Pembuatan isolator listrik porselin jenis line post dengan menggunakan bahan baku lokal

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Abstrak

Industri lsolator listrik tegangan menengah di indonesia masih mengimpor bahan baku siap pakai. Dipihak Iain Indonesia mempunyai sumber bahan baku seperti kaolin, ball clay, feldspar dan pasir kuarsa.

Pada penelitian ini dilakukan pembuatan prototipe isolator tegangan menengah line post dengan bahan baku lokal. Benda uji yang dibuat terdiri dari 4 formulasi untuk uji kuat lentur dan kuat tembus listrik.

Pengujian sifat tisika dan analisa kimia bahan baku menunjukkan bahwa Kaolin, Ball Clay dan Pasir Kuarsa memenuhi persyaratan SNl dan NGK untuk bahan baku badan isolator listrik kecuali Feldspar.

Pengujian kuat Ientur dan kuat tembus listrik menghasilkan formulasi D (40 % Kaolin Belitung, 5 % Ball Clay Blitar, 5 % Ball Clay Kalimantan, 15 % Pasir Kuarsa Belitung, 15 % Feldspar Jepara, 15 % Feldspar Pacitan, 5 % Alumina dan 1 % Talk) yang terbaik.

Formulasi D dan formulasi E (40 % Kaolin Belitung, 10 % Ball Clay Blitar, 15 % Pasir Kuarsa Belitung, 30 % Feldspar Jepara, 5 % Alumina dan 1, 5 % Kapur Blitar) diaplikasikan pada pembuatan prototipe isolator line post.

Pengujian mutu prototipe isolator line post menunjukkan bahwa formulasi D lebih baik dibandingkan formulasi E. Prototipe isolator line post dengan formulasi D memenuhi persyaratan ANSI dan SNI sifat kelistrikan, kuat lentur, ketahanan kejut suhu dan keporian sedangkan kenampakan dan dimensi tidak memenuhi syarat. Prototipe isolator line post dengan formulasi E memenuhi persyaratan ANSI dan SNI sifat kelistrikan, ketahanan kejut suhu dan keporian sedangkan kenampakan, dimensi dan kuat lentur tidak memenuhi syarat
<hr><i>Abstract
Medium voltage electrical insulator industries in Indonesia are still raw materials imported. On the other hand Indonesia have raw materials resources such as kaolin, bail clay, feldspar and quartz sand. ln this experiment line post medium voltage insulator prototypes were made using local raw materials.

Test pieces prepared consisted of 4 formulation for bending strength and dielectric strength test.

The test on physical properties and chemical analysis of raw materials showed that kaolin, ball clay and quartz sand have fulfilled SNI and NGK for electrical insulator body raw materials, except feldspar.

The test on bending strength and dielectric strength of test pieces have produced formulation of D (40 %

Kaolin of Beiitung, 5 % Ball Clay of Blitar, 5 % Ball Clay of Kalimantan. 15 % Quartz Sand of Belitung, 15 % Feidspar of Jepara, 15 % Feidspar of Pacitan, 5 % Alumina and 1 % Talk) was the best.

Formulation of D and formulation of E (40 % Kaolin of Belitung, 10 % Ball Clay of Blitar, 15 % Quartz Sand of Belitung, 30 % Feldspar of Jepara, 5 % Alumina and 1, 5 % Limestone of Blitar) were applied to made line post insulator prototypes.

The test of line post insulator prototypes showed that formulation of D better than formulation of E. Line post insulator prototype with formulation D has fulfilled the requirements of ANSI and SNI in terms of electrical properties, bending strength, thermal shock resistance and porosity white their visual and dimension have not fulfilled. Line post insulator prototype with formulation E has fulfilled the requirements of ANSI and SNI in terms of electrical properties. thermal shock resistance and porosity while their visual, dimension and bending strength have not fulfilled.</i>