PUBLIC RECORD

Australian Government
Department of Industry, Science and Resources

Anti-Dumping Commission

# File Note

## Investigation 557 and 580

## Copper tube exported to Australia from the People's Republic of China, the Republic of Korea and the Socialist Republic of Vietnam

## Visit to Metal Manufactures Pty Ltd (MM Kembla)

| | | |
|---|---|---|
| Visit Date | Tuesday 8 November 2022 | |
| Location | MM Kembla Tube Plant<br>30 Gloucester Boulevarde PORT KEMBLA NSW 2505 | |
| Attendees | | |
| MM Kembla | Mr Tony Bova | General Manager |
| | [redacted] | [redacted] |
| | Mr Chad Uphill | Consultant to MM Kembla |
| | | |
| Anti-Dumping Commission | [redacted] | [redacted] |
| | [redacted] | [redacted] |

**Summary**

Representatives of the Anti-Dumping Commission (the commission) travelled to MM Kembla in Port Kembla New South Wales to discuss certain matters raised in Anti-Dumping Review Panel (ADRP) Report 146-150 and ADRP Report 152.

The ADRP'S reports outline the reasons for its decisions to revoke the Anti-Dumping Commissioner's (the Commissioner's) decisions to terminate anti-dumping investigations 557 and 580 into copper tube exports from China, Korea and Vietnam. The commission will publish a Statement of Essential Facts (SEF) for these investigations as soon as practicable. The investigations will resume upon publication of the SEF.[1]

[1] Anti-Dumping Notice Nos 2022/111 and 2022/112.

The visit included an inspection of MM Kembla's production of copper tube facilities and discussions on the items specified by the commission in the meeting agenda.

The following outlines a non-confidential summary of the information MM Kembla provided in relation to the agenda items and various observations made by the commission during an inspection of MM Kembla's production facilities.[2] Information the commission requested of MM Kembla after the visit is also cited.

## Summary of discussion and observations

### 1. Inspection of manufacturing process

The commission inspected the following parts of the production process in operation

- Furnace and production of copper billets;
- Extrusion press;
- Rolling line;
- Drawing;
- Final drawing;
- Cutting;
- Tube bundling;
- Cleaning;
- Capping;
- Lagging;
- Warehousing and dispatching;
- Testing and Quality Inspection.

The commission's comments regarding the production process inspection are set out below:

*Tube bundling*

The commission observed that MM Kembla can test whether tube bundles are within the allowable tolerance for the standard relevant to the tubes in a bundle. It does this by measuring the total weight of the tubes in a bundle and comparing this to the weight of tubes at their nominal dimensions multiplied by the quantity of tube in each bundle.

MM Kembla explains its sales system does not cross reference the weight of the product measured at the bundling station, i.e. the actual weight of finished goods and the nominal weight as per the product specification. Rather, its systems capture the quantity expressed in kilograms at the nominal product dimensions and number of pieces.

*Cleaning and capping station*

The commission observed the cleaning process at a dedicated cleaning station. This station was distinct from other parts of the production process. Tube cleaning involved removal of labelling and packing aids installed at the tube bundling station, immersion of the product in cleaning solutions, drying and relabelling. MM Kembla moves the product to

[2] MM Kembla Visit Data 11 Nov 2022 Item 1 refers.

a holding place within the factory after cleaning and prior to dispatch. MM Kembla provided documents that the company uses to control the cleaning process.

The requirement to clean tubes is not universal. The commission understands this process is relevant to those tubes needing a cap or is to comply with a standard that specifies acceptable levels of surface contamination.

The commission also observed the capping process in operation. Installation of caps uses a method that is determined by the diameter of tube. The capping area was separate from the tube production process. Installation of the cap for larger tubes uses a completely manual process.

A second method for smaller diameter tubes uses a semi-automated cap installation rig. This second method also requires an operator and subsequent re-bundling, wrapping and labelling of tube. It was not in operation at the time of the factory inspection. MM Kembla explained that the capping station is staffed as the production schedule requires from time to time. Staff were not allocated to the capping station for 100% of the shift.

