



EXPERIMENTAL STUDY OF INSULATOR USING ASBESTOS COATING MATERIALS WITH DIFFERENT TEMPERATURE

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Abstract:

In this paper we are study about insulator with asbestos coating material. The applied loads are as 1000 Watts, 2000Watts, 3000Watts, 4000Watts, and 5000Watts. The coated insulators are used in distribution Line, in this study we are achieving the maximum Temperature and also achieving the stable point of using insulator.

Keywords: *Insulator; Temperature; Asbestos Coating Materials.*

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1. Introduction

The insulator is an electrical component which are used in power generation station, transmission line distribution line, the insulator are mounted on pin structure.



Figure 1: Asbestos

Table 1: Classification of electrical insulation

Class	Insulating Material	Maximum Temperature deg F
O	Organic, not impregnated	195
A	Organic, impregnated	220
B	Inorganic, organic binder	265
H	Inorganic, silicone binder	355
C	Completely inorganic	355+

2. Performance Testing

Table 2: Testing applied load 1000 Watts

Sr. No.	Time in minutes	Temperature (°C) on Final stage
1	10	40
2	20	42
3	30	48
4	40	52
5	50	58
6	60	64

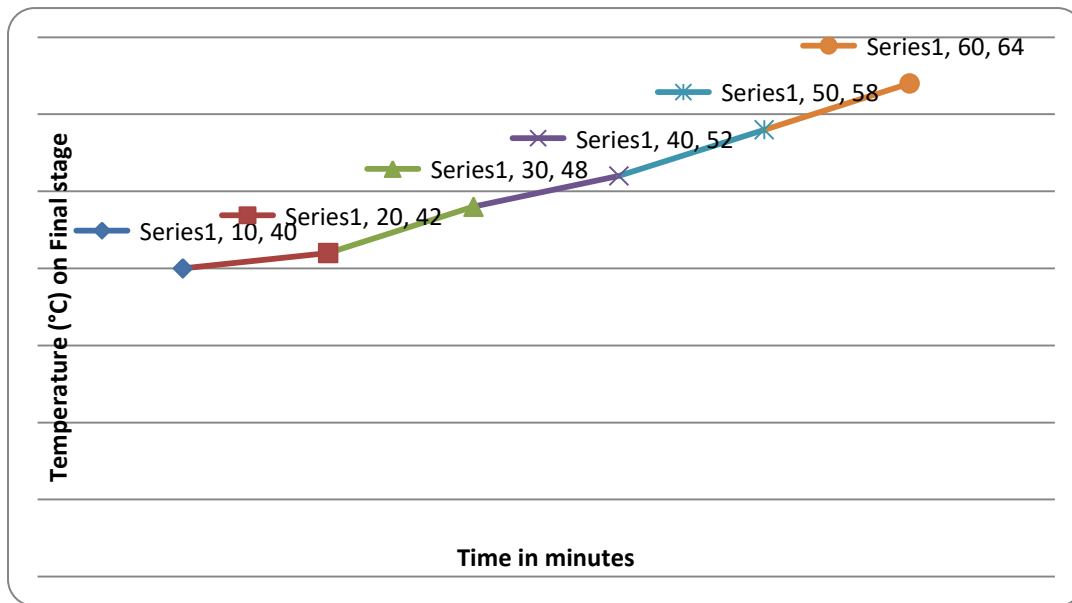


Figure 2: Testing applied load 1000 Watts

Table 3: Testing applied load 2000 Watts

Sr. No.	Time in minutes	Temperature (°C) on Final stage
1	10	43
2	20	49
3	30	56
4	40	67
5	50	73
6	60	79

