



ITA Report WG 9 Seismic Effects 2019 Report

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WG 9 Seismic Effects Current Status

Current state – No Animateur at this time

Currently only have a Vice Animateur (Wenge Qiu)

WG 9 Seismic Effects Group Discussions

- WTC 2019 Group discussed state of WG 9 – agreed on need for re-energization of WG
- New Animateur discussed – WG 9 proposes Conrad Felice of USA as new Animateur

WG 9 Seismic Effects - Goals

Group discussed goals of WG 9

Primary Goal is to promote the use of tunnels and underground space in seismic regions noting that:

- Tunnels are a good solution in seismic areas
- Tunnels are very safe in seismic areas – have performed very well during events – much less damage than surface structures
- Do need special design provisions, but those provisions are generally much less than for surface structures

WG 9 Seismic Effects – 1 Year Goals

At WTC 2019 WG 9 developed a 2 to 3 year list of goals - 1st Year Goals:

1. Confirm new animateur – Conrad Felice (USA) proposed.
2. Re-establish communications within group
3. Communicate benefits of tunnels in seismic and earthquake areas (Target 1 year, next WTC) – ITA web page to help educate owners of benefits of considering use of tunnels

WG 9 Seismic Effects – 1 Year Goals

4. Establish a list of member nations to participate in the committee – increase participation
5. Establish what tunnel seismic design related information would be most valuable to ITA members
6. Develop accessible database of tunnel seismic related papers/resources (bibliography 1st – copies later)

WG 9 Seismic Effects – Later Year Goals

1. Provide & maintain history of performance of tunnels in seismic zone – ongoing, accessible database
2. Establish goals of design – performance levels etc.
3. Synthesis of standards from around the world/current practice – resource to ITA members – identify gaps
4. Develop & provide suggested guidelines for design – analysis & design details – different types of tunnels – build upon Hashash et al, 2001 ITA work

WG 9 Seismic Effects – Later Year Goals

5. Identify research needs & interest items:
 - performance of connections between openings (e.g. tunnels/stations, tunnels/cross passages)
 - instrumentation
 - gaskets & connecting devices
 - numerical modelling
 - post seismic event inspections