As a result of the commission inspecting MM Kembla's cleaning and capping process, costs associated with cleaning and capping were found to involve more than the relatively inexpensive cost of the plastic caps.

*Testing and Quality Inspection*

The commission inspected MM Kembla's Testing and Quality laboratory and held discussions with staff assigned to this function. The commission observed staff testing for the presence of unacceptable levels of carbon or carbon film on tubes for a medical gas end use. The test procedure used the method described in standard EN 1348. This standard references British Standard BS EN 723 that Australian Standard AS 1432:2004 also describes.

In addition, lab staff simulated the process for testing the cleanness of tubes manufactured to Australian Standard AS1571:2020 and using a solvent such as trichloroethylene. The commission questioned MM Kembla as to whether it had knowledge that exporters of tubes from China, Korea or Vietnam also use this substance.

MM Kembla noted that the 2020 version of AS1571 permits the testing method [trichloroethylene] described by BS EN 723. The 2020 version of the standard permits either a solvent based test or the carbon film test, i.e. no solvent.

MM Kembla pointed out that the earlier AS/NZS 1571:1995 standard describes use of the solvent based testing only. This version of the standard was in force during the period of investigation for Investigation 557, as the release date for the latest version of the standard was 26 June 2020. MM Kembla indicated it is likely some companies were already using the carbon film test before the change to AS1571 in June 2020.

The commission established that MM Kembla has a permanent staff allocation to this area of its production process, owing to the task of testing and quality control being a daily requirement.

MM Kembla's bill of material standard cost profiles do not separately identify the cost associated with its quality control function. Rather, it allocates the quality control cost across a range of other production activities. Notwithstanding this accounting treatment, the commission considers that the company would be able to identify the relevant direct labour costs, i.e. by employee name, associated with the activity.

## 2. Goods and like goods

*Overview of differences between copper tube standards*

MM Kembla provided the following summaries that broadly outline the characteristics of tubes produced to comply with each of the three Australian Standards cited in the goods description for the investigations.

All goods under consideration imported into Australia whether from China, Korea or Vietnam must comply with the AS1432, AS/NZ1571 or AS1572.

> **AS1432 - Copper Tubes for Plumbing, Gasfitting and Drainage Applications**
> Physically, AS1432 round seamless copper tubes are typically bare or coated copper tube containing ink marking and incising in accordance with and referencing the product standard and are packaged with open ends (uncapped). Tubes complying to AS1432 tube must also possess Watermark certification.
>
> **AS/NZ1571 - Copper - Seamless Tubes for Air Conditioning and Refrigeration**
> Physically, AS/NZS 1571 round seamless copper tubes are bare (uncoated) and contain ink marking in accordance with and referencing the standard, are internally cleaned and tube ends are plastic/rubber capped to protect from internal contamination (green, pink, yellow or black caps).
>
> **AS1572 - Copper and Copper Alloys - Seamless Tubes for Engineering Purposes**
> Physically, AS 1572 tubes can be round, square or rectangular. For the goods the subject of 557/580, physically the goods are round seamless copper tubes typically bare and containing ink marking in accordance with and referencing the standard.

*Conformance to tube standards in exporting countries*

MM Kembla tabled information to claim domestic sales of copper tubes by exporters in China, Korea and Vietnam are not likely compliant to the relevant copper tube standards in these countries.

MM Kembla's claim uses data it obtained after testing a sample of Australian copper tube imports.[3] MM Kembla's testing found instances of tube imports where the product did not comply with the Australian standard.

[3] MM Kembla first provided data to the commission in its submission of 4 October 2021. Confidential Attachment 8 to EPR 557 Item 035, pp.33-34.

Specifically, the measured size of the tube was below the minimum allowable values for outside diameter (OD) and wall thickness permitted in the Australian standard. MM Kembla concludes the product is 'drawn thin' by more than the Australian standard allows.

MM Kembla put forward its position that observations of non-conformance relating to Australian imports suggests domestic sales in each exporting country would likely exhibit the same level of non-conformance. In the event that the commission should find MM Kembla's opinion to be correct, MM Kembla considers that relevant normal value adjustments are required to ensure a fair comparison.

