



Cables in Tunnels

As the demand for electrical power in a city centre increases, finding an acceptable route for power cables to deliver the load becomes more problematic.

Tunnels have been used to solve congestion problems in cities for over a century. The installation of dedicated power cable or multi-service tunnels is still seen as a practical solution where other means of access are impractical or uneconomic.

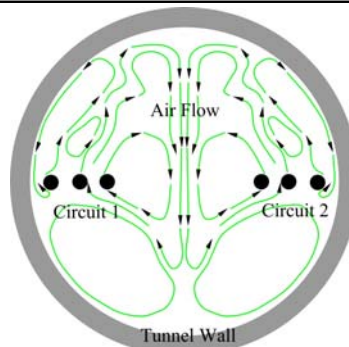
The leasing to utility companies of allocated space within multi-service tunnels brings together water, communication and power services in close proximity running parallel for many kilometres. Careful consideration must be given to the performance of the power cables and their effect on other services within multi-service tunnels.

The power cables must be positioned in the tunnel to obtain adequate heat transfer to meet the cable rating. Cable bonding and earthing systems must be designed to ensure that voltages induced during normal and abnormal operation do not become life threatening to tunnel maintenance personnel. Unexpected induced voltages and interference on adjacent telecommunication cables will be unwelcome and tunnel heating by power cables under load may encourage bacterial growth in water systems fed by the adjacent water pipes.

The design selection of cable systems for tunnels will also require full risk assessments for such issues as reliability and personnel safety, fire and pollution.

Cable Consulting International has a full cable system design capability, including the use of advanced computational flow dynamic techniques, for power cable systems to meet the stringent requirements of multi-service or dedicated cable tunnels.

If you would like more information about our cable tunnel design services, please contact our Technical Office using the information listed below.



Cable Consulting International engineers have the highest experience and expertise in all aspects of land and subsea power cable systems from 10kV to 550kV and beyond.

We have hands-on R&D, manufacturing, commercial, project management and installation experience and are the authors of over thirty technical papers.

Our experience of worldwide AC and DC cable system types includes oil-filled, gas-filled, XLPE, EPR, mass impregnated cables and gas insulated lines. We have in-depth knowledge of accessory design for both present and superseded designs. We have over thirty years of international cable system project management experience.



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