

## LIST OF TUNNEL REFERENCES WITH GLASAL

<u>BELGIUM</u>	<u>m<sup>2</sup></u>	<u>Year</u>
Tunnel "Bellevue" at Ghent	500	1971
Tunnel at Sint-Niklaas	500	1976
Tunnel "Vier Armen" at Kraainem	6.000	1976
Tunnel "Beaux Arts" at Charleroi	4.000	1976
"Liberation" tunnel at Wilrijk (Antwerp)	6.000	1978
Northern cargo tunnel at Zaventem	1.000	1978
Tunnel at Sint-Lambrechts-Woluwe	500	1980
Tunnel "Lode Craeybeckx" at Antwerp	7.000	1981
Tunnel "'t Zand" at Bruges	4.000	1982
Tunnel under the Rupel at Boom	2.000	1982
Tunnel "Léonard" at Auderghem	5.000	1983
Tunnel "Hallepoort" at Brussels	2.000	1985
Tunnel "Rogier" at Brussels	3.000	1985
Tunnel at Couillet (Charleroi)	8.000	1985
Tunnels on the peripheric at Mons	500	1985
Tunnel at Moeskroen	3.000	1985
Tunnel "Jan De Vos" in Antwerp	4.000	1986
Leopold II tunnel at Brussels	40.000	1988
Kennedy Tunnel in Antwerp	15.000	1988
Liefkenshoektunnel in Antwerp	23.000	1990/1991
Hoge weg tunnel at Zelzate	3.000	1990
Tysmans tunnel in Antwerp	13.000	1990
Beveren tunnel in Antwerp	18.000	1990
Bevrijdingstunnel in Antwerp	6.000	1991
Troon Tunnel in Brussels	3.500	1993

	<u>m2</u>	<u>Year</u>
Vier Armen Tunnel at Tervuren	4.000	1994
Belliard tunnel at Brussels (European Union Quarter)	20.000	1994
Reyers tunnel at Brussels	5.000	1995
Brand Witlock tunnel at Brussels	3.000	1995
Tunnel "Vier Armen" at Kraainem	4.000	1996
Tunnel "Montgomery" at Brussels	6.000	1996
"Jubilee" Tunnel at Brussels	12.000	1997
Vleurgat Tunnel at Brussels	3.000	1998
 <b><u>USA</u></b>		
Cana Tunnel, Boston, USA	24.000	1991
	4.200	2000
 <b><u>CHILI</u></b>		
Lo Prado Tunnel	15.000	2001
Costanera Norte	75.000	2005
Estoril	5.000	2005
Bandera	1.500	2006
Salto El Kennedy	20.000	2008
 <b><u>UNITED KINGDOM</u></b>		
"Holmesdale" Tunnel, London, U.K.	5.750	1982
Limehouse Link tunnel	38.000	1991/1992
East India Dock Link, London	2.000	1995
Barbican Tunnel, London	2.500	1996
 <b><u>FRANCE</u></b>		
Tunnel "Porte de Pantin" at Paris	12.500	1965
Tunnel at Saint-Etienne, France	6.000	1967
Tunnel "Vieux-Port" at Marseille	6.000	1968
Tunnels at Nice	5.000	1970

	<u>m2</u>	<u>Year</u>
<b><u>HONG KONG</u></b>		
Tai Lam Tunnel	65.000	1997
Lion Rock Tunnel	20.000	2001
<b><u>ITALY</u></b>		
Tunnel Galleria Dello Stonio (motorway Rome-Pescara)	7.000	1988
Mont Blanc Tunnel	72.000	1989-1992
Mont Blanc Tunnel (refurbishment after fire)	72.000	2001
Tunnel Strada SS, 51/bis, Primolano (NT)	5.000	1992
Tunnel Quincineti, Aoste	3.500	1995
<b><u>JAPAN</u></b>		
See attached list.		
<b><u>MALAYSIA</u></b>		
Perak tunnel	8.500	1987
Karak tunnel	6.500	1988
Damansara tunnel	1.500	1999
KL Underpass tunnel	8.540	2002
<b><u>NETHERLANDS</u></b>		
“Kil” tunnel in the Netherlands		1974
Vlake tunnel, South-Beveland	4.000	1975
Tunnel of Drecht	25.000	1978
Heienoord tunnel	4.700	1990
Heienoord tunnel (2nd part)	2.500	1994

