

Effect of Various Treatments on Checking in Poles

BACKGROUND

During the Spring of 1988, 36 poles were treated with CCA/ET® oil emulsion, penta, and CCA alone at the Koppers Company plant in Florence, South Carolina. These poles were installed the same year and were in test for eight years. An evaluation was made to determine if the oil had any visual effect on the amount of checking in the poles.

TEST

The 36 poles were divided into six mixed groups, each group including poles treated with oil/penta, CCA, and four retentions of CCA/oil ranging from a low to a high oil concentration. The six poles in each group were compared with each other and ranked 1 through 6. The pole with the least amount of checking was given a grade of 1; the pole with the worst checking a

6. After all six groups were evaluated, the pole grades were averaged for each preservative solution. The results are in the table below.

It is important to note here that most of these poles were surrounded by trees with approximately 50% of the pole exposed to the sun. It was difficult, with the exception of the oil/penta, to make a determination of what effect the oil really had on checking between the groups where the poles were shrouded in tree cover. Therefore, the evaluation was made with respect to the sunny side of each pole.

RESULTS

The oil/penta poles showed the worst checking with CCA next. Least checking was noted in the CCA/oil poles, which showed a gradient effect – the higher the oil retention the less checking.

Below: sample identification and rating for each pole

Group	Oil/Penta	CCA & High Oil	CCA & Medium High Oil	CCA & Medium Oil	CCA & Low High Oil	CCA
1	Op1 6	276 2	1010 1	2136 3	378 4	1624 5
2	Op2 6	223 1	1032 2	1355 3	492 4	813 5
3	Op3 6	237 2	1246 3	2203 1	181 4	1607 5
4	Op4 6	275 1	953 3	1328 2	283 4	842 5
5	Op5 6	229 1	968 2	1369 3	435 5	1582 4
6	Op6 6	228 2	1017 1	1316 3	366 4	824 5
Average	6	1.5	2	2.5	4.2	4.8

Based on the visual evaluation, the CCA/oil treated poles showed less checking than either the oil/penta or CCA poles. The amount of checking decreased with the increased retention of oil additive. The current oil retention for ET poles falls between the low and medium samples.