



times change **copper remains**

KEMBLA[®]
MEDICAL GAS
COPPER TUBE TO
EUROPEAN STANDARD
BS EN 13348



KEMBLA® MEDICAL GAS TUBE TO EUROPEAN STANDARD BS EN 13348

MM Kembla is a world-class producer and Australia's leading supplier of copper tube and manufactures under the famous **KEMBLA®** brand name. MM Kembla manufactures a comprehensive range of copper tube products to comply with a variety of applications and International Standards.

Included in the **KEMBLA®** range is Medical Gas tube manufactured to fully conform to BS EN 13348 specifications and is available from 8mm to 159mm diameter in the equivalent wall thicknesses as Class X plumbing tube. BS EN 13348 copper tube is specified throughout Europe, Asia and the Middle East and is the only copper tube specified in the Health Technical Memorandum 02-01 and ISO 7396-1 which dictate the current best practice for the installation of pipelines for compressed medical gas and vacuum systems.

The internal cleanliness of medical gas and oxygen tubes is critical in order to prevent gas contamination and potential explosions. Oxygen under pressure may cause spontaneous combustion of residual organic drawing oils if they remain inside tubes after manufacture. Oils or other contaminants may also cause patients serious respiratory problems if not removed prior to installation. MM Kembla has a unique manufacturing process to ensure the carbon cleanliness does not exceed 0.02g/m² total carbon as specified in BS EN 13348 for sizes up to 108mm. Sizes over 108mm are not specified in BS EN 13348 but MM Kembla does supply these in line with standard sizes and cleanliness requirements of BS EN 1057 and all other requirements to BS EN 13348. Tests are conducted using the combustion method as stipulated in BS EN 13348. After cleaning, all tubes are individually end-capped to maintain their internal cleanliness, then bundled and wrapped in plastic for maximum protection.

During storage and handling of **KEMBLA®** Medical Gas tube and fittings, particular attention must be given to keeping them clean and dry. When brazing joints, lines must be continuously purged with nitrogen or another appropriate inert gas. Medical gas copper tubes and fittings must be joined with a 5% silver brazing alloy as per HTM 02-01. After brazing, all joints should be cleaned and inspected visually. Pressure and contaminant testing should be performed on installed tubing before final approval and use of the system.

Test Certificates are supplied with all deliveries for each product. Straight lengths of 5.8m are manufactured for ease of containerisation.

KEMBLA® MEDICAL GAS FITTINGS TO EUROPEAN STANDARD BS EN 1254

MM KEMBLA is a leading supplier of a comprehensive range of copper fittings conforming to a variety of applications and International Standards. **KEMBLA®** fittings are marketed under the famous **KEMBLA®** and **K Tick** brand marks. A full range of fittings is available to suit **KEMBLA®** BS EN 13348 Medical Gas tube from 8mm to 159mm.

KEMBLA® Medical Gas fittings are manufactured in accordance with European Standard BS EN 1254 and individually cleaned, bagged and labelled to fully comply with the cleanliness requirements of BS EN 13348. All bags of fittings are individually marked as suitable for medical gas purposes.