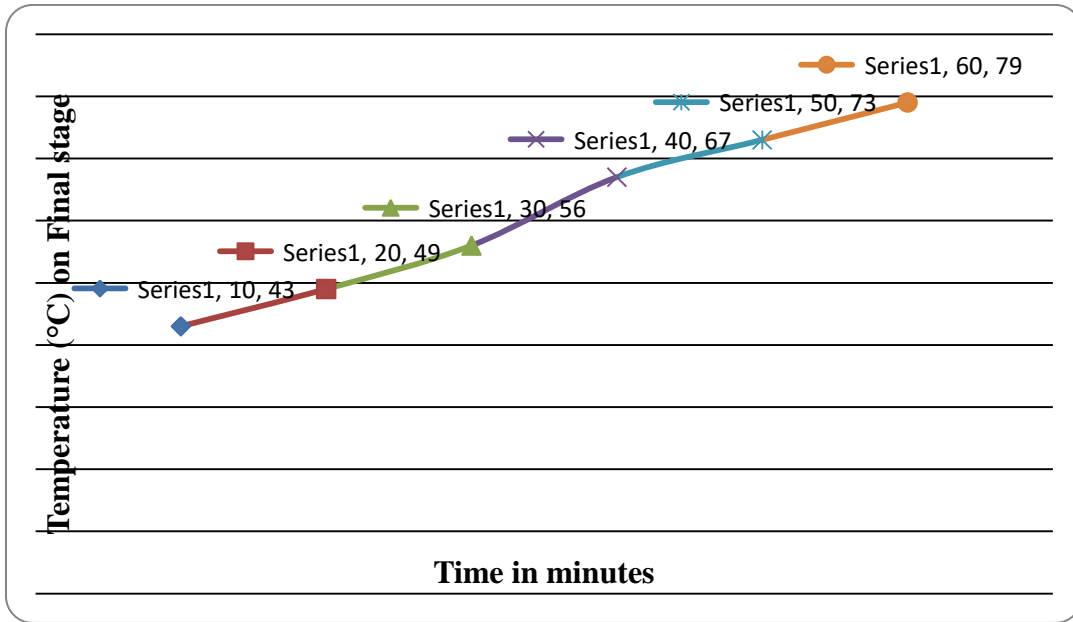


Figure 3: Testing applied load 2000 Watts

Table 4: Testing applied load 3000 Watts

Sr. No.	Time in minutes	Temperature (°C) on Final stage
1	10	44
2	20	50
3	30	57
4	40	69
5	50	75
6	60	80

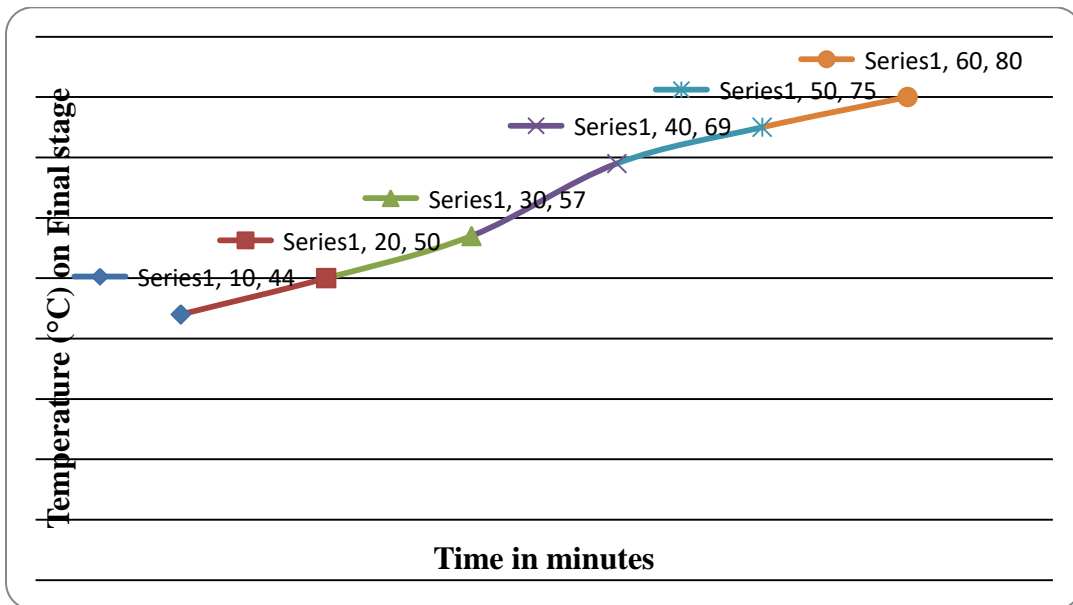


Figure 4: Testing applied load 3000 Watts

Table 5: Testing applied load 4000 Watts

Sr. No.	Time in minutes	Temperature (°C) on Final stage
1	10	52
2	20	55
3	30	63
4	40	92
5	50	74
6	60	73

