

**Expressway Standard Technical Specifications by NEXCO**

## **Outline of Tunnel Ventilation Specifications**

**Nippon Expressway Research Institute Company Limited**

**April, 2013**

# Table of Contents

<b>Chapter 1 Generals</b> .....	1
1-1 Scope.....	1
1-2 History.....	1
1-3 Ventilation in general.....	2
1-4 Terms .....	2
1-4-1 Description of terms.....	2
1-4-2 Abbreviations .....	3
<b>Chapter 2 Planning</b> .....	4
2-1 Survey.....	4
2-2 Traffic volume.....	4
2-2-1 Design hourly volume .....	4
2-2-2 Design capacity .....	6
2-3 Selection of ventilation systems .....	7
<b>Chapter 3 Fresh air requirement</b> .....	10
3-1 Exhaust volume and design concentration of target substances of ventilation.....	10
3-1-1 Exhaust volume .....	10
3-1-2 Design concentration .....	11
3-1-3 Traffic congestions and fires .....	13
3-2 Correction for exhaust volume.....	13
3-3 Calculation of fresh air requirement.....	14
<b>Chapter 4 Natural ventilation power and traffic ventilation power</b> .....	16
4-1 Natural ventilation power.....	16
4-2-Traffic ventilation power .....	16
4-3 Study of fresh air taken into a tunnel by traffic ventilation power .....	17
<b>Chapter 5 References</b> .....	25
5-1 NEXCO tunnels specifications.....	25