



***Efficient tunnel ventilation
with Witt & Sohn***

About WITT&SOHN

- Formed in 1945
- Witt-Family in 3rd Generation
- Pre-eminent in Tunnel ventilation;
Shipbuilding;
Nuclear power plants;
Chemical & General Industry



Witt-family

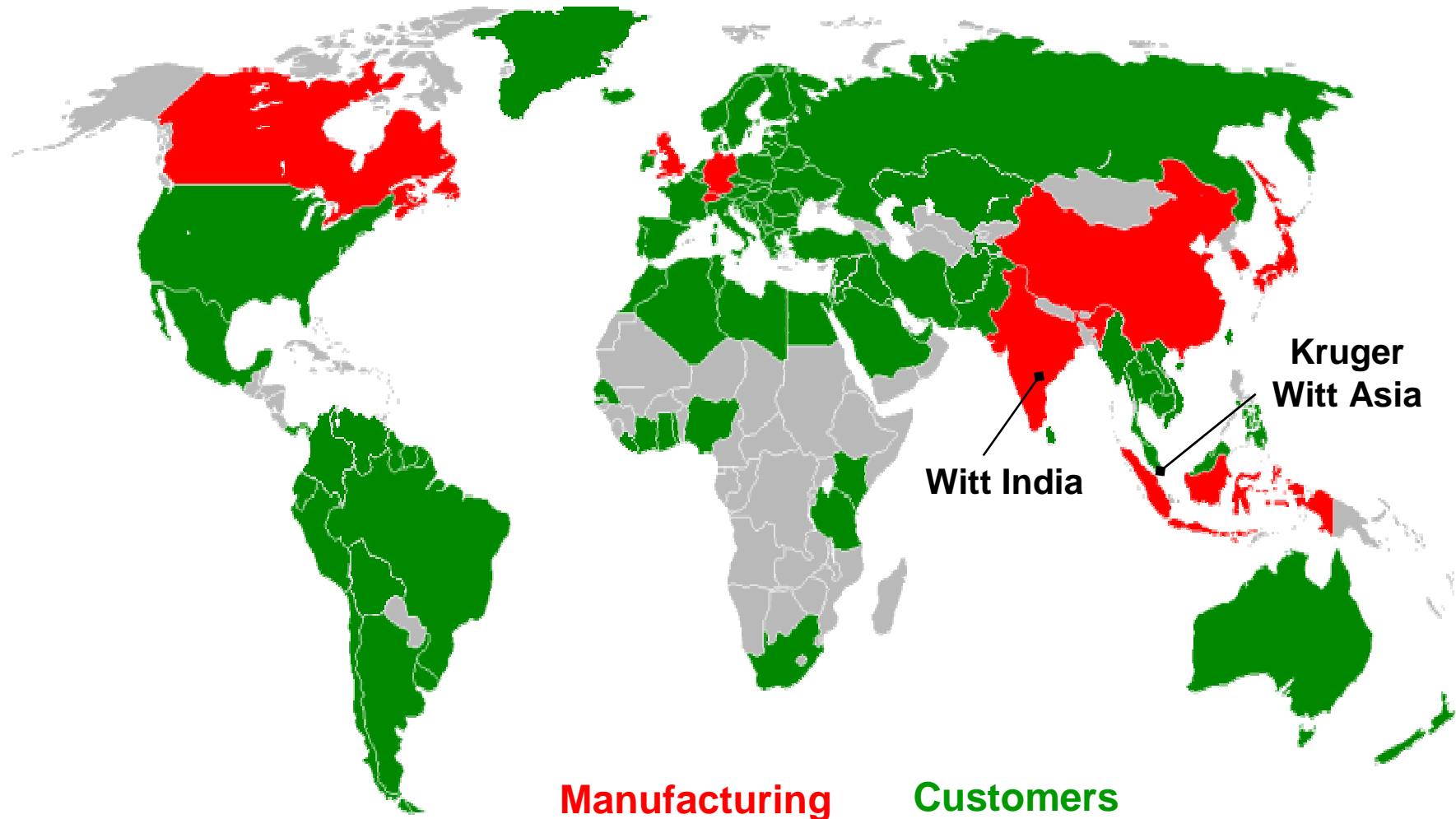


Factory in Pinneberg

■ The **WITT GROUP**:

