

LATERAL WIND AT ROADS

QUALITY THROUGH INNOVATION AND DESIGN

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Energy, Water, Environment.
Global Sustainable Solutions.

14 Lateral Wind at Roads – WindAlert System

The effect of wind on the stability of vehicles is an important safety consideration as in many cases lateral wind is the reason of accidents. Variables that contribute to vehicle rollovers can be divided into several categories: vehicle characteristics, road features (short radius curves on highway ramps, high bridges across deep valleys between mountains, etc.), excessive speeds, human factors and, of course, the intensity of lateral winds.



So the risk of vehicle over turning depends on many factors but heavy crosswinds has been noted to be a critical safety factor in areas with frequent high winds, or in areas prone to strong gusts.

Over the years the effects of high winds on road and railways have become of increasing concern to transportation system operators. Cars, high-sided lorries and high speed trains can be at risk of a wind-induced accident on exposed sites such as embankments or long span bridges.



ENE A Grupo® offers our advanced WindAlert System for Road Traffic Safety, strongly recommended in the case of heavy lateral winds be expected at any site along the roads. The basic system consists in one or more Wind Meteorological Stations installed at the points of interest, for example at the exit of a tunnel which is followed by a bridge located between two mountains, over a deep valley, because in these conditions

the winds are concentrated and intensified, thereby causing a great risk of overturning, as the vehicle passes from not suffering any lateral wind inside the tunnel to have to face a strong crosswind just outside the tunnel.

According to the characteristics of the terrain and other factors, the Critical Wind Curves are calculated previously for each specific site and used by the Wind Meteorological Stations for alerting if such CWC have been exceeded at any moment. This information can be transmitted automatically to a Variable Message Sign (VMS) located inside the tunnel or at any suitable point of the road, for alerting the drivers about a certain level of overturning risk.



The same information can be also transmitted to a Central Receiving Station which also can disseminate the alerts to the drivers by other ways as radio broadcast or controlling remotely the VMS.

Since 2004, prestigious European companies and Universities aware of the gap between end-users requirements and existing technologies, cooperate in the European “WEATHER” Project, putting together their experience and knowhow on wind modelling, risk analysis, data-logger manufacturing, wind sensors, communications technologies, environmental monitoring and road surface state measurement, in order to develop a turnkey wind alarm system for road and rail managers.

The W.E.A.T.H.E.R. Program (Wind Early Alarm System for Terrestrial Transport Handling Evaluation of Risks) http://cordis.europa.eu/project/rcn/86545_en.html was a Cooperative Research Project of the European Community , of a great interest for Road Traffic and High Speed Trains safety.

ENEA Grupo® markets internationally the WindAlert System, developed by active participants in the WEATHER Project, as a very advanced solution for preventing the accidents caused by heavy lateral winds in the roads, alerting in advance to the drivers about the presence of strong winds on the road, at the exit of tunnels, or when driven on high bridges or in areas of strong and frequent gusts.

So the WindAlert System is the resulting practical solution for road traffic application of the “WEATHER” Project, and there is now also available as a second version for application in high speed railways.