	<u>m2</u>	<u>Year</u>
<b><u>SPAIN</u></b>		
Tunnel in the A.Z.C.A. commercial centre at Madrid	5.000	1974
Tunnel of Navacerrada at Madrid	3.000	1974
Tunnel de la Rovira, Barcelona	9.000	1988
	7.600	2000
Tunnel de la Malmassin, Bilbao	22.500	1990
Tunnel de la Valvidrera, Barcelona	18.000	1991
Tunnel de la Valvidrera, Barcelona	5.000	1992
Tunnel del Cadi	24.000	1994
Tunnel del Mataro	10.000	1994
Tunnel de Santander	10.500	1994
Tunnel Eibar, Bilbao	6.000	1995
 <b><u>CZECHIA</u></b>		
STRAHOV tunnel, Prague	20.000	1995
 <b><u>CHINA</u></b>		
CHONGQING Shihuan Road Tunnel	13.000	1999
NANJING Xuanwu Lake Road Tunnel	28.000	2002
CHENGDU Hongxing Road Tunnel	11.500	2003
HANGZHOU Hubin Road Tunnel	11.000	2003
NANJING Jiqingmen Road Tunnel	6.100	2003
CHENGDU Dongcheng Road Tunnel	4.900	2003
SICHUAN Mianyang Tunnel	4.200	2003
SHANGHAI Fuxing Road Tunnel	24.000	2004
NANJING Zhanqian Square Road Tunnel	8.200	2004
KUNMING Dongfeng Road Tunnel	6.200	2004
NANJING Binjiang Road Tunnel	4.800	2004
CHENGDU Tianfu Square Road Tunnel	4.000	2004
NANJING Kaixuan Road Tunnel	6.400	2004

<b><u>CHINA</u></b> (continued)	<b><u>m2</u></b>	<b><u>Year</u></b>
NANJING Jiuhuashan Tunnel	32.700	2005
NANJING Gulou Tunnel	9.400	2005
SHANGHAI Central Circle Beihong Road Tunnel	18.750	2005
GUANGZHOU Huangpu-Huancheng Tunnel	1.850	2005
GUANGZHOU North Kejun main road - Thirteenth part	1.650	2005
GUANGZHOU south Extended Keyun tunnel	1.750	2005
GUANGZHOU North Kejun main road - Fourth part	1.100	2005
GUANGZHOU west tunnel of south Xingao Road	2.750	2005
GUANGZHOU south Xingao road, west tunnel of south Dongxiao Road	2.950	2005
GUANGZHOU Wushan Road Tunnel	3.000	2006
CHONGQING Nancheng Tunnel	20.670	2006
WUHAN Shouyi Square Tunnel	9.360	2006
GUANGZHOU Baiyun Tunnel	3.900	2006
DALIAN Shimenshan Tunnel	15.000	2006
WEST SHENZHEN Hong Kong Pass Way	55.000	2007
SUZHOU Dushulu Tunnel	59.275	2007
DALIAN Jiaojinshan Tunnel	16.850	2007
WUXI Lihu Tunnel	10.950	2007
BEIJING Chengfu Road Tunnel	24.000	2007
 <b><u>RUSSIA</u></b>		
KUTUZOVSKI tunnel, Moscow	30.000	2000
MASLOVICA tunnel	3.000	2001
MIR tunnel	5.000	2001

## TUNNEL REFERENCES IN JAPAN

### GLASAL TUNNEL LINING

List of tunnels using GLASAL (from '83/4 to '86/3)

Date	Name of Tunnel	Length (m)	Shipping vol (m <sup>2</sup> )	Remarks
1983 7-8	Yoneyama tunnel		7,600	Hokuriku expressway
9	Takao tunnel	1,030	1,400	Chugoku expressway
10	Nagamine tunnel	1,240	8,100	Kainan uasa expressway
11	Tenozan tunnel	1,100	8,300	Meishin expressway
11	Takarazuka tunnel	580	2,100	Chugoku expressway
	Others		9,500	
		(total)	37,000	(from '83/4 to '84/3)
1984 11	Miyasato tunnel	1,210	2,900	Chugoku expressway
11	Uri tunnel	920	1,700	Tomei expressway
10-12	Kobotoke tunnel B	1,620	5,800	Chuo expressway
3	Enasan tunnel	8,649	14,000	Chuo expressway
3	Sukegawa tunnel A	1,811	8,000	Jouban expressway
3	Sukegawa tunnel B	1,764	8,600	Jouban expressway
	Kurakake tunnel	1,866	9,300	Jouban expressway
	Others		10,000	
		(total)	61,500	(from '84/4 to '85/3)
1985 6	Ouhirayama tunnel		12,400	Sanyo Road
6	Tsubaki tunnel	1,160	10,300	Sanyo Road
7	Shiroyama tunnel		7,700	Sanyo expressway
10	Yamada tunnel		1,300	Himeji by-pass
10	Fukuda tunnel		1,100	Himeji by-pass
11	Yamabuki tunnel		1,900	No. 19 Nat. Highway
12	Taizanji tunnel		2,800	Himeji by-pass
1986 1	Gongenyama tunnel	1,400	7,000	Tokai Hokuriku road
2	Kobotoke Tunnel A	1,620	5,800	Chuo expressway
3	Sakanashi Tunnel B	4,000	23,700	Tohoku expressway
	Others		7,000	
		(total)	81,000	(from '85/4 to '86/3)