- WITT&SOHN AG **1945**
- LF (DK), '93
- Fan Systems Ltd. (UK), '95 **1950**
- Meidinger AG (CH), '77 **1900**
- PSB (GER + UK), '98
- Fläktcom (S), '03
- Alldays Peacock (UK), '05 **1629**
- Witt&Sohn India (JV), '07
- Kruger Witt Asia (JV), '07





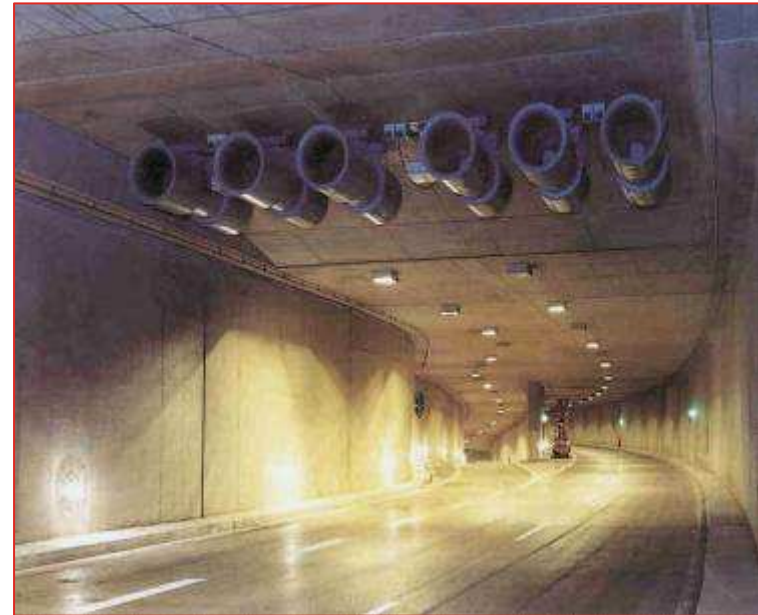
■ **Axial Fan Performance**

- $Q \leq 1,500,000 \text{ m}^3/\text{h}$
- $D \leq 3550\text{mm}$
- Reversibility up to 100%
- Up to 12mm Casing
- Direct driven
- Various Accessories
- Heat Test ($\leq 700^\circ\text{C}$)

