

Advantages of Polymer Insulators over Porcelain Insulators

<http://waterheatertimer.org/Names-of-parts-on-electric-pole.html>

The Advantages of Polymer Insulators over Porcelain Insulators		
GENERAL COMPARISON		
FACTOR	CERAMICS	POLYMER INSULATORS
WEIGHT	Heavy in weight, approx wt of 400 kv is about 135 kgs.	90% Lighter than Porcelain Insulators, but offer an equal to better strength. Approx Wt of 400 kv is less than 14 kgs
FRAGIBILITY	HIGHLY FRAGILE to Shock & Vibration	NOT FRAGILE TO SHOCKS
PACKING & TRANSPORT	RISKY & EXPENSIVE	EASY & ECONOMICAL
INSTALLATION	RISKY, EXPENSIVE AND More Labour required	Very EASY & ECONOMICAL
HANDLING	DIFFICULT	EASY
MAINTENANCE COST	HIGH	LOW
VANDALISM	MORE SUSCEPTIBLE	HIGHLY RESISTANT
BREAKAGES & SECONDARY DAMAGE	Highly Fragile - 10 to 15% breakages are reported during transportation, storage and installation	Composite Insulators are flexible and therefore, highly resistant to breakages.
TECHNICAL CAMPARISON		
MECHANICAL FAILURE	REDUCTION IN MECHANICAL STRENGTH AND SEPERATION DUE TO PINGS GETTING ERODED.	SINGLE PIECE HENCE NO SUCH PROBLEM
RESISTANCE TO FLASHOVERS & PUNCTURES	LOW	HIGH
ANTI TRACKING AND EROSION RESISTANCE	VERY LOW - Poor Tracking Resistance	Excellent Tracking Resistance avoids erosion or tracking of the housing material.
DIELECTRIC STRENGTH	LOWER THAN POLYMER	EXCELLENT INSULATION PERFORMANCE
CONTAMINATION & POLLUTION	HIGHLY AFFECTED	NOT AFFECTED AND HAS LONGER LIFE
HYDROPHOBICITY	NON HYDROPHOBIC, Porcelian surface forms water film on the surface making easy path leading to More flash overs	The Hydrophobicity properties of Silicon Rubber Provide excellent insulating behavior and Resists Wetting by forming Beads of water without the need of washing or greasing even in humid or polluted climates. Hence low failure rate combined with low overall operating and maintenance costs.
SELF CLEANING QUALITY	NO. - Dirt, Sand, Salt & Snow are easily Attracted	YES. Due to Hydrophobicity recovery characteristic
TENSILE STRENGTH	GOOD	EXCELLENT DUE TO CRIMPING TECHNOLOGY.
MAINTENANCE	NEEDS MAINTENANCE LIKE CLEANING, WASHING AND GREASING	NO MAINTENANCE IS REQUIRED
DESIGN	Design Flexibility is limited. Requires larger and heavier towers for installation and more space.	Polymer Insulator Design allows for adaption to suit specific needs such as creepage distance. Results in space saving and lower cost
Manufacturing Process	Porcelian insulators require long Manufacturing process leading to Long delivery Time. Manufacturing Process causes pollution & health risk .	Pollution Free, safe, Short Process time Leading to short delivery periods
safety	Porcelian insulators are susceptible to explosion & Breakages, due to high fragile properties , stone throwing etc	Composite Insulators provide very high level of safety, superior flexibility and strength. Not suspetible to explosion. No breakages due to stone Throwing etc

Porcelain insulator withstands lightning strike better than the composite polymer

Polymers have relatively shorter life

Porcelain withstands heat, moisture, pollutants, and UV radiation better than polymer