*Relationship between outside diameter, wall thickness and safe working pressure*

MM Kembla presented information to aid with the commission's understanding of a relationship between variation in product dimension and safe working pressure.

MM Kembla explained that the safe working pressure of tubes conforming to AS1432 and AS1571 is defined by AS4041. The following four factors contribute to the calculation of safe working pressure:[4]

- Maximum allowable design tensile stress for annealed copper (annealed tensile strength is lower and is worst case) - this is used even if the tube is not annealed, because during brazing on installation, the tube becomes annealed during heating;
- Outside diameter;
- 'Minimum' wall thickness of the tube at any point;
- Operating temperature of the pipeline (as it can change the design tensile strength).

MM Kembla explained that tubes sold in unregulated markets with non-mandatory product standards can lead to selection of 'fit for purpose' tube sizes. Such tube sizes may meet the customer's end use requirements, although are unlikely to conform to an equivalent Australian standard.

By way of example, MM Kembla highlighted how a tube designed to satisfy the maximum operating pressure of 500kPa for a detached Australian home may be satisfactory within this context, but it would not meet the performance requirement of a Type B tube to AS 1432. Similarly, tube produced to Chinese standard GB/T 17791 for refrigeration end use relies on the EN 12735 standard that permits a lower wall thickness for tubes used in equipment compared to tubes used in the field.[5]

In both of the above examples, a tube produced to satisfy the 'fit for purpose' application will have a lower wall thickness, smaller OD or a combination of the two. MM Kembla considers this translates to a tube that requires less copper and thus a lower price. It also means the tube may not meet the performance requirements set out in particular tube standards.

[4] MM Kembla Visit Data 11 Nov 2022 Item 2 refers.
[5] EN 12735 Data [Attachment F5 to an ADRP submission]

*Product and physical characteristics affecting price*

MM Kembla provided a table of the products produced by its facility in Australia during the investigation periods for Investigation 557 and 580. This included a list of tubes summarised by OD and the relevant minimum and maximum wall thickness.[6]

MM Kembla reiterated that all pricing in the industry is based on the cost of copper (calculated at the nominal tube dimension) plus an amount to cover fabrication costs. MM Kembla listed the following factors it considers influence cost of production and price:

- Compliance to standards;
- Temper of the material (Hard Drawn/ Half Hard /Annealed);
- Nominal dimensions of the product OD & wall thickness;
- Dimensional tolerances allowable by product (as dictated by the product standard);
- Tube lagging;
- Cleaning and capping requirements – including cleaning method;
- Packaging.

## 3. Production process

*Cost allocations*

MM Kembla provided bill of material information for a sample of product codes in the capped and uncapped configuration.[7] This identifies direct labour and overhead costs for each process required to make the tube. The costings presented in MM Kembla's bill of material are standard costs.

MM Kembla's bill of material separately identifies standard costs associated with capping and cleaning. Cost associated with other activities such as laboratory quality assurance functions are not separately costed but embedded in overhead cost line items.

Verification of MM Kembla's costs during a verification in the earlier phase of the investigation found it reported total standard and total actual cost at an all products level within its cost of goods sold (COGS) data. The commission does not possess actual cost data for capping and cleaning at the specific product level, however, MM Kembla has provided total actual costs for the relevant cost centres for cleaning and capping.

Given the discrete nature of the cleaning and capping station activity, the commission is satisfied that the cost profile of tubes subject to these processes are distinct from those that are not. Interrogation of financial and production records demonstrate that a reasonable estimate of direct labour and manufacturing overhead costs can be determined for tubes that are cleaned and capped compared with those that are not.

*Recognition of 'drawing thin'*

[6] MM Kembla Visit Data 11 Nov 2022 Item 3 refers.
[7] MM Kembla Visit Data 11 Nov 2022 Item 4 refers.

The following outlines the commission's summary of a detailed discussion held on site at the MM Kembla visit and information tabled by MM Kembla.

The term 'drawing' refers to the manufacturing process of cold drawing copper to make tubes. Drawing 'thin' occurs when tube is produced with an actual OD, or wall thickness [or both], that is less than the amount specified by its nominal dimension.