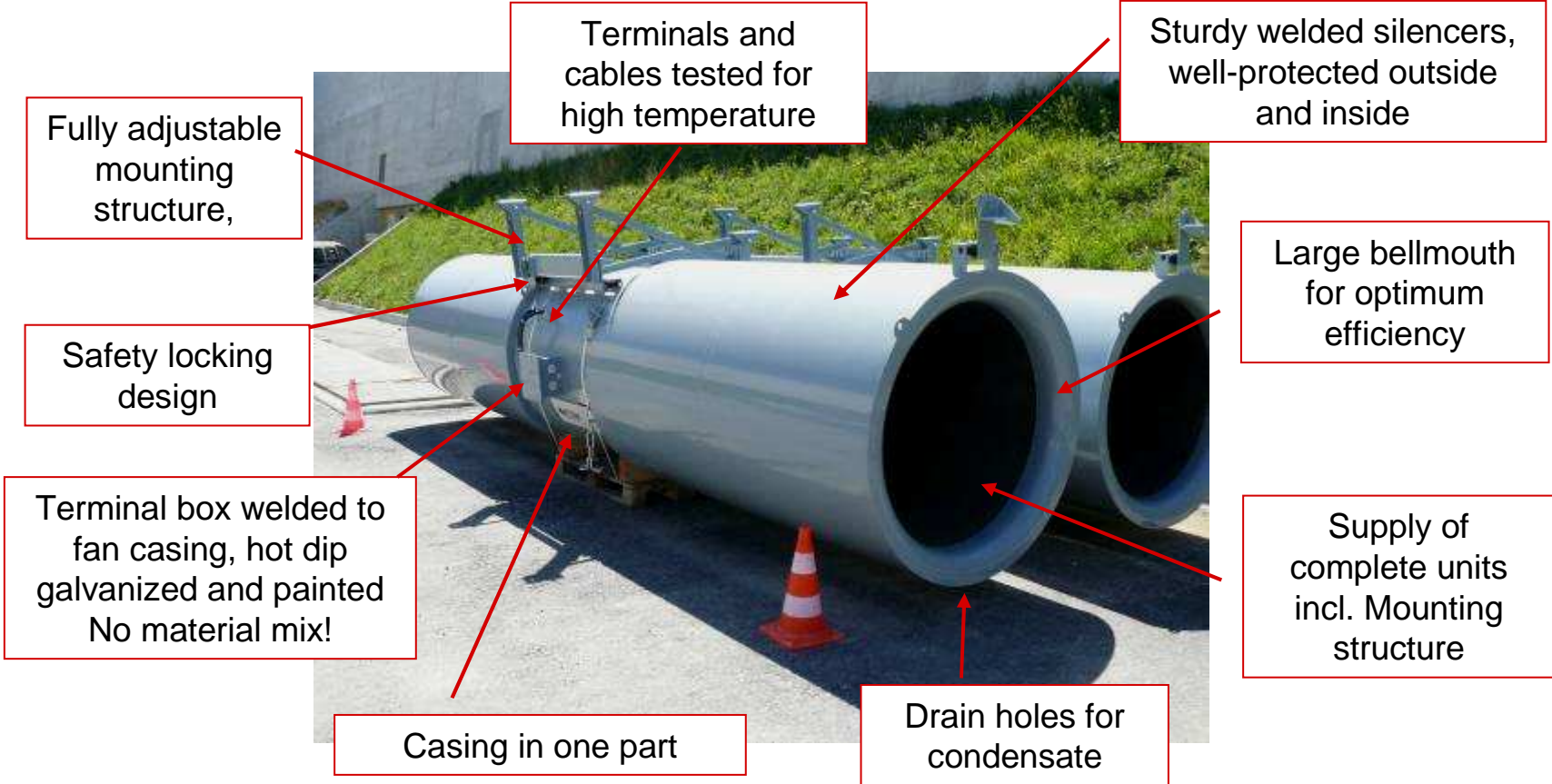


■ **Jet Fan Performance**

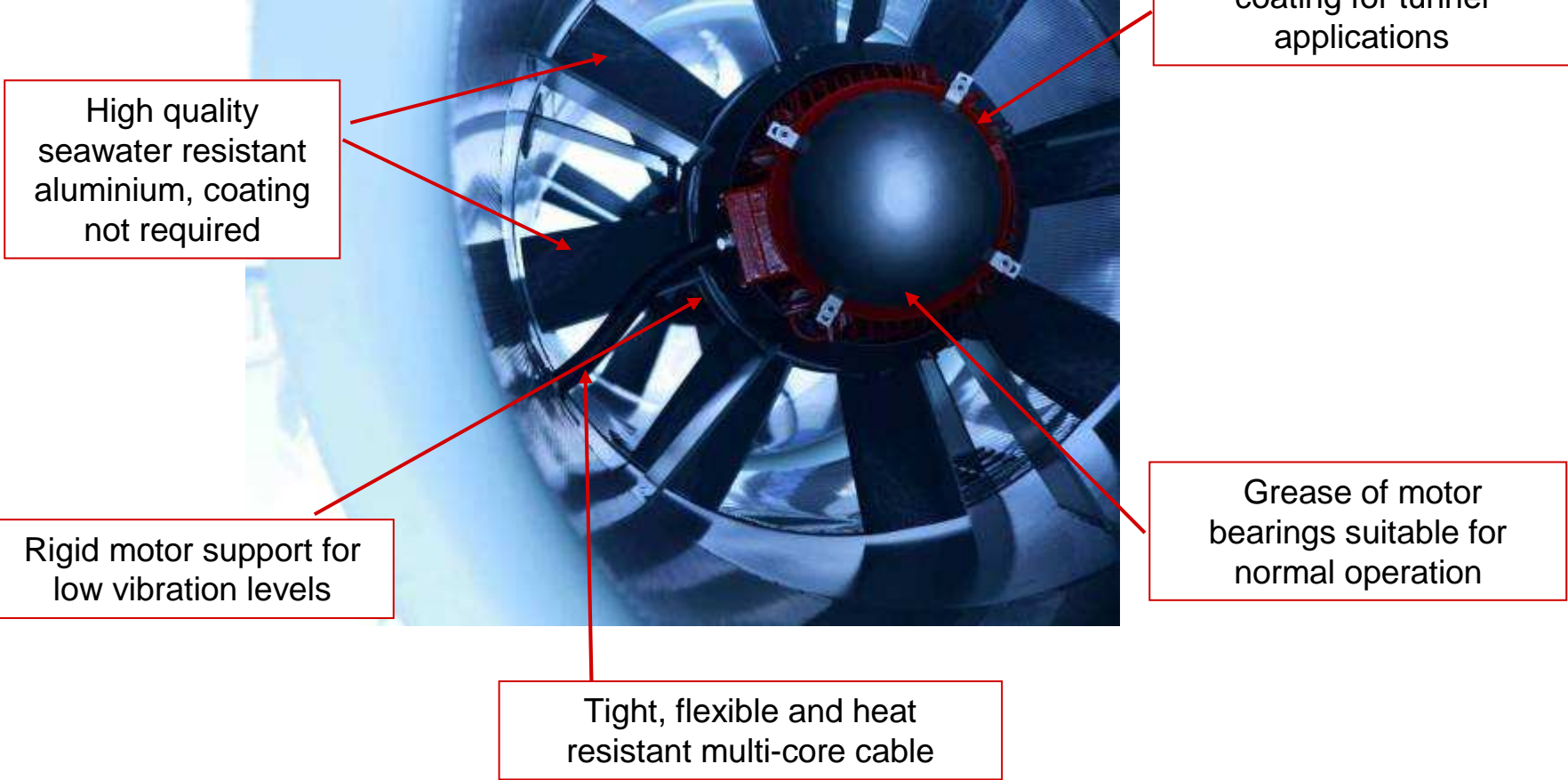
- $T \leq 3,000 \text{ N}$
- $D \leq 1800\text{mm}$
- Reversibility up to 100%
- Traditional Jet
- **BANANA Jet[®]**
- Direct driven
- Various Accessories
- Heat Tests ($\leq 400^\circ\text{C}$)