<b>GLASAL TUNNEL REFERENCES IN JAPAN</b>
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<u>Fiscal Year</u> (April to March)	<u>Name of Tunnel</u>	<u>Quantity (sq.m.)</u>
FY. 1990	Etanbetsu	2,830
	Suyama	1,300
	Hokubou/Toribe	2,150
	Gobun	3,600
	Mokuhara	4,000
	Shoshazan	6,100
	Mitate	8,180
	Shiromidai	4,070
	Minoyama	2,500
	Aina	4,800
	Seiryu	6,200
	Hakusan	900
	Nishiyama	2,446
	Iwato	2,600
Shisugatake	4,000	
		<u>55,676 sq.m. in total</u>
FY. 1991	Tenjin	2,000
	Kanetsu	9,227
	Inokoyama	2,300
	Nishi-shimono	1,650
	Houo	4,500
	Susagamine	7,350
		<u>27,027 sq.m. in total</u>

<u>Fiscal year</u> (April to March)	<u>Name of Tunnel</u>	<u>Quantity</u> (sq.m.)
FY. 1992	Sakashita	4,000
	Iwaki	2,800
	Happuzan	1,380
	Akeshina	7,630
	Ipponmatsu	13,060
	Hinooku	1,600
	Ushizu	2,700
	Takao	4,500
	Sanpeizan	9,400
	Kinmeji	4,300
	Chikanobu (West)	3,000
	Chikanobu (East)	3,000
	Mukougadaira	2,840
	Kobe	2,000
	<u>62,210 sq.m. in total</u>	
FY. 1993	Oya-Kita	2,400
	Tsurugatayama	3,200
	Kake	3,700
	Tsuzumiyama	2,500
	Hiyamaji	5,900
	Kasaiyama (N°1)	8,700
	Kasaiyama (N°2)	12,000
	Soyasan	5,200
	Umetouge (N°1)	3,100
	Umetouge (N°2)	3,100
	Hoki	2,000
	Senda	5,400
	Aijima	1,800
	Haneda	5,040
	Uomi	2,800
	Bantan	3,500
Kokusaimura	2,750	
Suzuka	2,000	

<u>Fiscal year</u> (April to March)	<u>Name of Tunnel</u>	<u>Quantity</u> (sq.m.)
	Ogatouge	2,550
	Yabazu	13,000
	Kitayama	1,300
		<u>91,940 sq.m. in total</u>
FY. 1994	Haneda	1,160
	Hikone	2,300
	Tennouzan	3,200
	Amagoyama	2,200
	Chibagatake	3,200
	Hachidousa	4,200
	Daitaro	2,411
	Natsua	1,300
	Myokenyama	2,462
	Nazumi	4,850
		<u>27,283 sq.m. in total</u>
FY. 1995 (April-Sept)	Kakuto	7,800
	Shin-Kannon	4,500
	Nagara	6,400
		<u>18,700 sq.m. in total</u>
FY. 1999	Ikuno	4,243
	Bantan	2,520
	Shimozu	1,500
	Owashi	1,500
	Minatojima	500
	Morigaki	1,365
	Nishiyama	1,703
	Asagi 1-9	16,574
	Wadayama	2,266
		<u>32,171 sq.m. in total</u>

<u>Fiscal year</u> (April to March)	<u>Name of Tunnel</u>	<u>Quantity</u> (sq.m.)
FY. 2000	Koishi	1,700
FY. 2001	Minoyama	5,900
	Nagano	260
	Taniisohukudo	470
	Suzaki	120
		<u>6,750 sq.m. in total</u>
FY. 2002	Sakura	1,500
	Shuetsu	3,000
	Udatsu	4,000
	Fujishiro	1,100
	Enasan 1 (repair)	4,500
	Sasaya (repair)	1,550
		<u>15,650 sq.m. in total</u>
FY. 2003	Enasan 2 (repair)	8,000
	Chofu	1,800
	Ishibe	1,000
	Shin Nihonzaka	4,500
	Oomiya	4,500
		<u>19,800 sq.m. in total</u>
FY. 2004	Otoyo	2,300
	Sayoka Nakayama	1,000
	Okubiwa	3,500
	Enasan 3 (repair)	4,000
		<u>10,800 sq.m in total</u>
FY. 2005	Tenjinyama	3,000
	Oomiya	4,000
	Nerima	3,000
	Hoketsu	4,000
	Uji	4,000
	Enasan 4 (repair)	4,000
		<u>22,000 sq.m in total</u>

<u>Fiscal year</u> (April to March)	<u>Name of Tunnel</u>	<u>Quantity</u> (sq.m.)
FY.2006	Kasuga-Wadayama	5,900
	Uji 2	2,900
	Amikake (repair)	2,900
	Koshirazu	2,000
	Asakura	1,800
	Misaka	2,800
	Nagahama	350
	Amikake 2 (repair)	1,200
		<u>19,850 sq.m. in total</u>
FY. 2007	Washibetsu	2,000
	FUTAKO	7,000
	Tenjin	3,000
	Yumeshima	7,000
	Yainaba	5,400
	Shin-Nihonzaka	2,500
	Amikake 3 (repair)	4,500
	Yokotani	4,000
	Hiki	2,000
	Hashigami	3,000
	Misc. small projects	30,000
		<u>70,400 sq.m. in total</u>