For example, if the nominal size of a tube is specified to have a wall thickness of 1.02 mm but it is produced with an actual wall thickness of less than 1.02 mm, the tube is considered to be 'drawn thin'. The resulting tube will contain less copper than the amount it would have at the nominal thickness. Drawing thin is advantageous for tube manufacturers as it permits a lower material consumption cost to produce finished goods.

MM Kembla provided calculations that compared the cost of production difference between tubes produced to AS1432 (plumbing) and AS1571 (refrigeration).[8] In MM Kembla's case, tubes to AS1432 have a lower production cost because the standard allows for drawing thin to a greater degree than compared with tubes produced to AS1571, i.e. AS1432 tubes contain less copper when compared on a like for like tube size. The lower cost AS1432 tubes have a corresponding lower price compared to AS1571 tubes (AS1571 tubes also have higher cleaning and additional capping costs). MM Kembla also presented bill of material information to further demonstrate.

International standards define the allowable level of drawing thin by specifying the limits on dimensional variation between a tube at its nominal dimension and what is actually produced. Some standards, such as those observed in the Australian market, also define certain combinations of tube diameter and wall thickness.[9] Other standards, such as Chinese Standard GB/T 17791 for refrigeration tube, specify limits on diameter and thickness variation but do not specify particular diameter and wall thickness combinations.

In either of the above cases, a manufacturer will produce tube of a certain nominal diameter and wall thickness combination, whether set by the standard or not. The finished good, however, may be of a size that is less than the nominal dimensions and thus considered to be 'drawn thin'. The difference between the tube size at nominal dimension and in the finished state will depend on the level of variability [possibly by design] within an individual manufacturer's production process.

Where tubes are said to conform with a product standard, e.g. AS1571, drawing thin is acceptable, so long as the finished good is within the range of tolerance(s) specified in a standard. This avoids compromising the performance of a tube in terms of its safe working pressure, the ability to interface with other components or be suitable for practices such as flaring.

For example, the minimum allowable tube dimension in AS1571 permits that a finished product can contain up to 10% less material than the amount required at the nominal dimension. In the case of a tube with a nominal dimension of 12.7 mm OD and 0.91 mm wall thickness, the amount of copper in the tube is 0.30 kilograms per one metre length. Contrasting this to the minimum allowable in the standard, the OD and wall thickness is

[8] MM Kembla Visit Data 11 Nov 2022 Item 5 refers [Plumbing vs Refrigeration Tubes].
[9] AS1571 at Table C.1 refers.

12.62 and 0.819 respectively. This results in a tube weight of 0.27 kilograms per one metre length if the tube is produced at the minimum dimension allowable in the standard.

If the finished product dimension is outside of the acceptable tolerance range specified in a standard, it cannot be considered to conform with that standard. MM Kembla provided information that revealed how other imported tube products failed test procedures designed to verify if a product conformed with Australian standards.[10]

## 4. Selling process

*Impact on price due to 'drawing thin'*

MM Kembla explained that Australian market pricing is based on tube weight at the nominal product dimension. MM Kembla attributes this practice to the way in which Australian standards prescribe tube sizing at specific increments for both outside diameter and wall thickness. The standards do not permit tube sizes outside of these increments.

MM Kembla outlined that overseas markets operate differently to the Australian market because customer and vendor may agree on a nominal size in the alternative to what may be prescribed in a standard. MM Kembla also claim that domestic markets in China and Korea are unregulated, so it is not mandatory for products to conform with a standard. Although both countries publish standards for copper tubes, these are informative rather than prescribed.

MM Kembla expressed a view that a customer and vendor agreeing on a nominal tube size, usually one where the wall thickness is lower, is a form of 'drawing thin' that reduces the price payable by the customer. MM Kembla propose that this leads to lower prices on account of the finished product containing less copper per piece of tube and therefore weighing less than would otherwise be the case. MM Kembla provided data to illustrate its point.[11] The commission found that price variation because of drawing thin was not noticeable when using price per kilogram as the unit of measure but it was when using price per piece.

*Nominal tube dimensions in overseas markets*

The commission understands that the nominal dimensions [OD and wall thickness] of tube sold in the exporting countries are not of the same combination that are sold in the Australian market. This can lead to the nominal dimensions of like goods sold in the exporting countries falling between the allowable nominal dimensions specified in Australian standards.