■ **Jet Fan Features**



■ **Jet Fan Features**



- ISO9001 since 1992 by TÜV
 - certified for more stringent KTA 1401 (Nuclear Plants) since 1976!!

- AMCA certified laboratory

- Comprehensive Document Package with Quality Record for each Fan

- In house material analysis

Documented Quality



ISO 9001-Certificate



AMCA-Certificate

- Reference Lists (Extract):
 - Metros
 - Road Tunnels
 - Road Tunnels with **BANANA Jet®**
 - Under Sea Road Tunnels

References – Metro

Project	Country	Year
Metro Istanbul	Turkey	1999
Metro Bucarest	Rumenia	1999
Metro de Lyon	France	1999
KRCR West Rail	Hong Kong	2001
Metro Bangkok South	Thailand	2001
Metro Toulouse	France	2002
Metro Delhi	India	2004
Metro Madrid	Spain	2006
RATP Renovation	France	2009

References – Metro

- KCRC West Rail, HK
- Supplied Axial Fans:
 - 41 x 2000 rev.
 - 10 x 1400 rev.
 - 36 x 1250
 - all 250°C/ 1h



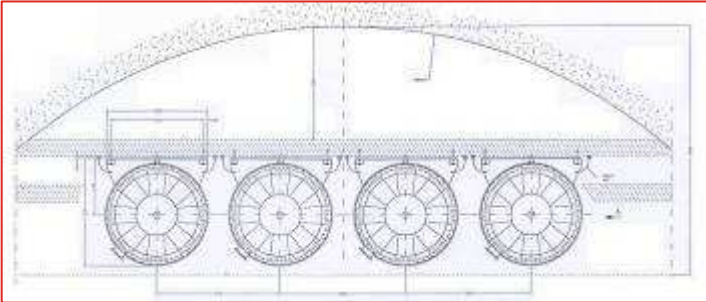
References – Road Tunnels

Project	Country	Year
Tunnel El Azahr	Egypt	1999
Elbtunnel 4 th Tube	Germany	2000
Tunnel de Chavants	France	2001
S6 Semmering	Austria	2002
Dublin Port Tunnel	Ireland	2003
Garlenda Allasio	Italy	2004
A11 Angers	France	2007
Bergen Ringveg Vest	Norway	2008
Brisbane Airport Link	Australia	2009

