

RAVENSDOWN AWATOTO

#2 DEN BELT

HISTORY

Back in 1999 when Applied Conveyor first set up to supply quality Fenner Dunlop belting we were fortunate enough that engineers and maintenance staff saw the merit in using a quality product. However it was difficult to justify a 20-30% increase in investment based solely on a "salesman's pitch". Pricing was only part of the picture. The aim was to reduce belt maintenance costs, plan maintenance and reduce downtime to increase plant availability and reliability.

SITUATION

The fertiliser industry, in particular manufacturing and granulation, is extremely hard on equipment. The product is very hot, sticky, abrasive and dusty. All of these conditions could occur in one day of production. Applied Conveyor completed a conveyor audit, logging belt lengths, widths, ply ratings, idler styles, drum diameters, drum laggings, splice details, belt speeds and tonnes per hr. All belt changes were recorded and monitored to gauge expected life. Some belts were changed from 3ply 4x1.5 to 3ply 5x1.5 and 4ply 6x2. Whilst the design checks alleged 3ply was strong enough, 4ply gave extra rubber cover thickness which extended the belts life. The No2 Den belt was probably one of toughest applications in the plant. The belt

handled hot product straight from the Den, the combination of heat (90degC) and sticky product caused carry back which dropped to the floor or built up on rollers tracking the belt off. We installed an Fenner Dunlop Quarrymaster-M belt,

3ply initially then 4ply as volume and plant availability increased. The longest life recorded was 15 months. The worst was 11 months from the Fenner Dunlop belt. It was established that belt quality extend the operating life reducing downtime from poor quality product. Ravensdown also employed a maintenance plan to take advantage of the extra quality that continually improved manufacturing conditions, uniformity of product, improved transfer points and reduced spillage. During this time to check progress a Korean 4ply 5x2 N grade belt was tried which lasted 5 months, then a Skellerup Quarrier belt was tried which lasted 6 months. At this point the cost effectiveness of Fenner Dunlop Quarrymaster-M became obvious. This has lead to the development of a belt specifically for the fertilizer industry, Fertmaster pn 500/3 4x2 special covers.



Belt	Supplier	Length	Price per/m	Life months	Effective price per/m	Belt price for 12 months	Splice cost for 12 months	Total cost
4P PN150 5x2	Korean/ Taiwanese	79.8	\$80.00	5	\$192.00	\$15321.60	\$800.00	\$16121.60
4P PN150 5x2	Skellerup/ Viking Quarrier	79.8	\$81.60	6	\$163.2	\$13023.36	\$800.00	\$13823.36
QMII PN630/4 6X2	APEX FENNER	79.8	\$105.00	12	\$105.00	\$8379.00	\$400.00	\$8779.00
FERTMASTER PN500/3 4x2	APEX FENNER	79.8	\$105.97	21	\$60.40	\$4819.90	\$400.00	\$5219.92