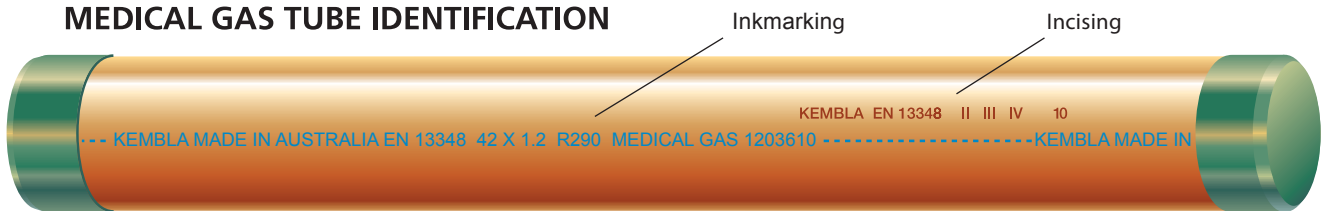
KEMBLA® MEDICAL GAS TUBE TO BS EN 13348

| Nominal Diameter (mm) | Nominal Thickness (mm) | Mass /Length (kg / 5.8m) | Tube Temper # | Safe Working Pressure * (kPa) | Lengths per Bundle |
|-----------------------|------------------------|--------------------------|---------------|-------------------------------|--------------------|
| 8 | 0.8 | 0.94 | HD | 10200 | 100 |
| 10 | 0.8 | 1.20 | HD | 8100 | 100 |
| 12 | 0.8 | 1.46 | HD | 5230 | 100 |
| 15 | 0.7 | 1.63 | HH | 4500 | 100 |
| 22 | 0.9 | 3.09 | HH | 3900 | 50 |
| 28 | 0.9 | 3.98 | HH | 3100 | 50 |
| 35 | 1.2 | 6.61 | HD | 3300 | 50 |
| 42 | 1.2 | 7.98 | HD | 2700 | 50 |
| 54 | 1.2 | 10.33 | HD | 2100 | 30 |
| 67 | 1.2 | 12.81 | HD | 1700 | 25 |
| 76 | 1.5 | 18.24 | HD | 1800 | 25 |
| 108 | 1.5 | 26.04 | HD | 1300 | 10 |
| 133 | 1.5 | 32.15 | HD | 1000 | 10 |
| 159 | 2.0 | 51.18 | HD | 1200 | 5 |

* Based on annealed temper after brazing for temperatures of 50°C

HD (R290 - hard drawn), HH (R250 - half hard)

MEDICAL GAS TUBE IDENTIFICATION



RECORD OF ACHIEVEMENTS

Since this Standard was introduced in 2001, we are proud to have supplied **KEMBLA®** Medical Gas copper tube to BS EN 13348 to the following projects:

Malaysia

Petronas Hospital, Kuala Lumpur
 Ipoh Specialist Hospital, Ipoh Perak
 Tung Shin Hospital, Kuala Lumpur
 Hospital Cancer, Nilai
 Hospital Army, Kuala Lumpur
 Hospital Terangganu Wad I.C.U.,
 Kuala Terangganu
 Columbia Asia Medical Centre
 Puchong, KL
 Columbia Asia Medical Centre
 Johor Baharu
 Columbia Asia Medical Centre Taiping
 Hospital Jantung, Kuala Lumpur
 Hospital Hemodialysis, Seremban
 Hospital Sultan Aminah, Johor
 Seremban Specialist Hospital,
 Seremban
 Hospital Tropicana, Kuala Lumpur
 Hospital USCI
 Kota Bahru Hospital
 Pasir Gudang Hospital
 Elizabeth Hospital
 KL Centre Hospital
 Rawang Specialist Hospital
 Desa Park City Hospital

Tampin Hospital

Seremban General Hospital
 Shah Alam Hospital,
 Likas Medical Centre, Sabah
China
 Nanjing Ming Ji Hospital, Nanjing
Vietnam
 Nam Dinh General Hospital
 Lang Son Provincial General Hospital
 Phuong Chau OB/GYN
 International Hospital
 Binh DINH General Hospital
 Dong Da General Hospital
 Hanoi Obstetrics Hospital
 National Pediatric Hospital
 Bac Ninh General Hospital
 221 Army Hospital
 Hoa Binh General Provincial Hospital
 Cua Dong General Hospital, Vinh City
 Ha Giang General Hospital
 Bai Chay General Hospital
Jordan
 Italian Hospital, Amman
 Jabal Al Zaitoon Hospital, Zarqa
 Princess Basma Hospital, Irbid
Macau
 Kiang Wu Hospital

Indonesia

Siloam Hospital, Jakarta
 Gambiran Hospital, Surabaya

Singapore

Alexandra Khoo Teck Puat Hospital
 Tan Tock Seng Hospital
 Novena Hospital
 National University Hospital
 Farrer Park Hospital
 National Heart Centre

Hong Kong

Hong Kong Adventist Hospital
 Precious Blood Hospital
 Queen Elizabeth Hospital
 North Lantau Island Hospital
 Pamela Youde Nethersole
 Eastern Hospital
 Yan Chai Hospital
 Hong Kong Sanatorium & Hospital
 St. Teresa's Hospital
 Union Hospital
 Matilda International Hospital
 Harbour Building Dental Clinic
 Centro Hospitalar
 Conde de São Januário

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1920



2010

MM Kembla was established in 1916 at Port Kembla, south of Sydney, in the state of New South Wales, Australia. It was from this location that the famous **KEMBLA**[®] brand originated. The company has been manufacturing copper products on the site since 1918 and first made copper tube there in 1920.

The factory is certified as a Quality Endorsed facility to ISO9001 by SAI Global, as shown by the Certificate of Registration below. MM Kembla also has a variety of third party accreditations to Australian, British/European and American Standards for many of its product ranges.



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