

ABSTRAK

PRARANCANGAN PABRIK RESIN FENOLIK JENIS RESOLE DARI FENOL DAN FORMALDEHIDA DENGAN KAPASITAS 25.000 TON/TAHUN (Tugas Khusus Perancangan Reaktor *Batch* 201 (RE-201))

Oleh

MITRA DIMAS SANJAYA

Resin fenolik jenis resole merupakan resin sintetik yang dihasilkan dengan mereaksikan fenol dan formaldehida dengan menggunakan katalis basa. Resin resole dapat digunakan sebagai bahan baku pada industri pembuatan pelapis tahan panas, industri barang plastik, industri papan panel, dan industri bahan perekat.

Kapasitas produksi pabrik yang direncanakan sebesar 25.000 ton/tahun dengan 330 hari kerja dalam 1 tahun. Lokasi pabrik direncanakan didirikan di daerah *Java Integrated Industrial Port Estate*, Kabupaten Gresik, Provinsi Jawa Timur. Tenaga kerja yang dibutuhkan sebanyak 141 orang dengan bentuk badan usaha Perseroan Terbatas (PT) yang dipimpin oleh seorang Direktur Utama yang dibantu oleh Direktur Teknik & Produksi dan Direktur Keuangan & Umum dengan struktur organisasi *line and staff*.

Dari analisis ekonomi diperoleh:

<i>Fixed Capital Investment</i>	(FCI)	= Rp 259.064.773.212
<i>Working Capital Investment</i>	(WCI)	= Rp 45.717.312.920
<i>Total Capital Investment</i>	(TCI)	= Rp 304.782.086.131
<i>Break Even Point</i>	(BEP)	= 39,97%
<i>Shut Down Point</i>	(SDP)	= 23,56%
<i>Pay Out Time before taxes</i>	(POT) _b	= 4,04 tahun
<i>Pay Out Time after taxes</i>	(POT) _a	= 4,59 tahun
<i>Return on Investment before taxes</i>	(ROI) _b	= 12,54%
<i>Return on Investment after taxes</i>	(ROI) _a	= 10,04%
<i>Discounted Cash Flow</i>	(DCF)	= 15,01%

Dari analisis ekonomi yang telah dilakukan terhadap prarancangan pabrik resin fenolik ini, maka pendirian pabrik ini layak untuk dikaji lebih lanjut, karena memiliki potensi keuntungan dan prospek yang cukup baik.

ABSTRACT

PRE DESIGN PHENOLIC RESIN RESOLE TYPE PLANT FROM PHENOL AND FORMALDEHYDE WITH CAPACITY 25.000 TONS/YEAR (Batch Reactor 201 Design (RE-201))

By

Mitra Dimas Sanjaya

Phenolic resin resole type is a synthetic resin produced by reacting phenol dan formaldehyde with help of base catalyst. Resole resin is used as molding compounds for heat-resistant material, plastic, wood panel, and adhesives.

Planned plant capacity is 25.000 tons/year for 330 work days in one year. Plant location is planned to be built in Java Integrated Industrial and Ports Estate (JIPE), Gresik Regency, East Java Province. Workforces needed are 141 people with a form of Limited Liability Company (LLC) business structure that led by a Chief Executive who is assisted by Production & Engineering Director and Finance & General Affairs Director with line and staff organizational structures.

Data obtained from economic analysis:

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Based from the summary above, it is concluded that the pre design of phenolic resin resole type plant is feasible to be studied further because of the plant good profitability and future prospects.