPARTMENT OF MINERAL PROCESSING AND RECICLING

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BOND BALL MILL WORK INDEX

TEST REPORT

№ 1 / 30.01.2014

1. **Sample Name : Limestone, density - 2,65 g/cm^3**
2. **Test Procedure: Bond Work Index Determination Method**
3. **Test Equipment:** Standard Bond Ball Mill

   Mill size: D X L = 305 x 305 mm

   Mill volume: 22.3 dm^3

   Lining of the mill: smooth steel

   Rotation speed: 70 rpm (85% of n_{crit})
4. **Grinding Media:** Steel Balls

   Total grinding media mass – 22.544 kg

   Grinding media size distribution:

Balls number	Ball diameter	Balls number	Ball diameter
43	*38.10 mm*	71	*19.05 mm*
67	*31.75 mm*	94	*15.87 mm*
10	*25.40 mm*		

5. **Contractor:** "RELO-BG" Ltd.

6. **Sample mass:** 10kg.

7. **Receiving Date** 06.01.2014

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TEST RESULTS

Feed Particle Size Distribution

Sieve openings (mm)	Undersize percentage	
	Partial (%)	Cumulative (%)
3.15	0.76	100.00
2.50	30.97	99.24
1.60	37.97	68.27
0.50	8.20	30.30
0.315	3.00	22.10
0.250	8.77	19.10
0.080	2.52	10.33
0.071	7.81	7.81
Total	100.00	

End Product Particle Size Distribution

Sieve openings (mm)	Undersize percentage продукт	
	Partial (%)	Cumulative (%)
0.100	13.57	100.00
0.080	4.67	86.43
0.071	3.00	81.76
0.063	21.7	78.76
0.056	57.06	57.06
Total	100.00	

Bond Work Index

D_{80} particle size of the feed, (mm)	d_{80} particle size of the end product (mm)	End product specific mass, (g/rev)	W_G^* (kWh/g)	W_i^{**} (kWh/t)
1.93	0.065	1.85	$5.77.10^{-3}$	11.3

*) W_G – Energy consumption per g end product
**) W_i - Bond Work Index.

Bond Work Index of sample is determined as: *11.3 kWh/t*

Performed by:
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.....
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For and on behalf of SGS Bulgaria Ltd.