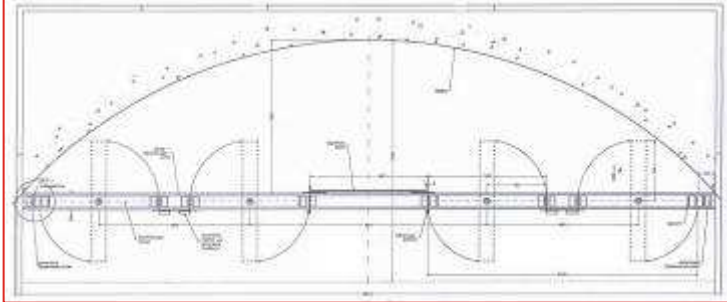
References – Road Tunnels

- Elbtunnel Concept by **WITT&SOHN**:
Longitudinal Ventilation + Spot Extraction

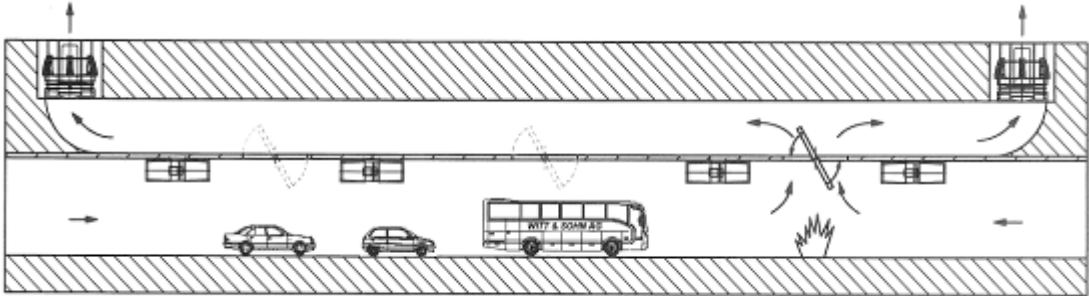
Cross-Section with Jet Fans



Cross-Section with Dampers



Longitudinal Section



References – Road Tunnels



Ventilation Building



Control Room



Fire Simulation



Smoke extraction

References – Road Tunnels with BANANA Jet®

Project	Country	Year
Tunnel Balmenrain	Switzerland	2003
Tunnel Uznaberg	Switzerland	2003
Tunnel Moscow Lefortovo	Russia	2003
Tunnel Aubing	Germany	2004
Calle Embajadores con M40	Spain	2006
Porte des Vanves (Paris)	France	2006
Palm Jumeirah	U.A.E.	2007
Tugun Bypass	Australia	2007
Königshainer Berge	Germany	2010

References – **BANANA Jet®**

- Lefortovo, Moscow
 - 52 x **BANANA Jet®**
250°C/ 1h
 - 6 x Exhaust 2240mm
600°C / 1h
 - 4 x Supply 2240mm



References – **BANANA Jet®**

- Palm Jumeirah,
Dubai
 - 22 x **BANANA Jet®**
(designed: 28 trad. Jets)
250°C/ 2h

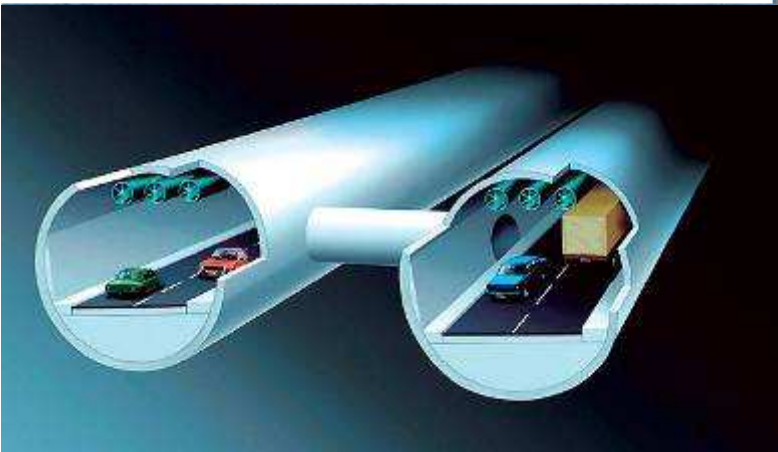


References – Under Sea Road Tunnels

Project	Country	Length
Elbtunnel	Germany	3.1 km
Herrentunnel	Germany	2.1 km
Wesertunnel	Germany	1.7 km
Palm Jumeriah	U.A.E.	1.0 km
Oslo Tunnelen	Norway	8.0 km
Bomlafjordtunnelen	Norway	7.9 km
Nordkapp Tunnelen	Norway	6.9 km
Hvalertunnelen	Norway	3.8 km
Xiang An Tunnel	China	7.5 km

References – Under Sea Road Tunnels

- Herrentunnel, Germany
Length = 2.1 km



References – Under Sea Road Tunnels

- Bomlafjord Tunnelen, Norway
Length = 7.9 km



References – Under Sea Road Tunnels

- Nordkapp Tunnelen, Norway
Length = 6.9 km

