



**National University
of Science & Technology**

FACULTY OF INDUSTRIAL TECHNOLOGY- DEPARTMENT OF CHEMICAL ENGINEERING

Project Title : Ball Mill Optimisation

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Abstract

This project clearly details the evaluation of a wet grate discharge ball mill. The work conducted shows that there is an almost linear relationship between the ball load and the grinding efficiency. It is also found that grinds improve by 29% when 80mm balls are replaced by 63.5mm balls. A further decrease of ball size below 63.5mm will reduce grinding efficiency by 33%. The experimental work shows that the optimal mill ball load is 50% with mixed ball distribution of 31% 80mm, 39% 63.5mm, 19% 51mm, 8% 38mm and 3% 24.5mm. These optimum conditions yield the desired grind clarity of 80%(-75 μ m).