Returning to AS1571, it permits a nominal OD such as 15.88 mm or 19.05 mm. The standard specifies the manufacturing tolerance on OD is +0/-0.08 mm. This means the tube may be produced with an OD of between:

- 15.8 mm to 15.88 mm in the case of the 15.88 nominal tube size, or
- 18.97 mm to 19.05 mm for the 19.05 nominal tube.

[10] MM Kembla 20221222
[11] MM Kembla Visit Data 11 Nov 2022.

Tubes with a finished or nominal diameter that do not fall within the above ranges are not acceptable in the Australian standard. A similar constraint exists for wall thickness.

The above point illustrates a somewhat separate issue to that of 'drawing thin'. However, it goes to show how the Australian standard exerts control over the tube sizes available for use in the Australian market. Tube made for the domestic markets of countries that export to Australia may not necessarily follow the same tube sizing system, even if their domestic standards specify a size.

## 5. Cleaning and capping costs

*Review of cleaning and capping process*

As set out above, at Item 1, the commission observed the cleaning and capping of copper tubes within MM Kembla's production line. This confirmed that the process of cleaning and tube capping involves costs relating to manufacturing overhead, direct labour and consumption of materials such as cleaning solution and plastic caps.

*Review of MM Kembla cleaning and capping cost data*

The commission and MM Kembla reviewed a worksheet MM Kembla had already supplied to the commission in its 14 May 2021 submission to Investigation 557.[12] This document outlines the cost of capping and cleaning as a proportion of total fabrication cost, i.e. excluding the cost of copper. MM Kembla also provided similar data in bill of material figures for various tube sizes.[13]

The cost information presented in both of MM Kembla's data sets is based on a standard cost methodology. MM Kembla has also provided actual cost data relevant to each cost centre where cleaning and capping activity expense is recognised.[14]

MM Kembla's calculations show total cleaning and capping costs are relatively low when expressed as a proportion of total production cost, inclusive of raw material expense for copper. However, MM Kembla's figures support that the production cost of tubes subject to cleaning and capping causes these tubes to exhibit a cost profile that is distinct from those tubes that are not cleaned and capped.

## 6. Differences between tube standards

MM Kembla tabled the following information to identify differences between international standards for copper tube products used in plumbing applications.

| | AS 1432 | China G/BT 18033 | Korea KS D5301 | Vietnam ASTM B88 | Comment |
|---|---|---|---|---|---|

[12] EPR 557 Item No. 23 Confidential Attachment 7 and Confidential Attachment Visit Data 11 Nov 2022 Item 9 refers.
[13] MM Kembla Visit Data 11 Nov 2022 Item 4 refers.
[14] MM Kembla RFI Response 20230124 at Question 3 refers.

| | AS 1432 | China G/BT 18033 | Korea KS D5301 | Vietnam ASTM B88 | Comment |
|---|---|---|---|---|---|
| Wall Thickness / OD ratio | | Zero overlap | Zero overlap | Zero overlap | |
| Safe Working Pressures | | Zero overlap | Zero overlap | Zero overlap | Generally lower than AS/NZ |
| Standards mandatory | Yes | No | ? | No | Agreed with customer |
| 3rd party certification mandatory | Yes Watermark | No | No | No | |
| Tolerance limits (OD & wall thickness) | As per Standard | Agreed with customer | As per standard (If referencing EN1057) | As per Standard | |
| Chemical composition | Alloy designation C12200 of AS2738 | T2 or TP2 | Alloy designation C12200 | Alloy designation CU12000 or C12200 | In Vietnam a lot of ASTMB88 is also used for Refrigeration (they simply purge the line) |
| Internal surface quality (carbon film test) | Yes for DN15,18 and 20 | As required by customer | Yes (If referencing EN1057) | No | |

Table 1 - Standards Comparison

The following summarises information MM Kembla provided about the differences between standards in relation to chemical composition and product marking.

*Chemical composition*

AS1432 and AS1571 specify the same chemical composition requirement of the copper metal used to make the tubes.

