

<b>Project</b>	<b>Motorway Zagreb - Macelj</b>
<b>Client</b>	AZM Autocesta Zagreb-Macelj d.o.o.
<b>Consulting Services</b>	2004 - 2007 Independent Engineer (in cooperation with VCE Vienna Consulting Engineers)
<b>Total Costs</b>	Approx. € 300 Mio.
<b>Technical Data</b>	Tunnels (only) 10 Tunnel tubes each with 2 lanes: total length 4692 m 1 Emergency and Service tunnel: length 1242 m



<b>Description</b>	<p>The most northern approximately 17,2 km long section of the new motorway includes 4 twin tube tunnels:</p> <ul style="list-style-type: none"> <li>Tunnel Levacia: 358 m and 374 m</li> <li>Tunnel Vidovci: 266 m and 261 m</li> <li>Tunnel Durmanec: 204 m and 204 m</li> <li>Tunnel Frukov Krc: 354 m and 341 m</li> </ul> <p>Over a length of approximately 3,75 km the motorway was constructed with one carriageway only. This section includes the longest two tunnels with bidirectional traffic:</p> <ul style="list-style-type: none"> <li>Tunnel Sveta Tri Kralja: 1740 m</li> <li>Tunnel Brezovica: 590 m</li> </ul> <p>For the longest tunnel Sveta Tri Kralja a parallel emergency and service tunnel with 1242 m was constructed.</p> <p>All tunnels were constructed according to the principles of NATM in different geological conditions. In some sections a pipe roof support was applied.</p> <p>Geological Conditions: Siltite with sand and clay (Levacica, Vidovci); conglomerates, sandstone, limestone, marl (Sveta Tri Kralja); tuff, dolomite (Brezovica); sandstone (Durmanec, Frukov Krc).</p>
--------------------	---