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- ❖ Sandy material will not damage the cable sheathing The crushed rock material of 0-5 mm can be used to create a more optimal particle size distribution that will be used to form the final mixture
- ❖ The higher the proctor density, the lower the moisture content required during compaction. A higher percentage of crushed rock 0-5 mm results in higher proctor densities.
- ❖ Therefore, a mixture composed of 75% in weight of 0-5 mm crushed rock material and 25% in weight of red dune sand should achieve a thermal resistivity of approximately 1 Km/W with 2% moisture
- ❖ The empirical formula from DNV GL has been adjusted based on limited experiments and should therefore be used with caution. Consultant recommend that future results be fed back into the formula to improve its accuracy.
- ❖ It is now possible to reach a backfill thermal resistivity of 1 Km/W. Mixing 25% red dune sand and 75% 0-5 mm material will result in a thermal resistivity value of 1 Km/W.

Hence it is desirable to use the backfilling material with 75% of 0-5mm crushed rock and 25% of Red dune sand, which will give thermal resistivity of 1KM/w as required for the electrical utility standard for backfilling of HV & MV cable trenches. Further the study had been elaborated by consultant with current rating of cable which are not discussed in this article.

References:

Consultant Study reports

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