

## Methodology: How we tested

For the second year, ACI and its partner clubs tested pedestrian crossings within the scope of EuroTest, the international test programme involving 17 automobile clubs. The high number of pedestrians killed in road accidents in Europe pushed the ACI and its partner to start an assessment programme focussed on pedestrian crossings. As usual, in the EuroTEST activities along with awareness campaign addressed to pedestrians and drivers, a methodology was developed aimed at assessing the safety levels of single pedestrian crossings. The evaluation and comparison of crossings systems in Europe provide the opportunity to identify shortcomings and possibilities for improvement, as well as model solutions.

310 pedestrian crossings were tested in 31 European main cities: Barcelona, Belgrade, Berlin, Bratislava, Brussels, Bucharest, Budapest, Copenhagen, Dubrovnik, Frankfurt, Geneva, Helsinki, Istanbul, Linz, London, Ljubljana, Luxembourg, Madrid, Milan, Munich, Naples, Oslo, Paris, Prague, Rome, Rotterdam, Seville, Stockholm, Strasbourg, Vienna and Zagreb. In order to make the assessment as much comparable as possible among the different cities, all the tested crossings have been selected inside well defined areas of each city, according the following common guidelines:

- High tourist interest
- Good transport facilities
- Traffic criticisms nearby
- Similar dimensions of the areas.

Within each area, a minimum of 10 crossings have been submitted to the inspections, trying to cover all the possible kind of crossings (signalized/not signalized, intersection/road link, one way/two ways roads, one lane/multi-lane per direction). The inspections were performed directly by the ACI technical experts (two teams of three units), who travelled along the European Capitals from 3 June to 24 September 2009, walking for about 240 km along the 310 crossings. Each crossing was tested both in the daylight and in the night time.

The ACI, which was in charge of the project, developed a methodology for the safety assessment of the pedestrian crossings.

On the basis of literature review results, 25 safety factors were defined and clustered into four safety categories. The weighting process was carried on in 2008 by the CTL by means of cross-comparison submitted to a qualified focus group (Analytical Hierarchy Process) and endorsed by the results of in-depth surveys on serious accidents involving pedestrians. In the 2009 the weighting process was refined by the ACI based on the feedbacks come from the 2008 test campaign.

Then two checklists were developed for crossings at road intersections and for pedestrian crossings at road link.

Using the checklist, the following four theme blocks were checked:

### **Crossing system**

**Weighting: 23%**

- Crossing distance (from sidewalk to sidewalk)
- Pedestrian-vehicles conflict points
- Pedestrian refuge islands (crossing islands)
- Exclusive pedestrian signal phase
- Green phase and Transition phase (between green and red phase) efficiency
- Red phase duration
- Pedestrian countdown signal
- Road surface maintenance
- Crossing markings maintenance
- Crossing signs maintenance

### **Daylight visibility**

**Weighting: 26%**

- Minimum approach sight distance (distance needed for a driver to recognize the presence of a pedestrian waiting to cross at the pedestrian crossing)
- Visibility of Pedestrian crossing signs (for drivers)
- Visibility of road markings (for drivers).
- Pedestrian crossing width.
- Specific traffic direction markings (e.g. triangles/arrows or "Look left/Look right" road markings).

### **Night-time visibility**

**Weighting: 32%**

- Lighting conditions
- Minimum approach sight distance in the night time (distance needed for a driver to recognize the presence of a pedestrian waiting to cross at the pedestrian crossing)
- Visibility of Pedestrian crossing signs at night time(for drivers)
- Visibility of road markings at night time (for drivers).

### **Accessibility**

**Weighting: 19%**

- Presence of dropped or ground level kerbs
- Presence of tactile paving (for visually impaired people)
- Presence of acoustic devices (for blind or partially sighted pedestrians)
- Presence of obstacles (parked vehicles, utility poles, signs, holes, etc.) that could be a hazard for approaching pedestrians or pushing them to cross outside the crossings
- Sidewalk width.

The differences between crossings with and crossing without traffic lights were considered in the evaluation process (different evaluation degrees).

The crossings were rated on the basis of a points system with the following ratings: Very good, Good, Acceptable, Poor and Very poor.

The results of the single pedestrian crossings belonging to each city, were finally analyzed, in order to better understand the number of crossings rated in each rating category and the variability of the single crossings results. This enabled to underline the cities with the major number of positive crossings and to highlight those with the highest number of negative situations. Of course this kind of aggregation is as more reliable as lower is the variability of the results respect to the average.