



ADVICE NOTE ON CROSS STREET AND FOOTWAY WIRE CATENARIES SUPPORTING SEASONAL DECORATIONS.

In accordance with the 'Code of Practice for the Installation, Operation and Removal of Seasonal Decorations', calculations need to be carried out to determine the imposed forces (e.g. pull out force) on anchorages supporting seasonal decoration catenaries. The anchorages will then need to be load tested to prove that the anchorages can support these imposed forces. Calculations and testing reports should therefore be submitted with the application otherwise it can not be checked and cleared by the Highway Authority from a structural safety view point. It is recommended that a structural engineer is engaged to advise on the adequacy of the suspension infrastructure proposed.

To reduce the amount of calculation required, promoters could choose the worst case catenaries (longest span with largest decoration) to determine the pull out load and then load test all catenary's anchorage points to this load. According to the code, inspection and testing should be carried out at least every five years. Also note that appendix C of the code recommends anchorages should be at least 16mm diameter and minimum 15KN anchorage strength but then goes on to say smaller anchor bolts and anchorage strengths may be used although care should be taken to ensure these meet the necessary strength requirements - **i.e. a calculation needs to be carried out to determine the required anchorage strength and then proven by testing.** The code also recommends that 10mm diameter anchor bolts and 8mm diameter wire are used as a minimum see table in section 2.15 of the Code.

As a simple example, a cross street decoration supported on two parallel wire catenaries (one top, one bottom) with the anchorage bolts tested to 5KN strength should be satisfactory for a 50kg total weight decoration with a total solid area of approximately 2m². This is irrespective of whether the decoration is concentrated at mid span or spread evenly over the length of the catenaries (see notes 8 & 9 and table B-4 of appendix B(i) of the code).

For further explanation on the above example refer to the top line of table B-4 in appendix B(i) of the code. The figures given in this table are for 15KN strength anchorages and therefore need to be reduced to a third of these values for 5KN strength anchorages. From the table, for a 5kg per metre weight of decoration on a 10m span (50kg total) with 5KN strength anchorages, the permitted average depth of solid elevation of decoration reduces from 0.6m to 0.2m per metre span. Multiplying the reduced permitted average depth by the span (i.e. 0.2m x 10m) gives total permitted area of decoration of 2m².

Note 5KN is equivalent to approx 500kg or 0.5tonne.