

EURO CHIEFTAIN SYSTEM - TECHNICAL DATA & WARRANTY STATEMENT

Our Euro Chieftain brackets were developed for reducing wind loading on a lighting column caused by the installation of banners. We certify that our systems conform to the EN40 standard.

What is EN 40? EN40 is a European & British standard regarding design and verification of lighting columns, with Part 3.1 relating to the specification for characteristic loads.

How does our system comply? EN40 dictates that all lamp columns must be manufactured to accept the wind loading of a 0.3sq.mtr. rigid road sign. Via rigorous independent wind tunnel testing of our Euro Chieftain system we are able to certify that the wind loading on a standard sized lamp column banner is reduced to an equivalent size of 0.2sq.mtr., falling well within EN40 specifications.

Methods used for certification

Testing carried out on a single lighting column with: 2 Lamp column banners, size 760mm wide x 2030mm in depth (total 3.08sq.m – 1.54sq.m per banner). Installed back to back using 2 sets of Euro Chieftain banner brackets. Brackets were installed using 19mm stainless steel banding.

Methods and Apparatus used: Distance travelled was recorded on two string pot sensors mounted on the test rig and were calibrated by wrapping the wire around two known diameters and calculating the circumference. Wind speed was provided by our test facility.

Test Procedure: All tests were conducted by our test facility with specialist equipment for measuring wind loading vs deflection. The test was carried out with double banners on a single lighting column.

Static conditions were recorded at commencement of test.

Wind tunnel started and base wind speed, force on banner pole, and deflection were recorded. Wind speeds were held for two minutes while increasing wind speed at 10mph increments.

Procedure repeated on fixed arm banner system for comparative measures and the results shown on graph to the right.

Loading Results:

Euro Chieftain max loading of 63.42kgs @ 50mph (Based on 2 banners installed on one column total 3.08sq.m).

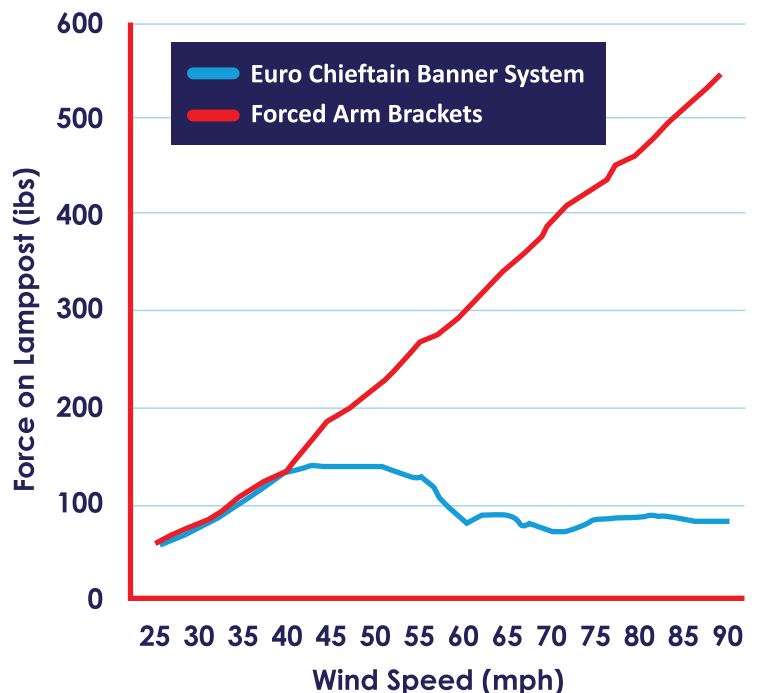
Results: Linearity of the load cell is 0.57kgs max up to 63.42kgs.

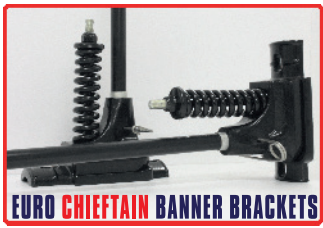
Load reduction starts occurring between 40 and 50mph. Wind force overcame the spring force of the system at the above speed, the Euro Chieftain bracket changed direction of the banner according to the direction of wind. The banner rotated to such a degree that at 70mph some of which started in a perpendicular position to the wind direction, billowed and turned, such that at over 70mph the middle of the banners were actually partially hidden behind the pole. This rotation was very significant in reducing the exposed area to the wind velocity and limiting the force to the pole.

Calculated Reduction in Area:

Calculated using $A = F / 1/2\rho C_d u^2$, where reduction in area % was calculated at 90mph or 144.84kmph.

WIND LOADING GRAPH

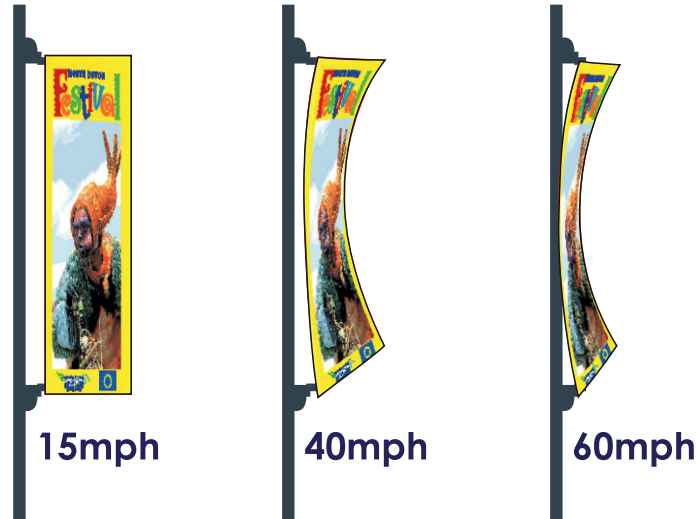




**EN40
COMPLIANT**

WIND TUNNEL TEST DATA

Bracket Reaction in different wind speeds



Reduction in Loading Area: 87.98%.

