



## **WG 6 – MAINTENANCE AND REPAIR**

**Animateur:**

Henry A. Russell

**Vice-Animateur:**

René van den Bosch

**Tutor:**

Tarcisio Celestino



The working Group met on Sunday April 24 2016 In  
at WTC in San Francisco California.

There were members from representatives from 10  
member nations; Brazil, Germany, Italy,  
Netherlands, Thailand, Taiwan, United Kingdom and  
United States of America



A presentation by Mr. Kaz Tabrizi of the United States presented a technical paper on the use of LIDAR Combined with Infra-red to inspect tunnel liners and to document the physical condition of the liner. In addition to the LIDAR the use of Infra sensing identified groundwater intrusion by the thermal sensing. This approach to identify leakage is a breakthrough in the industry and the Working Group desires to place Descriptions and illustrations of this system in our upcoming publication ***Control of Groundwater Intrusion in Operating Tunnels.***

The Working Group is currently continuing our work on the ***Control Of Groundwater Intrusion in Operating Operating Tunnels.*** The progress has been steady and the first chapter of the document is complete.



The Working Group Discussed the progress of the review of the last document **Recommendations for Structural Fire Resistance in Road Tunnels**, which was submitted in Geneva in 2013.

Review Comments were received early in 2014 and were addressed in Brazil in 2014

In 2015 and resubmitted to the Secretariat for review and comment from the Reviewers.

This document has comments. been sent to PIARC for The Working Group is concerned about the length

Of time to review the document.

Moving forward, the Working Group is willing and motivated to cooperatively work with whichever delegation

Delegation from PIARV, CETU ITA To address any concerns get aligned and publish the document.

Working Group had two documents successfully developed and approved in the past. One of which ***Guidelines for Structural Fire Resistance for Road Tunnels*** was adopted by the National Fire Protection Association (NFPA) was adopted in NFPA 502 in regard to fire protection levels for tunnel liners. This was a significant recognition of the work produced by the Working Group. The Working Group wishes to continue is valuable work, in developing guidelines for numerous needs for operating tunnel owners an operators. Those include:

- Seismic reinforcement
- Waterproofing repairs
- Technical Advances for inspection
- Review of new repair materials
- Facility management in regard to maintenance
- Structural repairs
- Maintenance and frequency recommendations

The Working Group looks forward to working with other Working Groups and Committees to advance the state of the art in Maintenance

Respectfully Submitted,

Henry Russell  
Animateur Working Group 6