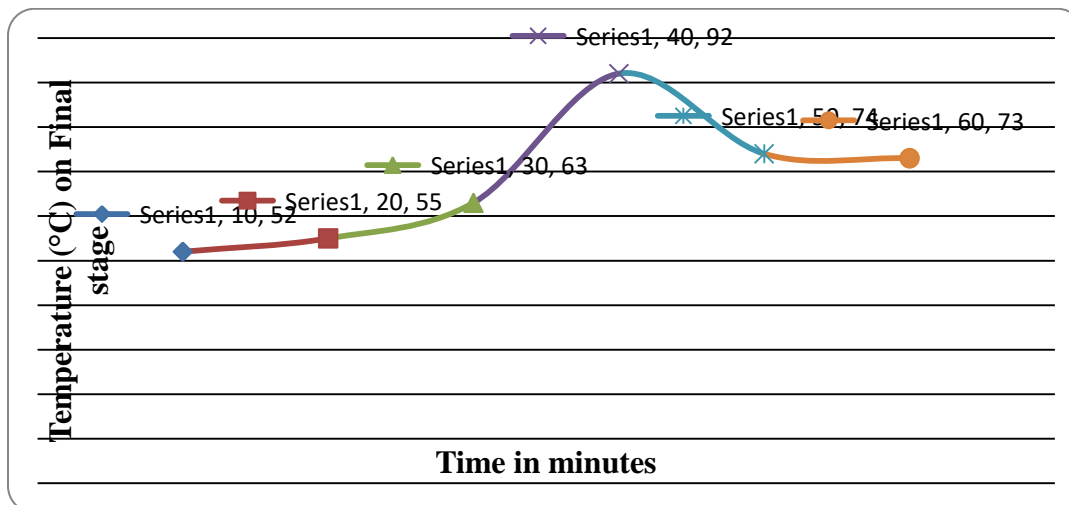


Figure 5: Testing applied load 4000 Watts

Table 6: Testing applied load 5000 Watts

Sr. No.	Time in minutes	Temperature (°C) on Final stage
1	10	53
2	20	57
3	30	67
4	40	77
5	50	79
6	60	82

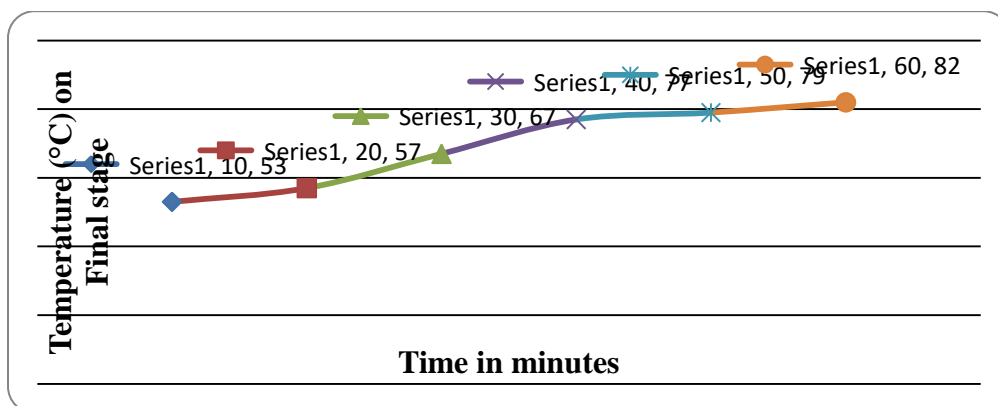


Figure 6: Testing applied load 5000 Watts

3. Conclusion

We are obtaining various temperatures during various time periods with applied loads such as 1000 Watts, 2000Watts, 3000Watts, 4000Watts, and 5000Watts. Overall studies we are finding out the optimal stage, which are shown in table .5. And applied loads are 4000 Watts during 40 minutes after this we are achieving the maximum Temperature are 92 °C on Final stage.

References

- [1] A. El-Hag, L. Meyer, JM. George, S. Li and I. Ramirez, "RTV Silicone Rubber Pre-coated Ceramic Insulators for Transmission Lines" IEEE Trans. Vol. 20, No.1, pp, 237-244, 2013.
- [2] A. Posati, J-M George, S. Prat and G. de Simone, presented at the Insulator News and Marketing Report (INMR) Rio de Janeiro, Brazil, 2007.
- [3] R. S. Gorur, "Evaluating Station Post Insulator Performance from Electric Field Calculations", IEEE Trans. Vol. 15, No. 6, pp. 1731-1738, 2008.
- [4] J.W. Chang and O. G. Amburgey, "Surface Hydrophobicity of Polymeric Materials used for Outdoor Insulation Applications", IEEE Trans. Vol. 5, No. 4, pp. 1921-1933, 1990.
- [5] W.W. Guidi, J. Burnham, R. S. Gorur "Accelerated aging and flashover tests on 138 kV non ceramic line post insulators", IEEE Trans. Vol. 8, pp. 325-336, 1993