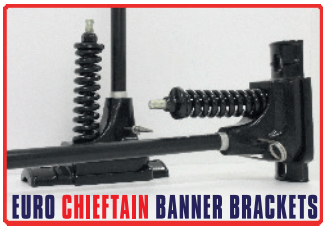
This means that from a total banner area of 3.08sq.m the Euro Chieftain effectively reduced the wind load area to 0.4sq.m. When this is applied to a single banner installation of 1.54sq.m (760mm x 2030mm) conformity to EN40 is achieved by reducing the wind load area to 0.2sq.m (EN40 stipulates that a standard lighting column must be capable of taking the maximum wind loading exerted by a standard rigid road sign of 0.3sq.m).

Time Seconds	Airspeed		Output_1	Output_2	0 - 10 Vsignal	Force caused by Banner only	Reduction in Area ($A = F / 0.256 * V^2$)
	kmph	mph	Vdc	Vdc	Vdc	lbs	%
1000	40.23	25	-1.350	1.191	0.298	58.030	0.00
1100	48.28	30	-1.320	1.172	0.432	78.301	0.00
1200	56.33	35	-1.250	1.098	0.633	108.452	0.00
1400	64.37	40	-1.184	1.035	0.817	135.969	0.40
2500	72.42	45	-0.760	0.616	0.838	138.359	19.92
4000	80.47	50	-0.318	0.176	0.855	139.825	34.45
4250	88.51	55	0.186	-0.325	0.780	127.698	50.53
4500	96.56	60	0.709	-0.847	0.518	86.484	71.84
4600	104.61	65	0.770	-0.907	0.538	87.777	75.65
4700	112.65	70	1.009	-1.141	0.437	70.980	83.02
4800	120.70	75	1.043	-1.179	0.505	79.763	83.38
4900	128.75	80	1.077	-1.213	0.540	81.699	85.04
5000	136.79	85	1.106	-1.242	0.544	82.976	86.54
5000	144.84	90	1.1396	-1.280	0.568	83.105	87.98%

Reduction in Loading Area 87.98%

BANNERS ARE TEMPORARY SIGNAGE & MUST BE REMOVED PRIOR TO ANY HIGH WIND OR STORM IN EXCESS OF 64MPH

It is the responsibility of the customer to satisfy themselves that the lampcolumns they are proposing to use with this system comply fully to EN40 regulations.



WARRANTY STATEMENT

Our Warranty and Your Responsibilities

The Euro Chieftain system will work well for many years, increasing banner life offering excellent banner longevity. However, maintenance is crucial and forms an integral part of the warranty requirements.

Banding and Other Considerations

Banding of all types require general maintenance, and even replacement, from time to time. We recommend only Tamtorque banding to be used with our systems. It is recommended that plastic sleeving is used between the brackets and the column. This helps to prevent damage to the painted surface of the column. This sleeving can be purchased from us in 30m x 225mm rolls for you to cut to size.

Maintenance

A visual check must be performed 2-4 weeks after the initial installation and re-tighten the banding if necessary. Thereafter visually check on the bracket condition and banding once a month and/or after any high wind storm, ensuring that there is no visible damage to the bracket and there is still a strong tension when moving the poles from side to side. It may well be necessary to tighten or replace the banding from time to time. Signgeer encourages customers to remove banners from brackets when a known storm on a scale of 12 (64mph or higher) is expected on the Beaufort wind force scale. A maintenance log must be kept as part of the warranty requirements and as a matter of health & safety.

Warranty

Signgeer provides a five-year "Return to Base" warranty on the Euro Chieftain system against product design, manufacturing and its wind-spilling capabilities as outlined in our Technical Data sheets and adherence to our detailed installation procedure is an essential part of the warranty. During this warranty period, Bannerflex Europe will replace or repair the Euro Chieftain brackets. This warranty applies only to the original purchaser and is in lieu of all other warranties either expressed or implied for a period of four years from the date of purchase.

Signgeer will not cover the following:

SHIPPING: customer is to bear all shipping expenses to return the unit to Signgeer. **LABOUR & EXPENSES** associated with the removal or installation of replacement systems. **DAMAGE:** caused by improper installation, non/poor maintenance, misuse, neglect abuse, accidents, alterations, corrosive environments and any other abnormal service conditions including freak weather events. Our warranty only extends to the brackets and fixings (if purchased from us) and does not include banners. **WIND SPEED** - This warranty specifically does not include product damage due to weather conditions rated 12 and higher (64mph) on the Beaufort wind force scale.

Claims against the warranty must include:

Clear pictures of installations, including proper banding / fixing was carried out. Met Office weather report for the entire period that the system was installed, to show that there were no storms above 64mph inc gusts of wind (rather than just wind speeds) during the period while the brackets were installed. A copy of your maintenance log to prove proper checks were carried out as described above will be required.

Signgeer customers recognize that performance related products like the Euro Chieftain require occasional maintenance including checking for loose banding and/or the replacement of bands.

It is the responsibility of the customer to satisfy themselves that the lampcolumns they are proposing to use with this system comply fully to EN40 regulations.