Table 2 in Chinese standard GB/T 18033 specifies two grades, T2 and TP2. Grade TP2 appears to align with Australian standards whereas T2 does not, on the basis that it does not contain phosphorous.

*Ink marking and incising*

With the exception of Chinese Standard GB/T 18033, the following standards generally require ink marking and incising of product data. The exact positioning requirements and type of information varies slightly.

- AS1432
- AS1571
- Korea KS D5301

- Vietnam ASTM B88

The Chinese standard above differs, in so far that it does not specify incising, but it appears similar in other aspects relating to product labelling.

*Product certification*

The following is MM Kembla's outline of Australian certification requirements under the WaterMark scheme.

The WaterMark Certification Scheme is a mandatory Australian certification scheme for certain plumbing and drainage products to ensure that they are fit for purpose for use in plumbing and drainage installation. The Australian Building Codes Board manages and administers the Scheme. The Joint Accreditation System of Australia and New Zealand (JAS-ANZ) accredits WaterMark Conformity Assessment Bodies (WMCABs), who in turn evaluate and certify plumbing and drainage products.

Further details can be found here: Schedule of Products - Pipes – Metallic | WaterMark (abcb.gov.au)

## 7. MCC Structure

MM Kembla proposed the following revisions to the MCC structure previously adopted in the investigations:

- Item 1 [Standard] as strictly whether like goods produced in the exporting countries are manufactured to the Australian standards.
- New MCC Category for Outside Diameter, with the sub-category from 9.52 mm up to 53.98 mm.
- New MCC Category for Wall Thickness, with the sub-category from 0.81 mm up to 2.41 mm.

MM Kembla considers the MCC structure amendments are consistent with the ADRP Panel Member's comments in Decision No. 146-150 and will address where the MCC structure does not take account of physical differences between goods and like goods.

## 8. Rebates

MM Kembla presented information in support of its claims that the commission needs to ensure the investigation takes account of rebates applicable to sales of the goods exported to Australia. The rebates cited by MM Kembla relate to off-invoice rebates provided to Australian importers by Hailiang Hong Kong and possibly by Hailiang in China and Vietnam. These are distinct from rebates provided by Australian importers who on-sell the goods to domestic customers in Australia. MM Kembla provided information in response to the commission's enquires following the visit.[15]

[15] MM Kembla Rebate RFI 20221117 Response No.1 and MM Kembla Rebate RFI 20221123 Response No. 2.

In addition to discussions at the visit, MM Kembla raises the rebate issue several times during the conduct of Investigation 557. See below.

- Case 557 Public Record Item 022 – Australian Industry Exporter Briefing
- Case 557 Public Record Item 035 – MM Kembla 4 October 2021 Submission to SEF 557
- Case 557 Public Record Item 045 – MM Kembla 9 November 2021 Submission on key issues
- Case 557 Public Record Item 049 – MM Kembla 14 September 2022 Submission on ADRP Reports 146-150.

MM Kembla also address the existence of rebates relevant to Investigation 580.

- Case 580 Public Record Item 006 – Australian Industry Exporter Briefing
- Case 580 Public Record Item 010 – MM Kembla 1 October 2021 Submission on verification reports for Hailiang Vietnam and Hailiang Copper Australia.
- Case 580 Public Record Item 012 – File Note 11 October 2021 MM Kembla conference with Anti-Dumping Commission.
- Case 580 Public Record Item 016 – MM Kembla 18 November 2021 Submission to SEF 580
- Case 580 Public Record Item 022 – MM Kembla 14 September 2022 Submission on ADRP Report 152.

The commission will examine the available information relevant to both investigations to determine if rebate schemes were in operation for exports of the goods by entities within the Hailiang group of companies.

## 9. Material Injury

MM Kembla tabled data for the period since the commission published the *Statement of Essential Facts 557* in September 2021. The data now includes import volumes of copper tube from China and Korea for the first half of 2022, representing the highest import volumes since 2014, when expressed on a year-on-year basis.

MM Kembla also reiterated the comments in its submission of 14 September 2022, where it argued that the relationship between Hailiang Australia and its related party exporters in China and Vietnam are not at arms length.